MAGNETICS®

POWDER CORES

Kool Mµ® • Kool Mµ® MAX • Kool Mµ® H*f* • XFLUX® • High Flux • Edge™ • Molypermalloy

We offer the confidence of over ***sixty years of expertise*** in the research, design, manufacture and support of high quality magnetic materials and components.

A major manufacturer of the highest performance materials in the industry including: Kool Mµ®, Kool Mµ® MAX, Kool Mµ® Hƒ, XFLUX®, High Flux, Edge™ and MPP, power ferrites, high permeability ferrites and strip wound cores. Magnetics' products set the standard for providing consistent and reliable electrical properties for a comprehensive range of core materials and geometries. Magnetics is the best choice for a variety of applications ranging from simple chokes and transformers used in telecommunications equipment to sophisticated devices for aerospace electronics.

Magnetics backs its products with unsurpassed technical expertise and customer service. Magnetics' Sales Engineers offer the experience necessary to assist the designer from the initial design phase through prototype approval. Knowledgeable Sales Managers provide dedicated account management. Skilled Customer Service Representatives are easily accessible to provide exceptional sales support. This support, combined with a global presence via a worldwide distribution network, makes Magnetics a superior supplier to the international electronics industry.

Magnetics Locations

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Core Locator & Unit Pack Quantity

Kool Mμ® Toroids

P/N	PAGE	BOX QTY
77020	93	10,000
77021	93	10,000
77022	93	10,000
77023	93	10,000
77030	97	10,000
77031	97	10,000
77032	97	10,000
77033	97	10,000
77040	100	8,000
77041	100	8,000
77042	100	8,000
77043	100	8,000
77050	102	5,000
77051	102	5,000
77052	102	5,000
77053	102	5,000
77054	102	5,000
77055	102	5,000
77056	102	5,000
77059	106	1,000
77068	121	35
77069	121	35
77070	121	35
77071	109	250
77072	121	35
77073	121	35
77074	121	35
77075	121	35
77076	111	220
77083	112	180
77089	114	120
77090	114	120
77091	114	120
77092	114	120
77093	114	120
77094	114	120
77095	114	120
77096	126	25
77098	126	25
77099	126	25
77100	126	25
77101	126	25
77102	126	25
77109	118	90
77110	118	90
77111	118	90
77112	118	90
77113	103	2,000
77120	103	2,000
77121	103	2,000
77122	103	2,000
77123	103	2,000
77130	101	6,000
77131	101	6,000
77132	101	6,000
77133	101	6,000
77140	90	1,500
77141	90	1,500
77150	91	750
77151	91	750
77154	91	750
77155	91	750
77159	126	25
77164	128	6
77165	128	6
77180	92	500
77181	92	500
77184	92	500
77185	92	500
77189	119	80
77190	119	80
77191	119	80
77192	119	80
77193	119	80
77194	119	80
77195	119	80
77206	105	1,600
77208	105	1,600
77209	105	1,600
77210	105	1,600
77211	105	1,600
77212	118	90
77213	118	90
77214	118	90
77224	103	2,000
77225	103	2,000
77240	94	10,000
77241	94	10,000
77242	94	10,000
77243	94	10,000
77244	94	10,000
77245	94	10,000
77254	112	180
77256	112	180
77257	112	180
77258	112	180
77259	112	180
77260	112	180
77270	95	10,000
77271	95	10,000
77272	95	10,000
77273	95	10,000
77280	98	8,000
77281	98	8,000
77282	98	8,000
77283	98	8,000
77290	99	8,000
77291	99	8,000
77292	99	8,000
77293	99	8,000
77294	99	8,000
77295	99	8,000
77310	106	1,000
77312	106	1,000
77313	106	1,000
77314	106	1,000
77315	106	1,000
77316	106	1,000
77324	111	220
77326	111	220
77327	111	220
77328	111	220
77329	111	220
77330	111	220
77334	101	6,000
77335	101	6,000
77336	127	16
77337	127	16
77338	127	16
77339	127	16
77350	107	720
77351	107	720
77352	107	720
77353	107	720
77354	107	720
77355	107	720
77356	107	720
77380	104	2,000
77381	104	2,000
77382	104	2,000
77383	104	2,000
77384	104	2,000
77385	104	2,000
77386	104	2,000
77410	96	10,000
77411	96	10,000
77412	96	10,000
77413	96	10,000
77414	96	10,000
77415	96	10,000
77431	115	105
77438	115	105
77439	115	105
77440	115	105
77441	115	105
77442	115	105
77443	115	105
77444	90	1,500
77445	90	1,500
77446	113	120
77448	113	120
77450	113	120
77451	113	120
77452	113	120
77453	113	120
77454	113	120
77548	109	250
77550	109	250
77551	109	250
77552	109	250
77553	109	250
77555	109	250
77585	110	300
77586	110	300
77587	110	300
77588	110	300
77589	110	300
77590	110	300
77591	110	300
77614	120	45
77615	120	45
77616	120	45
77617	120	45
77618	120	45
77619	120	45
77620	120	45
77715	117	90
77716	117	90
77717	117	90
77718	117	90
77719	117	90
77720	117	90
77721	117	90
77725	116	70
77726	116	70
77727	116	70
77728	116	70
77729	116	70
77730	116	70
77733	116	70
77734	122	24
77735	122	24
77736	122	24
77737	122	24
77738	122	24
77739	122	24
77740	122	24
77773	125	25
77774	125	25
77775	125	25
77776	125	25
77777	125	25
77778	125	25
77824	93	10,000
77825	93	10,000
77834	97	10,000
77835	97	10,000
77844	100	8,000
77845	100	8,000
77847	105	1,600
77848	105	1,600
77866	123	45
77867	123	45
77868	123	45
77869	123	45
77870	123	45
77871	123	45
77872	123	45
77874	95	10,000
77875	95	10,000
77884	98	8,000
77885	98	8,000
77894	108	400
77906	124	40
77907	124	40
77908	124	40
77909	124	40
77910	124	40
77911	124	40
77912	124	40
77930	108	400
77932	108	400
77934	108	400
77935	108	400
77936	108	400

Core Locator & Unit Pack Quantity

Kool Mμ® MAX Toroids

P/N	PAGE	BOX QTY
79051	102	5,000
79052	102	5,000
79056	102	5,000
79057	102	5,000
79059	106	1,000
79067	121	35
79071	109	250
79072	121	35
79073	121	35
79074	121	35
79075	121	35
79076	111	220
79079	114	120
79083	112	180
79090	114	120
79091	114	120
79092	114	120
79095	114	120
79097	126	25
79099	126	25
79100	126	25
79101	126	25
79102	126	25
79110	118	90
79111	118	90
79112	118	90
79113	103	2,000
79121	103	2,000
79122	103	2,000
79164	128	6
79188	119	80
79189	119	80
79190	119	80
79191	119	80
79192	119	80
79208	105	1,600
79212	118	90
79215	118	90
79226	103	2,000
79256	112	180
79257	112	180
79260	112	180
79262	112	180
79303	106	1,000
79312	106	1,000
79316	106	1,000
79317	111	220
79326	111	220
79327	111	220
79330	111	220
79336	127	16
79337	127	16
79342	127	16
79351	107	720
79352	107	720
79356	107	720
79357	107	720
79381	104	2,000
79382	104	2,000
79386	104	2,000
79387	104	2,000
79430	115	105
79431	115	105
79439	115	105
79440	115	105
79441	115	105
79446	113	120
79447	113	120
79448	113	120
79450	113	120
79451	113	120
79550	109	250
79551	109	250
79554	109	250
79555	109	250
79586	110	300
79587	110	300
79588	110	300
79591	110	300
79592	110	300
79612	120	45
79614	120	45
79615	120	45
79616	120	45
79617	120	45
79708	117	90
79716	117	90
79717	117	90
79718	117	90
79721	117	90
79726	116	70
79727	116	70
79728	116	70
79733	116	70
79734	122	24
79735	122	24
79736	122	24
79737	122	24
79744	122	24
79750	116	70
79772	125	25
79774	125	25
79775	125	25
79776	125	25
79777	125	25
79847	105	1,600
79848	105	1,600
79849	105	1,600
79867	123	45
79868	123	45
79869	123	45
79872	123	45
79873	123	45
79894	108	400
79907	124	40
79908	124	40
79909	124	40
79912	124	40
79913	124	40
79932	108	400
79933	108	400
79936	108	400
79937	108	400

Kool Mμ® H*f* Toroids

P/N	PAGE	BOX QTY
76051	102	5,000
76052	102	5,000
76059	106	1,000
76071	109	250
76076	111	220
76083	112	180
76121	103	2,000
76122	103	2,000
76208	105	1,600
76256	112	180
76312	106	1000
76326	111	220
76351	107	720
76352	107	720
76381	104	2,000
76382	104	2,000
76550	109	250
76586	110	300
76587	110	300
76848	105	1,600
76894	108	400
76932	108	400

Core Locator & Unit Pack Quantity

XFLUX® Toroids

P/N	PAGE	BOX QTY
78050	102	5,000
78051	102	5,000
78052	102	5,000
78054	102	5,000
78055	102	5,000
78056	102	5,000
78057	102	5,000
78059	106	1,000
78067	121	35
78068	121	35
78069	121	35
78071	109	250
78072	121	35
78073	121	35
78074	121	35
78076	111	220
78079	114	120
78083	112	180
78089	114	120
78090	114	120
78091	114	120
78093	114	120
78094	114	120
78095	114	120
78096	126	25
78097	126	25
78099	126	25
78100	126	25
78102	126	25
78110	118	90
78111	118	90
78113	103	2,000
78120	103	2,000
78121	103	2,000
78122	103	2,000
78159	126	25
78163	128	6
78165	128	6
78170	129	8
78171	129	8
78188	119	80
78189	119	80
78191	119	80

P/N	PAGE	BOX QTY
78192	119	80
78193	119	80
78194	119	80
78195	119	80
78206	105	1,600
78208	105	1,600
78210	105	1,600
78211	105	1,600
78212	118	90
78213	118	90
78214	118	90
78215	118	90
78224	103	2,000
78225	103	2,000
78226	103	2,000
78254	112	180
78256	112	180
78258	112	180
78259	112	180
78260	112	180
78262	112	180
78303	106	1,000
78310	106	1,000
78312	106	1,000
78314	106	1,000
78315	106	1,000
78316	106	1,000
78317	111	220
78324	111	220
78326	111	220
78328	111	220
78329	111	220
78330	111	220
78337	127	16
78338	127	16
78342	127	16
78350	107	720
78351	107	720
78352	107	720
78354	107	720
78355	107	720
78356	107	720
78357	107	720

P/N	PAGE	BOX QTY
78380	104	2,000
78381	104	2,000
78382	104	2,000
78384	104	2,000
78385	104	2,000
78386	104	2,000
78387	104	2,000
78430	115	105
78431	115	105
78438	115	105
78439	115	105
78440	115	105
78442	115	105
78443	115	105
78447	113	120
78448	113	120
78450	113	120
78451	113	120
78452	113	120
78453	113	120
78454	113	120
78548	109	250
78550	109	250
78552	109	250
78553	109	250
78554	109	250
78555	109	250
78585	110	300
78586	110	300
78587	110	300
78589	110	300
78590	110	300
78591	110	300
78592	110	300
78612	120	45
78615	120	45
78616	120	45
78617	120	45
78618	120	45
78619	120	45
78708	117	90
78715	117	90
78716	117	90

P/N	PAGE	BOX QTY
78717	117	90
78719	117	90
78720	117	90
78721	117	90
78725	116	70
78726	116	70
78727	116	70
78729	116	70
78730	116	70
78733	116	70
78735	122	24
78736	122	24
78737	122	24
78738	122	24
78739	122	24
78744	122	24
78750	116	70
78772	125	25
78773	125	25
78775	125	25
78776	125	25
78777	125	25
78847	105	1,600
78848	105	1,600
78849	105	1,600
78867	123	45
78868	123	45
78870	123	45
78871	123	45
78872	123	45
78873	123	45
78894	108	400
78907	124	40
78908	124	40
78910	124	40
78911	124	40
78912	124	80
78913	124	40
78930	108	400
78932	108	400
78934	108	400
78935	108	400
78936	108	400

Core Locator & Unit Pack Quantity

High Flux Toroids

P/N	PAGE	BOX QTY
58018	93	10,000
58019	93	10,000
58020	93	10,000
58021	93	10,000
58022	93	10,000
58023	93	10,000
58028	97	10,000
58029	97	10,000
58030	97	10,000
58031	97	10,000
58032	97	10,000
58033	97	10,000
58038	100	8,000
58039	100	8,000
58040	100	8,000
58041	100	8,000
58042	100	8,000
58043	100	8,000
58048	102	5,000
58049	102	5,000
58050	102	5,000
58051	102	5,000
58052	102	5,000
58053	102	5,000
58059	106	1,000
58070	121	35
58071	109	250
58072	121	35
58073	121	35
58074	121	35
58075	121	35
58076	111	220
58083	112	180
58088	114	120
58089	114	120
58090	114	120
58091	114	120
58092	114	120
58099	126	25

P/N	PAGE	BOX QTY
58100	126	25
58101	126	25
58102	126	25
58109	118	90
58110	118	90
58111	118	90
58112	118	90
58118	103	2,000
58119	103	2,000
58120	103	2,000
58121	103	2,000
58122	103	2,000
58123	103	2,000
58128	101	6,000
58129	101	6,000
58130	101	6,000
58131	101	6,000
58132	101	6,000
58133	101	6,000
58164	128	6
58165	128	6
58167	128	6
58190	119	80
58191	119	80
58192	119	80
58195	119	80
58204	105	1,600
58205	105	1,600
58206	105	1,600
58208	105	1,600
58209	105	1,600
58238	94	10,000
58239	94	10,000
58240	94	10,000
58241	94	10,000
58242	94	10,000
58243	94	10,000
58252	112	180
58253	112	180

P/N	PAGE	BOX QTY
58254	112	180
58256	112	180
58257	112	180
58268	95	10,000
58269	95	10,000
58270	95	10,000
58271	95	10,000
58272	95	10,000
58273	95	10,000
58278	98	8,000
58279	98	8,000
58280	98	8,000
58281	98	8,000
58282	98	8,000
58283	98	8,000
58288	99	8,000
58289	99	8,000
58290	99	8,000
58291	99	8,000
58292	99	8,000
58293	99	8,000
58308	106	1,000
58309	106	1,000
58310	106	1,000
58312	106	1,000
58313	106	1,000
58322	111	220
58323	111	220
58324	111	220
58326	111	220
58327	111	220
58336	127	16
58337	127	16
58338	127	16
58339	127	16
58348	107	720
58349	107	720
58350	107	720
58351	107	720

P/N	PAGE	BOX QTY
58352	107	720
58353	107	720
58378	104	2,000
58379	104	2,000
58380	104	2,000
58381	104	2,000
58382	104	2,000
58383	104	2,000
58408	96	10,000
58409	96	10,000
58410	96	10,000
58411	96	10,000
58412	96	10,000
58413	96	10,000
58437	115	105
58438	115	105
58439	115	105
58440	115	105
58441	115	105
58446	113	120
58448	113	120
58451	113	120
58454	113	120
58455	113	120
58456	113	120
58546	109	250
58547	109	250
58548	109	250
58550	109	250
58551	109	250
58583	110	300
58584	110	300
58585	110	300
58586	110	300
58587	110	300
58588	110	300
58614	120	45
58615	120	45
58616	120	45

P/N	PAGE	BOX QTY
58617	120	45
58620	120	45
58714	117	90
58715	117	90
58716	117	90
58717	117	90
58718	117	90
58725	116	70
58726	116	70
58727	116	70
58728	116	70
58734	122	24
58735	122	24
58736	122	24
58737	122	24
58740	122	24
58774	125	25
58775	125	25
58776	125	25
58777	125	25
58778	125	25
58848	105	1,600
58866	123	45
58867	123	45
58868	123	45
58869	123	45
58894	108	400
58906	124	40
58907	124	40
58908	124	40
58909	124	40
58928	108	400
58929	108	400
58930	108	400
58932	108	400
58933	108	400

Edge™ Toroids

P/N	PAGE	BOX QTY
59051	102	5,000
59052	102	5,000
59059	106	1,000
59071	109	250
59076	111	220
59083	112	180

P/N	PAGE	BOX QTY
59121	103	2,000
59122	103	2,000
59208	105	1,600
59256	112	180
59312	106	1,000
59326	111	220

P/N	PAGE	BOX QTY
59351	107	720
59352	107	720
59381	104	2000
59382	104	2000
59550	109	250
59586	110	300

P/N	PAGE	BOX QTY
59587	110	300
59848	105	1,600
59894	108	400
59932	108	400

Core Locator & Unit Pack Quantity

MPP Toroids

P/N	PAGE	BOX QTY
55014	93	10,000
55015	93	10,000
55016	93	10,000
55017	93	10,000
55018	93	10,000
55019	93	10,000
55020	93	10,000
55021	93	10,000
55022	93	10,000
55023	93	10,000
55024	97	10,000
55025	97	10,000
55026	97	10,000
55027	97	10,000
55028	97	10,000
55029	97	10,000
55030	97	10,000
55031	97	10,000
55032	97	10,000
55033	97	10,000
55034	100	8,000
55035	100	8,000
55036	100	5,000
55037	100	8,000
55038	100	8,000
55039	100	8,000
55040	100	8,000
55041	100	8,000
55042	100	8,000
55043	100	8,000
55044	102	5,000
55045	102	5,000
55046	102	5,000
55047	102	5,000
55048	102	5,000
55049	102	5,000
55050	102	5,000
55051	102	5,000
55052	102	5,000
55053	102	5,000
55059	106	1,000
55070	121	35
55071	109	250
55072	121	35
55074	121	35
55075	121	35
55076	111	220
55082	114	120
55083	112	180
55084	114	120
55086	114	120
55087	114	120
55088	114	120
55089	114	120
55090	114	120
55091	114	120
55092	114	120
55098	126	25
55099	126	25
55101	126	25
55102	126	25
55103	118	90
55104	118	90
55106	118	90
55107	118	90
55108	118	90
55109	118	90
55110	118	90
55111	118	90
55112	118	90
55114	103	2,000
55115	103	2,000
55116	103	2,000
55117	103	2,000
55118	103	2,000
55119	103	2,000
55120	103	2,000
55121	103	2,000
55122	103	2,000
55123	103	2,000
55124	101	6,000
55125	101	6,000
55127	101	6,000
55128	101	6,000
55129	101	6,000
55130	101	6,000
55131	101	6,000
55132	101	6,000
55133	101	6,000
55134	90	1,500
55135	90	1,500
55137	90	1,500
55138	90	1,500
55139	90	1,500
55140	90	1,500
55144	91	750
55145	91	750
55147	91	750
55148	91	750
55149	91	750
55150	91	750
55164	128	6
55165	128	6
55167	128	6
55174	92	500
55175	92	500
55177	92	500
55178	92	500
55179	92	500
55180	92	500
55181	92	500
55190	119	80
55191	119	80
55192	119	80
55195	119	80
55196	119	80
55197	119	80
55198	119	80
55199	119	80
55200	105	1,600
55201	105	1,600
55202	105	1,600
55203	105	1,600
55204	105	1,600
55205	105	1,600
55206	105	1,600
55208	105	1,600
55209	105	1,600
55234	94	10,000
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55236	94	10,000
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55238	94	10,000
55239	94	10,000
55240	94	10,000
55241	94	10,000
55242	94	10,000
55243	94	10,000
55248	112	180
55249	112	180
55250	112	180
55251	112	180
55252	112	180
55253	112	180
55254	112	180
55256	112	180
55257	112	180
55264	95	10,000
55265	95	10,000
55266	95	10,000
55267	95	10,000
55268	95	10,000
55269	95	10,000
55270	95	10,000
55271	95	10,000
55272	95	10,000
55273	95	10,000
55274	98	8,000
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55276	98	8,000
55277	98	8,000
55278	98	8,000
55279	98	8,000
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55281	98	8,000
55282	98	8,000
55283	98	8,000
55284	99	8,000
55285	99	8,000
55286	99	8,000
55287	99	8,000
55288	99	8,000
55289	99	8,000
55290	99	8,000
55291	99	8,000
55292	99	8,000
55293	99	8,000
55304	106	1,000
55305	106	1,000
55306	106	1,000
55307	106	1,000
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55309	106	1,000
55310	106	1,000
55312	106	1,000
55313	106	1,000
55318	111	220
55319	111	220
55320	111	220
55321	111	220
55322	111	220
55323	111	220
55324	111	220
55326	111	220
55327	111	220
55336	127	16
55337	127	16
55339	127	16
55340	127	16
55341	127	16
55344	107	720
55345	107	720
55347	107	720
55348	107	720
55349	107	720
55350	107	720
55351	107	720
55352	107	720
55353	107	720
55374	104	2,000
55375	104	2,000
55377	104	2,000
55378	104	2,000
55379	104	2,000
55380	104	2,000
55381	104	2,000
55382	104	2,000
55383	104	2,000
55404	96	10,000
55405	96	10,000
55407	96	10,000
55408	96	10,000
55409	96	10,000
55410	96	10,000
55411	96	10,000
55412	96	10,000
55413	96	10,000
55432	115	105

Core Locator & Unit Pack Quantity

MPP Toroids

P/N	PAGE	BOX QTY
55433	115	105
55435	115	105
55436	115	105
55437	115	105
55438	115	105
55439	115	105
55440	115	105
55441	115	105
55446	113	120
55448	113	120
55451	113	120
55454	113	120
55455	113	120
55456	113	120
55457	113	120
55458	113	120
55459	113	120
55542	109	250
55543	109	250
55544	109	250
55545	109	250

P/N	PAGE	BOX QTY
55546	109	250
55547	109	250
55548	109	250
55550	109	250
55551	109	250
55579	110	300
55580	110	300
55581	110	300
55582	110	300
55583	110	300
55584	110	300
55585	110	300
55586	110	300
55587	110	300
55588	110	300
55614	120	45
55615	120	45
55617	120	45
55620	120	45
55709	117	90
55710	117	90

P/N	PAGE	BOX QTY
55712	117	90
55713	117	90
55714	117	90
55715	117	90
55716	117	90
55717	117	90
55718	117	90
55725	116	70
55726	116	70
55727	116	70
55728	116	70
55734	122	24
55735	122	24
55737	122	24
55740	122	24
55774	125	25
55775	125	25
55777	125	25
55778	125	25
55848	105	1,600
55866	123	45

P/N	PAGE	BOX QTY
55867	123	45
55868	123	45
55869	123	45
55894	108	400
55906	124	40
55907	124	40
55908	124	40
55909	124	40
55924	108	400
55925	108	400
55926	108	400
55927	108	400
55928	108	400
55929	108	400
55930	108	400
55932	108	400
55933	108	400

Kool Mµ® E Cores, U Cores and Blocks

P/N	PAGE	BOX QTY
K114LE026	130	18
K114LE040	130	18
K114LE060	130	18
K130LE026	130	16
K130LE040	130	16
K130LE060	130	16
K160LE026	130	16
K1808E026	130	2,880
K1808E040	130	2,880
K1808E060	130	2,880
K1808E090	130	2,880
K2510E026	130	1,728
K2510E040	130	1,728
K2510E060	130	1,728
K2510E090	130	1,728
K3007E026	130	720
K3007E040	130	720
K3007E060	130	720
K3007E090	130	720
K3112U040	132	672
K3112U060	132	672
K3112U090	132	672
K3515E026	130	720
K3515E040	130	720
K3515E060	130	720
K3515E090	130	720
K4017E026	130	264
K4017E040	130	264
K4017E060	130	264
K4017E090	130	264
K4020E026	130	192

P/N	PAGE	BOX QTY
K4020E040	130	192
K4020E060	130	192
K4020E090	130	192
K4022E026	130	168
K4022E040	130	168
K4022E060	130	168
K4022E090	130	168
K4110U040	132	480
K4110U060	132	480
K4110U090	132	480
K4111U040	132	480
K4111U060	132	480
K4111U090	132	480
K4119U040	132	240
K4119U060	132	240
K4119U090	132	240
K4317E026	130	270
K4317E040	130	270
K4317E060	130	270
K4317E090	130	270
K4741B026	131	48
K4741B040	131	48
K4741B060	131	48
K5030B026	131	64
K5030B040	131	64
K5030B060	131	64
K5527U026	132	128
K5527U040	132	128
K5527U060	132	128
K5528B026	131	64
K5528B040	131	64

P/N	PAGE	BOX QTY
K5528B060	131	64
K5528E026	130	64
K5528E040	130	64
K5528E060	130	64
K5528E090	130	64
K5529U026	132	96
K5529U040	132	96
K5529U060	132	96
K5530E026	130	96
K5530E040	130	96
K5530E060	130	96
K5530E090	130	96
K6030B026	131	80
K6030B040	131	80
K6030B060	131	80
K6131B026	131	80
K6131B040	131	80
K6131B060	131	80
K6527E026	130	54
K6527E040	130	54
K6527E060	130	54
K6527U026	132	54
K6527U040	132	54
K6527U060	132	54
K6533U026	132	54
K6533U040	132	54
K6533U060	132	54
K7020B026	131	90
K7020B040	131	90
K7020B060	131	90
K7030B026	131	60

P/N	PAGE	BOX QTY
K7030B040	131	60
K7030B060	131	60
K7228E026	130	84
K7228E040	130	84
K7228E060	130	84
K7236U026	132	60
K7236U040	132	60
K7236U060	132	60
K8020E026	130	63
K8020E040	130	63
K8020E060	130	63
K8020U026	132	63
K8020U040	132	63
K8020U060	132	63
K8024E026	130	45
K8024E040	130	45
K8024E060	130	45
K8030B026	131	48
K8030B040	131	48
K8030B060	131	48
K8038U026	132	63
K8038U040	132	63
K8038U060	132	63
K8044E026	130	63
K8044E040	130	63
K8044E060	130	63
K9541B026	131	30
K9541B040	131	30
K9541B060	131	30

Core Locator & Unit Pack Quantity

XFLUX® E Cores, U Cores and Blocks

P/N	PAGE	BOX QTY
X114LE026	130	18
X114LE040	130	18
X114LE060	130	18
X1808E026	130	2,880
X1808E040	130	2,880
X1808E060	130	2,880
X2510E026	130	1,728
X2510E040	130	1,728
X2510E060	130	1,728
X3007E026	130	720
X3007E040	130	720
X3007E060	130	720
X3112U026	132	672
X3112U040	132	672
X3112U060	132	672
X3515E026	130	720
X3515E040	130	720
X3515E060	130	720
X4017E026	130	264
X4017E040	130	264
X4017E060	130	264
X4020E026	130	192
X4020E040	130	192
X4020E060	130	192
X4022E026	130	168
X4022E040	130	168
X4022E060	130	168
X4110U026	132	480
X4110U040	132	480
X4110U060	132	480
X4111U026	132	480
X4111U040	132	480
X4111U060	132	480
X4119U026	132	240
X4119U040	132	240
X4119U060	132	240
X4317E026	130	270
X4317E040	130	270
X4317E060	130	270
X4741B026	131	48
X4741B040	131	48
X4741B060	131	48
X5030B026	131	64
X5030B040	131	64
X5030B060	131	64
X5527U026	132	128
X5527U040	132	128
X5527U060	132	128
X5528B026	131	64
X5528B040	131	64
X5528B060	131	64
X5528E026	130	112
X5528E040	130	112
X5528E060	130	112
X5529U026	132	96
X5529U040	132	96
X5529U060	132	96
X5530E026	130	96
X5530E040	130	96
X5530E060	130	96
X6030B026	131	80
X6030B040	131	80
X6030B060	131	80
X6131B026	131	80
X6131B040	131	80
X6131B060	131	80
X6527E026	130	54
X6527E040	130	54
X6527E060	130	54
X6527U026	132	54
X6527U040	132	54
X6527U060	132	54
X6533U026	132	54
X6533U040	132	54
X6533U060	132	54
X7020B026	131	90
X7020B040	131	90
X7020B060	131	90
X7030B026	131	60
X7030B040	131	60
X7030B060	131	60
X7228E026	130	84
X7228E040	130	84
X7228E060	130	84
X7236U026	132	60
X7236U040	132	60
X7236U060	132	60
X8020E026	130	63
X8020E040	130	63
X8020E060	130	63
X8020U026	132	63
X8020U040	132	63
X8020U060	132	63
X8024E026	130	45
X8024E040	130	45
X8024E060	130	45
X8030B026	131	48
X8030B040	131	48
X8030B060	131	48
X8038U026	132	63
X8038U040	132	63
X8038U060	132	63
X8044E026	130	63
X8044E040	130	63
X8044E060	130	63

Kool Mµ® EQ Cores and LP Cores

P/N	PG	BOX QTY
LPK2314E026L087	133	630
LPK2314E040L087	133	630
LPK2314E060L087	133	630
LPK2314E075L087	133	630
LPK2518E026L099	133	588
LPK2518E040L099	133	588
LPK2518E060L099	133	588
LPK2518E075L099	133	588
EQK2619E026L101	133	462
EQK2619E040L101	133	462
EQK2619E060L101	133	462
EQK2619E075L101	133	462
EQK2619E026L124	133	420
EQK2619E040L124	133	420
EQK2619E060L124	133	420
EQK2619E075L124	133	420
EQK3222E026L101	133	360
EQK3222E040L101	133	360
EQK3222E060L101	133	360
EQK3222E075L101	133	360
EQK3222E026L152	133	300
EQK3222E040L152	133	300
EQK3222E060L152	133	300
EQK3222E075L152	133	300
EQK3626E026L174	133	240
EQK3626E040L174	133	240
EQK3626E060L174	133	240
EQK3626E075L174	133	240
EQK4128E026L199	133	160
EQK4128E040L199	133	160
EQK4128E060L199	133	160
EQK4128E075L199	133	260
LPK4225E026L123	133	180
LPK4225E040L123	133	180
LPK4225E060L123	133	180
LPK4225E075L123	133	180
LPK4225E026L158	133	180
LPK4225E040L158	133	180
LPK4225E060L158	133	180
LPK4225E075L158	133	180
EQK5032E026L250	133	96
EQK5032E040L250	133	96
EQK5032E060L250	133	96
EQK5032E075L250	133	96

XFLUX® EQ Cores and LP Cores

P/N	PG	BOX QTY
LPX2314E026L087	133	630
LPX2314E040L087	133	630
LPX2314E060L087	133	630
LPX2314E075L087	133	630
LPX2518E026L099	133	588
LPX2518E040L099	133	588
LPX2518E060L099	133	588
LPX2518E075L099	133	588
EQX2619E026L101	133	462
EQX2619E040L101	133	462
EQX2619E060L101	133	462
EQX2619E075L101	133	462
EQX2619E026L124	133	420
EQX2619E040L124	133	420
EQX2619E060L124	133	420
EQX2619E075L124	133	420
EQX3222E026L101	133	360
EQX3222E040L101	133	360
EQX3222E060L101	133	360
EQX3222E075L101	133	360
EQX3222E026L152	133	300
EQX3222E040L152	133	300
EQX3222E060L152	133	300
EQX3222E075L152	133	300
EQX3626E026L174	133	240
EQX3626E040L174	133	240
EQX3626E060L174	133	240
EQX3626E075L174	133	240
EQX4128E026L199	133	160
EQX4128E040L199	133	160
EQX4128E060L199	133	160
EQX4128E075L199	133	160
LPX4225E026L123	133	180
LPX4225E040L123	133	180
LPX4225E060L123	133	180
LPX4225E075L123	133	180
LPX4225E026L158	133	180
LPX4225E040L158	133	180
LPX4225E060L158	133	180
LPX4225E075L158	133	180
EQX5032E026L250	133	96
EQX5032E040L250	133	96
EQX5032E060L250	133	96
EQX5032E075L250	133	96

Core Locator & Unit Pack Quantity

High Flux EQ Cores and LP Cores

P/N	PG	BOX QTY
LPH2314E026L087	133	630
LPH2314E040L087	133	630
LPH2314E060L087	133	630
LPH2314E075L087	133	630
LPH2518E026L099	133	588
LPH2518E040L099	133	588
LPH2518E060L099	133	588
LPH2518E075L099	133	588
EQH2619E026L101	133	462
EQH2619E040L101	133	462
EQH2619E060L101	133	462
EQH2619E075L101	133	462
EQH2619E026L124	133	420
EQH2619E040L124	133	420
EQH2619E060L124	133	420
EQH2619E075L124	133	420
EQH3222E026L101	133	360
EQH3222E040L101	133	360
EQH3222E060L101	133	360
EQH3222E075L101	133	360
EQH3222E026L152	133	300
EQH3222E040L152	133	300
EQH3222E060L152	133	300
EQH3222E075L152	133	300
EQH3626E026L174	133	240
EQH3626E040L174	133	240
EQH3626E060L174	133	240
EQH3626E075L174	133	240
EQH4128E026L199	133	160
EQH4128E040L199	133	160
EQH4128E060L199	133	160
EQH4128E075L199	133	260
LPH4225E026L123	133	180
LPH4225E040L123	133	180
LPH4225E060L123	133	180
LPH4225E075L123	133	180
LPH4225E026L158	133	180
LPH4225E040L158	133	180
LPH4225E060L158	133	180
LPH4225E075L158	133	180
EQH5032E026L250	133	96
EQH5032E040L250	133	96
EQH5032E060L250	133	96
EQH5032E075L250	133	96

Introduction

Magnetics Kool Mµ® powder cores are distributed air gap cores made from a ferrous alloy powder for low losses at elevated frequencies. The near zero magnetostriction alloy makes Kool Mµ ideal for eliminating audible frequency noise in filter inductors. In high frequency applications, core losses of powdered iron, for instance, can be a major factor in contributing to undesirable temperature rises.

Kool Mµ cores are superior because their losses are significantly less. Kool Mµ cores generally offer a reduction in core size or an improvement in efficiency and temperature rise compared with powdered iron cores. This performance advantage is greater at higher frequencies.

Compared with ferrites, Kool Mµ has the advantage of much higher saturation, soft (controlled) saturation, and temperature stability. The result is often a smaller overall package size for Kool Mµ compared with a gapped ferrite inductor.

Kool Mµ is available in a variety of core types for maximum flexibility. Toroids offer compact size and self-shielding. E cores and U cores afford lower cost of winding, use of foil inductors, and ease of fixturing. Very large cores and structures are available to support very high current applications. These include toroids up to 102 mm, 133 mm and 165 mm; large E cores; U cores; stacked shapes; and blocks.

Magnetics Kool Mµ® MAX powder cores are distributed air gap cores made from a ferrous alloy powder offering 50% better DC bias performance than standard Kool Mµ material. Use of copper wire is minimized by maintaining inductance using less turns, resulting in savings in overall component cost. Inductors built with Kool Mµ MAX do not have several of the disadvantages that are inherent with gapped ferrite cores, including low saturation flux density and fringing losses at the ferrite's discrete air gap.

Magnetics Kool Mµ® Hƒ distributed air gap powder cores are the best option for achieving superior efficiency in medium and high current power inductors. With low losses in the target range of 200-500 kHz, Kool Mµ Hƒ was developed to serve the needs of new SiC and GaN switching power supplies. Kool Mµ Hƒ can be used from 20 kHz up to several MHz while maintaining the same saturation and temperature performance benefits of Kool Mµ and Kool Mµ MAX.

Magnetics XFlux® distributed air gap cores are made from 6.5% silicon iron powder for very high saturation flux density, comparable with High Flux. The soft saturation of XFlux material results in smaller and more robust designs than with gapped ferrite cores or laminated gapped cores. XFlux cores are ideal for low and medium frequency chokes where inductance at peak load is critical.

Magnetics High Flux powder cores are distributed air gap cores made from a 50% nickel – 50% iron alloy powder for very high resistance to saturation at high current. High Flux cores have advantages that result in superior performance in certain applications involving high power, high DC bias, or high AC excitation amplitude. The High Flux alloy has saturation flux density that is twice that of MPP alloy and three times or more than that of ferrite. As a consequence, High Flux cores can support significantly more DC bias current or AC flux density.

High Flux offers much lower core losses and superior DC bias compared with powdered iron cores. High Flux cores offer lower core losses and similar DC bias compared with XFlux cores. Frequently, High Flux allows the designer to reduce the size of an inductive component compared with MPP, powdered iron, or ferrite.

Magnetics Edge™ distributed air gap cores, made from nickel-iron alloy, are the best option for achieving smallest package size in high frequency, current-limited power inductors. When compared with High Flux, Edge achieves dramatically improved DC bias performance and cuts AC core losses in half. Edge retains all the same advantages of soft saturation, high temperature performance, and minimal shift in properties with temperature.

Magnetics Molypermalloy Powder (MPP) cores are distributed air gap toroidal cores made from an 81% nickel, 17% iron, and 2% molybdenum alloy powder for extremely low core losses, highest Q, and highest temperature stability compared with other materials. MPP cores (and all powder cores) exhibit soft saturation, which is a significant design advantage compared with gapped ferrites. Also, unlike ferrites, the MPP saturation curve does not need to be derated with increasing device temperature.

MPP cores possess many outstanding magnetic characteristics, such as high resistivity, low hysteresis and eddy current losses, excellent inductance stability after high DC magnetization or under high DC bias conditions, and minimal inductance shift under high AC excitation.

Magnetics Kool Mµ®, Kool Mµ® MAX, Kool Mµ® Hƒ, XFlux®, High Flux, Edge™ and MPP are true high temperature materials with no thermal aging.

Magnetics is committed to meeting global environmental standards and initiatives. Magnetics' REACH and RoHS compliance statements and reports are available on our website: www.mag-inc.com

Applications and Materials

Magnetics powder cores are most commonly used in power inductor applications, specifically in switch-mode power supply (SMPS) filter inductors, also known as DC inductors or chokes. Other power applications include differential inductors, boost inductors, buck inductors and flyback transformers.

While all seven materials are used in these applications, each has its own advantages. For the lowest loss inductor, Kool Mμ H*f* and MPP materials should be used since they have the lowest core loss. For the smallest package size in a DC bias dominated design, Edge and High Flux should be used since they have the highest flux capacity. XFLUX can be a lower cost alternative to High Flux in situations where the higher core losses and more limited permeability availability of XFLUX is acceptable. Both Kool Mμ and Kool Mμ MAX are economical choices that offer superior DC bias under current loading.

Magnetics' powder cores are used in a variety of other applications, including: High Q filters, high reliability inductors and filters, high temperature inductors and filters, high current CTs, telecom filters, and load coils.

Magnetics' powder cores are available in a variety of shapes including toroids, E cores, U cores, EQ cores, LP cores, cylinders, and blocks, which can be used to create customizable structures. *For more information on cylinders or custom shapes, please contact Magnetics.*

		Kool Mμ®	Kool Mμ® MAX	Kool Mμ® H*f*	XFLUX®	High Flux	Edge™	MPP
Alloy Composition		FeSiAl	FeSiAl	FeSiAl	FeSi	FeNi	FeNi	FeNiMo
Available Permeabilities		14-125	14-60	26, 60	19-125	14-160	26, 60	14-550
Core Loss - 60μ (mW/cc)	50 kHz, 1000 G	215	200	120*	575	250	150	165
	100 kHz, 1000 G	550	550	325*	1,280	625	375	450
Perm vs. DC Bias - 60μ (Oe)	80% of μ_i	45	65	60	100	100	130*	60
	50% of μ_i	95	130	115	170	185	205*	105
60μ Temperature Stability - Typical % shift from -60 to 200°C		6%	3%	5%	4%	4.5%	2%	2.5%
Curie Temperature		500°C	500°C	500°C	700°C	500°C	500°C	460°C
Saturation Flux Density (Tesla)		1.0	1.0	1.0	1.6	1.5	1.5	0.8
Frequency Response - 60μ flat to...		5 MHz	15 MHz	30 MHz	3 MHz	3 MHz	20 MHz	6 MHz
Relative Cost		1x*	2x	2x	1.2x	4x-6x	5x	7x-9x

*indicates best choice

A lower cost family of alternative products to Magnetics' seven premium powder core materials are powdered irons. Manufacturers of powdered iron use a different production process. For comparison with the above table, powdered irons have permeabilities from 10-100; highest core loss; good perm vs. DC bias; fair temperature stability; lower temperature ratings; soft saturation; 0% nickel content; lowest relative cost.

Magnetics' Kool Mμ family of products and powdered iron cores have comparable DC bias performance. The advantages of Kool Mμ compared with powdered iron include (1) lower core losses; (2) no thermal aging, since Kool Mμ is manufactured without the use of organic binders; (3) near zero magnetostriction, which means that Kool Mμ can be useful for addressing audible noise problems; and (4) better stability of permeability vs. AC flux density.

Material Properties

	PERMEABILITY vs. T, B, & f - TYPICAL			
	Permeability (μ)	μ vs. T dynamic range (-50° C TO +100° C) MATERIALS RATED TO 200° C	μ vs. B dynamic range 0 to 400 mT	μ vs. f flat to...
Kool Mμ®	14μ	0.6%	+0.6%	20 MHz
	26μ	1.2%	+1.1%	13 MHz
	40μ	1.9%	+1.7%	9 MHz
	60μ	2.9%	+2.5%	5 MHz
	75μ	3.7%	+3.1%	4 MHz
	90μ	4.4%	+3.8%	3 MHz
	125μ	6.2%	+5.2%	2 MHz
Kool Mμ® MAX	14μ	0.3%	+0.9%	27 MHz
	19μ	0.4%	+1.3%	25 MHz
	26μ	0.6%	+1.7%	22 MHz
	40μ	0.9%	+2.7%	18 MHz
	60μ	1.3%	+4.0%	13 MHz
Kool Mμ® H*f*	26μ	0.8%	+0.8%	23 MHz
	60μ	2.5%	+1.8%	16 MHz
XFlux®	19μ	0.5%	+7.1%	6 MHz
	26μ	1.1%	+10.2%	5 MHz
	40μ	2.0%	+13.2%	4 MHz
	60μ	3.0%	+16.3%	4 MHz
	75μ	3.7%	+20.3%	2 MHz
	90μ	4.5%	+24.4%	2 MHz
	125μ	6.2%	+28.5%	1 MHz
High Flux	14μ	1.5%	+5.0%	3 MHz
	26μ	2.0%	+9.0%	1.5 MHz
	60μ	2.6%	+13.5%	1 MHz
	125μ	3.6%	+19.0%	700 kHz
	147μ	4.8%	+22.0%	500 kHz
	160μ	5.5%	+25.0%	400 kHz
Edge™	26μ	0.9%	+0.8%	22 MHz
	60μ	1.2%	+1.9%	15 MHz
MPP	14μ	0.7%	+0.4%	4 MHz
	26μ	0.9%	+0.4%	3 MHz
	60μ	1.0%	+0.8%	2 MHz
	125μ	1.3%	+1.4%	300 kHz
	147μ, 160μ, 173μ	1.5%	+1.9%	200 kHz
	200μ	1.6%	+2.8%	100 kHz
	300μ	1.6%	+4.5%	90 kHz
	550μ	8.7%	+21.0%	20 kHz

	Curie Temperature	Density (60μ)	Coefficient of Thermal Expansion
Kool Mμ	500°C	5.8 grams/cm^3	10.8 x 10^{-6}/°C
Kool Mμ MAX	500°C	6.5 grams/cm^3	10.8 x 10^{-6}/°C
XFlux	700°C	6.9 grams/cm^3	11.6 x 10^{-6}/°C
High Flux	500°C	7.6 grams/cm^3	5.8 x 10^{-6}/°C
MPP	460°C	7.8 grams/cm^3	12.9 x 10^{-6}/°C

Core Weights

See individual data sheets for nominal core weights. Material densities listed on page 12 are for 60µ. The approximate densities of other permeabilities are related to 60µ density by the factors shown:

Permeability	14µ	19µ	26µ	40µ	60µ	75µ	90µ	125µ	147µ 160µ 173µ	200µ 300µ	550µ
	85%	89%	91%	96%	100%	102%	103%	105%	106%	107%	108%

Unit Conversions

To obtain number of	Multiply number of	By
A·T/cm	oersteds	0.795
oersteds	A·T/cm	1.26
tesla	gauss	0.0001
gauss	tesla	10,000
gauss	mT(milli Tesla)	10
cm^2	in^2	6.452
cm^2	circular mils	5.07×10^{-6}

Core Identification

All Magnetics powder cores have unique part numbers that provide important information about the characteristics of the cores. Depending on size, cores may be stamped using laser etching or ink. A description of each type of part number is provided below.

TOROIDS

C 0 5 5 2 0 6 A 2

Core Finish Code	Voltage Breakdown (wire to wire)	Material Availability	OD Size Availability
A2	2,000 V_{AC} min*	High Flux, Edge, MPP	All
A7	2,000 V_{AC} min*	Kool Mμ, Kool Mμ MAX, Kool Mμ H*ƒ*, XFLUX	All
AY	600 V_{AC} min	All	3.56 - 16.6 mm**
A9	8,000 V_{AC} min	All	>4.65 mm

Catalog Number (designates size and permeability)

Material Code .... 55 = MPP
58 = High Flux
59 = Edge
76 = Kool Mμ H*ƒ*
77 = Kool Mμ
78 = XFLUX
79 = Kool Mμ MAX

Grading Code ..... C0 = Graded into 2% inductance bands – OD <4.65 mm, 5% bands
00 = Not graded

*No voltage breakdown min for A2 or A7 with OD ≤ 4.65mm. A2 and A7 voltage breakdown is 1000 V_{AC} with 4.65mm < OD < 26.9mm

**AY finish not available for 550μ MPP

Powder Core Toroid Marking Summary						
Size (OD mm)	6-digit Shop Order Number	2-digit Material Code	3-digit Catalog Number	2-digit Core Finish Code	Inductance Code	Marking Example
6.35 - 6.86	✔		✔		✔	123456 020 +6
7.87 - 12.7	✔		✔	✔	✔	123456 050A2 +6
> 12.7	✔	✔	✔	✔	✔	123456 55120A2 +6

- Inductance Code is only marked on MPP and High Flux toroids with C0 grading code
- Cores with OD < 6.35 mm are not marked
- Shop order number identifies the product batch, ensuring traceability of every core through the entire manufacturing process, back to raw materials

SHAPES

00K5528E060

Permeability Code ... Permeability, e.g. 060 for 60μ

Shape Code ...... E = E Core
U = U Core
I = I Core/Plate
B = Block

Size Code .... First two digits equal approximate length or OD in mm / Last two digits equal approximate height or ID in mm

Material Code ..... K = Kool Mμ
M = MPP*
H = High Flux*
X = XFLUX
*consult factory

Grading Code ..... 00 = Not graded
- Full part number and shop order number are marked on all shapes

LARGE E CORES

00K130LE026

Permeability Code . . Permeability, e.g. 026 for 26μ

Shape Code ...... LE = Large E Core

Size Code. .... Approximate length in mm

Material Code ..... M = MPP* H = High Flux*
K = Kool Mμ X = XFLUX
*consult factory

Grading Code ..... 00 = Not graded
- Full part number and shop order number are marked on all shapes

EQ & LP CORES

EQ X 2619 E060 L101

Height Code ...... Approximate leg length per piece, e.g. 101 for 10.1 mm

Permeability Code . . Permeability, e.g. 060 for 60μ

Size Code .... First two digits equal approximate length or OD in mm / Last two digits equal approximate width in mm

Material Code ..... K = Kool Mμ H = High Flux
X = XFLUX

Shape Code ...... EQ = EQ Shape
LP = LP Shape

Inductance and Grading

Measured vs. Calculated Inductance

A_L (Inductance factor) is given for each core in this catalog. Inductance for blocks is tested in standard picture frame arrangements. Units for A_L are nH/T^2. A_L is related to nominal calculated inductance (L_N, in µH) by the number of turns, N.

$$L_N = A_L N^2 10^{-3}$$

Magnetics' inductance standards are measured in a Kelsall Permeameter Cup. Actual wound inductance measured outside a Kelsall Cup is greater than the nominal calculated value due to leakage flux and flux developed by the current in the winding. The difference depends on many variables; core size, permeability, core coating thickness, wire size and number of turns, in addition to the way in which the windings are put on the core. The difference is negligible for permeabilities above 125 and turns greater than 500. However, the lower the permeability and/or number of turns, the more pronounced this deviation becomes.

Example : C055930A2 (26.9 mm, 125µ, p. 108)

Number of Turns	Calculated Inductance	Measured Inductance
1,000	157 mH	+0.0%
500	39.3 mH	+0.5%
300	14.1 mH	+1%
100	1.57 mH	+3%
50	393 µH	+5%
25	98.1 µH	+9%

The following formula can be used to approximate the leakage flux to add to the expected inductance. This formula was developed from historical data of cores tested at Magnetics. Be aware that this will only give an approximation based on evenly spaced windings. You may expect as much as a ±50% deviation from this result.

$$L_{LK} = \frac{0.292\,N^{1.065} A_e}{l_e} \quad \text{where:}$$

L_{LK} = leakage inductance adder (µH)
N = number of turns
A_e = core cross section (mm^2)
l_e = core magnetic path length (mm)

Example: C055930A2 with 25 turns (p. 108)

Catalog Data	Calculated Inductance
$A_L = 157$ nH/T^2 $A_e = 65.4$ mm^2 $l_e = 63.5$ mm	$L_N = (157)(25)^2 10^{-3}$ $= 98.1$ µH
Leakage Adder	**Estimated Measured Inductance**
$L_{LK} = \frac{0.292(25)^{1.065}(65.4)}{63.5}$ $= 9.3$ µH	$L = L_N + L_{LK}$ $= 98.1 + 9.3$ $= 107$ µH

Core Inductance Tolerance and Grading

Magnetics powder cores are precision manufactured to an inductance tolerance of ± 8%*, using standard Kelsall Permeameter Cup measurements with a precision series inductance bridge.

MPP and High Flux cores with outside diameters > 4.65 mm are graded into 2% inductance bands as a standard practice at no additional charge. Core grading can reduce winding costs by minimizing turns adjustments when building high turns inductors to very tight inductance specifications. MPP cores 4.65 mm and smaller are graded into 5% bands.

PARTS NOT GRADED		
14µ and 26µ cores • Parylene coated cores		
The following toroid OD sizes:		
62.0 mm OD	68.0 mm OD	74.1 mm OD
77.8 mm OD	101.6 mm OD	132.6 mm OD
165.1 mm OD		

Graded Magnetics MPP cores and High Flux cores are also available with tolerances tighter than the standard ± 8%.

*Kool Mµ cores with OD < 12.7 mm have wider tolerances.

GRADE Stamped on Core OD	INDUCTANCE % Deviation from Nominal		TURNS % Deviation from Nominal	
	From	To	From	To
+8	+8	+7	-4.0	-3.5
+6	+7	+5	-3.5	-2.5
+4	+5	+3	-2.5	-1.5
+2	+3	+1	-1.5	-0.5
+0	+1	-1	-0.5	+0.5
-2	-1	-3	+0.5	+1.5
-4	-3	-5	+1.5	+2.5
-6	-5	-7	+2.5	+3.5
-8	-7	-8	+3.5	+4.0

Core Coating

Magnetics toroidal powder cores are coated with a special epoxy finish that provides a tough, wax tight, moisture and chemical resistant barrier having excellent dielectric properties. Toroids up to 16.5 mm OD can also be coated with Parylene-C (core finish code AY).

Material	Color	Core Finish Codes
Kool Mµ®	Black	A7, A9
Kool Mµ® MAX	Black	A7, A9
Kool Mµ® H*f*	Black	A7, A9
XFlux®	Brown	A7, A9
High Flux	Khaki	A2, A9
Edge	Green	A2, A9
MPP	Gray	A2, A9

The finish is tested for voltage breakdown by inserting a core between two weighted wire mesh pads. Force is adjusted to produce a uniform pressure of 10 psi, simulating winding pressure. The test condition for each core in the random sample set, to guarantee minimum breakdown voltage in each production batch, is 60 Hz rms voltage at 1.25 the guaranteed limit. A2 and A7 samples (26.9 mm and larger) are tested to 2500 V min wire-to-wire. AY samples are tested to 750 V min wire-to-wire.

Higher minimum breakdown coatings can be applied upon request for cores larger than 4.65 mm.

Parylene coating (AY) minimizes the constriction of the inside diameter, although the surface texture is not as smooth as epoxy. All finished dimensions in this catalog are for epoxy coating (A2 or A7). For AY coating, the maximum OD and HT are reduced by 0.18 mm (0.007”), and the minimum ID is increased by 0.18 mm (0.007”).

The maximum steady-state operating temperature for epoxy coating is 200°C. The maximum steady-state operating temperature for parylene coating is 130°C, but it can be used as high as 200°C for short periods, such as during board soldering. High temperature operation of Magnetics powder cores does not affect magnetic properties.

Kool Mµ, Kool Mµ MAX, Kool Mµ H*f*, XFlux, High Flux, Edge and MPP materials can be operated continuously at 200°C with no aging or damage.

MPP Temperature Stabilization

Magnetics' core finish code is used to designate the stabilization, although the coating itself has no influence on the temperature stabilization performance of the core. A2, A7, AY and A9 are standard and W4 and M4 are controlled stabilization.

Inductance of standard MPP cores exhibits a small, positive temperature coefficient. This is due to the permeability vs. temperature characteristic of the magnetic alloy, and to the thermal expansion response of the distributed air gap formed by the insulating material surrounding metal powder grains.

The inductance of controlled stabilization MPP cores (codes W4 and M4) exhibits nearly flat temperature coefficient within defined temperature ranges. This is accomplished with adjustments in the alloy chemistry, unique to Magnetics.

There is no impact on any electrical or physical properties apart from the flattened inductance curve. W4 and M4 cores are higher in cost than standard stabilization cores.

The typical applications for stabilized cores are tuned filters, where very consistent inductance over temperature is required. The flat inductance performance of controlled stabilization cores is apparent only at low drive levels, less than 10 mT. Consequently, there is no performance benefit to using stabilized cores at higher drive levels, for example in power chokes.

Contact Magnetics for availability of sizes and permeabilities of W4 and M4 powder cores.

Part Number Suffix	Stabilization Type	Guaranteed Inductance Range	Stabilized Temperature Range
W4	Controlled	0.50% maximum	-55°C to +85°C
M4	Controlled	0.50% maximum	-65°C to +125°C

M4 cores meet the W4 limits and may be substituted in place of W4.
Stability limit example: When the 2mT, 10kHz inductance of a W4 stabilized core is measured at all temperature stops between -55°C and +85°C, the difference between the highest value and the lowest value cannot exceed 0.50% of the inductance at 25°C.

Inductor Core Selection Procedure

Only two parameters of the design application must be known to select a core for a current-limited inductor: inductance required with DC bias and the DC current. Use the following procedure to determine the core size and number of turns.

1. Compute the product of LI^2 where:
   L = inductance required with DC bias (mH)
   I = DC current (A)

2. Locate the LI^2 value on the Core Selector Chart (pgs. 26 - 32). Follow this coordinate to the intersection with the first core size that lies above the diagonal permeability line. This is the smallest core size that can be used.

3. The permeability line is sectioned into standard available core permeabilities. Selecting the core listed on the graph will tend to be the best tradeoff between A_L and DC bias.

4. Inductance, core size, and permeability are now known. Calculate the number of turns by using the following procedure:

   (a) The inductance factor (A_L in nH/T^2) for the core is obtained from the core data sheet. Determine the minimum A_L by using the worst case negative tolerance (generally -8%). With this information, calculate the number of turns needed to obtain the required inductance from:

   $$N = \sqrt{\frac{L\,10^3}{A_L}}$$

   Where L is required inductance (µH)

   (b) Calculate the bias in Oersteds from:

   $$H = \frac{4\pi NI}{l_e}$$

   (c) From the Permeability vs. DC Bias curves (pgs. 34 - 41), determine the rolloff percentage of initial permeability for the previously calculated bias level. Curve fit equations shown in the catalog can simplify this step. They are also available to use on Magnetics' website: http://www.mag-inc.com/design/design-tools/Curve-Fit-Equation-Tool

   (d) Multiply the required inductance by the percentage rolloff to find the inductance with bias current applied.

   (e) Increase the number of turns by dividing the initial number of turns (from step 4(a)) by the percentage rolloff. This will yield an inductance close to the required value after steps 4 (b), (c) and (d) are repeated.

   (f) Iterate steps 4 (b), (c) and (d) if needed to adjust turns up or down until the biased inductance is satisfactorily close to the target.

5. Choose a suitable wire size using the Wire Table (p. 28). Duty cycles below 100% allow smaller wire sizes and lower winding factors, but do not allow smaller core sizes.

6. Design Checks

   (a) **Winding Factor**. See p.19 for notes on checking the coil design.

   (b) **Copper Losses**. See p.19 for notes on calculating conductor resistance and losses.

   (c) **Core Losses**. See pgs. 20 - 24 for notes on calculating AC core losses. If AC losses result in too much heating or low efficiency, then the inductor may be loss-limited rather than current-limited. Design alternatives for this case include using a larger core or a lower permeability core to reduce the AC flux density; or using a lower loss material such as MPP or Kool Mµ MAX in place of Kool Mµ, or High Flux in place of XFLUX.

   (d) **Temperature Rise**. Dissipation of the heat generated by conductor and core losses is influenced by many factors. This means there is no simple way to predict temperature rise (△T) precisely. But the following equation is known to give a useful approximation for a component in still air. Surface areas for cores wound to 40% fill are given with the core data in this catalog.

$$\Delta T\,(^\circ C) = \left(\frac{\text{Total Losses (mW)}}{\text{Component Surface Area (cm}^2)}\right)^{0.833}$$

Core Selection Example

Determine core size and number of turns to meet the following requirement:

(a) Minimum inductance with DC bias of 0.6 mH (600 µH)
(b) DC current of 5.0 A

1. $LI^2 = (0.6)(5.0)^2 = 15.0$ mH·A^2

2. Using the Kool Mµ Toroids LI^2 chart found on p. 26, locate 15 mH·A^2 on the bottom axis. Following this coordinate vertically results in the selection of 0077083A7 (77083) as an appropriate core for the above requirements.

3. From the 0077083A7 core data p. 112, the inductance factor (A_L) of this core is 81 nH/T^2 ± 8%. The minimum A_L of this core is 74.5 nH/T^2.

4. From $L = A_L \cdot N^2$, 90 turns are needed to obtain 600 µH at no load. To calculate the number of turns required at full load, determine the DC bias level:

   $H = 4\pi\, N \cdot I / l_e$ where l_e is the path length in mm. The DC bias is 57.5 Oe, yielding 72% of initial permeability from the 60µ Kool Mµ DC bias curve on p. 34.The adjusted turns are 90/0.72 =125 Turns.

5. Re-calculate the DC bias level with 125 turns. The permeability versus DC bias curve shows 58% of initial permeability at 79.8 Oe.

6. Multiply the minimum A_L 74.5 nH/T^2 by 0.58 to yield effective A_L = 43.2 nH/T^2. The inductance of this core with 125 turns and with 79.8 Oe will be 675 µH minimum. The inductance requirement has been met.

7. The wire table indicates that 17 AWG is needed to carry 5.0 A with a current density of 500 A/cm^2. 125 turns of 17 AWG (wire area = 1.177 mm^2) equals a total wire area of 147.1 mm^2. The window area of a 0077083A7 is 427 mm^2. Calculating window fill, 147.1 mm^2/427 mm^2 corresponds to an approximate 35% winding factor. A 0077083A7 with 125 turns of 17 AWG is a manufacturable design.

$$H_{AC\,max} = 4\pi \frac{20}{63.5}\left(20 + \frac{2}{2}\right) = 83.1 \text{ Oe} \rightarrow B_{AC\,max} \cong .404$$

$$H_{AC\,min} = 4\pi \frac{20}{63.5}\left(20 - \frac{2}{2}\right) = 75.2 \text{ Oe} \rightarrow B_{AC\,min} \cong .377$$

Toroid Winding

Winding Factor

Winding factor, also called fill factor, is the ratio of total conductor cross section (usually copper cross section) to the area of the core window.

$$\text{Toroid winding factor} = \frac{N A_W}{W_A}$$

where: N = Number of turns
A_W = Area of wire
W_A = Window Area of the core $\frac{\pi}{4} \cdot ID^2$

Toroid Core Winding factors can vary from 20-60%, a typical value in many applications being 35-40%.

In practice, several approaches to toroid winding are used:

- Single layer: The number of turns is limited by the inside circumference of the core divided by the wire diameter. Advantages are lower winding capacitance, more repeatable parasitics, good cooling, and low cost. Disadvantages are reduced power handling and higher flux leakage.
- Low fill: For manufacturing ease and reduced capacitance, winding factor between single layer and 30% may be used.
- Full winding: Factors between 30% and 45% are normally a reasonable trade off between fully utilizing the space available for a given core size, while avoiding excessive manufacturing cost.
- High fill: Winding factors up to about 65% are achievable, but generally only with special expensive measures, such as completing each coil by hand after the residual hole becomes too small to fit the winding shuttle.

Estimating Wound Coil Dimensions

For each core size, wound coil dimensions are given for 40% winding factor, since this is a typical, practical value. Worst case package dimensions for coils wound completely full are also shown. These are max expected OD and max expected HT.

To estimate dimensions for other winding factors, use:

$$OD_{x\%} = \sqrt{\frac{X\%}{40\%}\left(OD^2_{40\%} - OD^2_{core}\right) + OD^2_{core}}$$

$$HT_{x\%} = ID_{core} + HT_{core} - \sqrt{\frac{100\% - X\%}{60\%}}\left(ID_{core} + HT_{core} - HT_{40\%}\right)$$

Where: X% is the new winding factor;
$OD_{40\%}$ and $HT_{40\%}$ are the coil dimensions shown on the core data page;
OD_{core} and HT_{core} are the maximum core dimensions after finish.

MLT and DCR

MLT (Mean Length of Turn) is given for a range of winding factors for each core size. To estimate DCR, first calculate the winding factor for the core, wire gauge, and number of turns selected. On the wire table look up resistance per unit of length for the gauge selected. On the data page for the core selected, consult the Winding Turn Length chart. Unless the winding factor is exactly one of the values listed, interpolate to find the MLT. Then,

$$DCR = (MLT)(N)\ (\Omega/\text{Length}).$$

For single layer winding, MLT is the 0% fill value on each core data page. Even easier, DCRs for single layer windings for a range of wire gauges are given in the winding tables on pgs. 137 - 141.

Wire Loss

DC copper loss is calculated directly as I^2R. Naturally, for aluminum conductors, a suitable wire table must be used. Also, the increase of wire resistance with temperature should be considered.

AC copper loss can be significant for large ripple and for high frequency. Unfortunately, calculation of AC copper loss is not a straight-forward matter. Estimates are typically used.

Powder Core Loss Calculation

Core loss is generated by the changing magnetic flux field within a material, since no magnetic materials exhibit perfectly efficient magnetic response. Core loss density (PL) is a function of half of the AC flux swing (½△B=B_{pk}) and frequency (*f*). It can be approximated from core loss charts or the curve fit loss equation:

$$PL = aB^{b}_{pk} f^{c}$$

where a, b, c are constants determined from curve fitting, and B_{pk} is defined as half of the AC flux swing:

$$B_{pk} = \frac{\triangle B}{2} = \frac{B_{AC\,max} - B_{AC\,min}}{2}$$

Units typically used are (mW/cm^3) for PL; Tesla (T) for B_{pk}; and (kHz) for *f*.
The task of core loss calculation is to determine B_{pk} from known design parameters. Once B_{pk} and *f* are known, PL is easily found from the catalog graph or equation.

Method 1 – Determine B_{pk} from DC Magnetization Curve. B_{pk}= f(H)

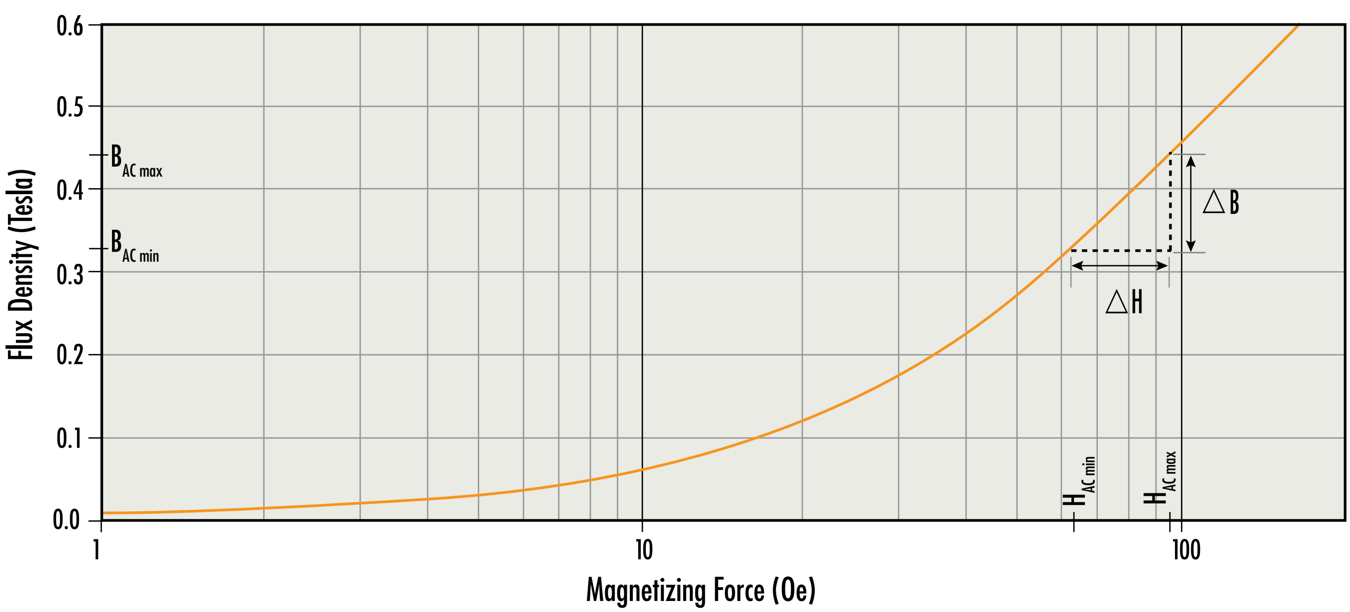
Flux density (B) is a non-linear function of magnetizing field (H), which in turn is a function of winding number of turns (N), current (I), and magnetic path length (l_e). The value of B_{pk} can typically be determined by first calculating *H* at each AC extreme:

$$H_{AC\,max} = 4\pi\left[\frac{N}{l_e}\left(I_{DC} + \frac{\Delta I}{2}\right)\right]$$

$$H_{AC\,min} = 4\pi\left[\frac{N}{l_e}\left(I_{DC} - \frac{\Delta I}{2}\right)\right]$$

Units: Oersted; Amp; mm
From $H_{AC\,max}$, $H_{AC\,min}$, and the BH curve or equation (pgs. 65 - 72) $B_{AC\,max}$, $B_{AC\,min}$ and therefore B_{pk} can be determined.

60μ Kool Mμ DC Magnetization Curve (Example 2)



Example 1 - AC current is 10% of DC current:

Approximate the core loss of an inductor with 20 turns wound on Kool Mμ p/n 77894 (p. 108) (60μ, l_e=63.5 mm, A_e=65.4 mm^2, A_L=75 nH/T^2). Inductor current is 20 Amps DC with ripple of 2 Amps peak-peak at 100kHz.

1.) Calculate *H* and determine *B* from BH curve (p. 65) or curve fit equation (p. 72):

$$H_{AC\,max} = 4\pi \frac{20}{63.5}\left(20 + \frac{2}{2}\right) = 83.1 \text{ Oe} \rightarrow B_{AC\,max} \cong .404 \qquad \rightarrow B_{pk} = \frac{\triangle B}{2} = \frac{0.404 - 0.377}{2} = 0.014$$

$$H_{AC\,min} = 4\pi \frac{20}{63.5}\left(20 - \frac{2}{2}\right) = 75.2 \text{ Oe} \rightarrow B_{AC\,min} \cong .377$$

2.) Determine core loss density from chart (p. 43) or calculate from loss equation (p. 64): $PL = (44.3)(0.014^{1.988})(100^{1.541}) \cong 11.0 \frac{mW}{cm^3}$

3.) Calculate core loss: $P_{fe} = (PL)(l_e)(A_e) \sim (11.0)(63.5)(65.4)\left(\frac{1\,cm^3}{1{,}000\,mm^3}\right) \cong 46mW$

Powder Core Loss Calculation

Example 2 - AC current is 40% of DC current:

Approximate the core loss for the same 20-turn inductor, with same inductor current of 20 Amps DC but ripple of 8 Amps peak-peak at 100kHz.

1.) Calculate *H* and determine *B* from BH curve fit equation:

$$H_{AC\,max} = 4\pi \frac{20}{63.5}\left(20 + \frac{8}{2}\right) = 95.0\,Oe \rightarrow B_{AC\,max} \cong 0.441$$

$$H_{AC\,min} = 4\pi \frac{20}{63.5}\left(20 - \frac{8}{2}\right) = 63.3\,Oe \rightarrow B_{AC\,min} \cong 0.331$$

$$\rightarrow B_{pk} = \frac{\triangle B}{2} = \frac{0.441 - 0.331}{2} = 0.055T$$

2.) Determine core loss density from chart or calculate from loss equation: $PL = (44.3)(0.055^{1.988})(100^{1.541}) \cong 168 \frac{mW}{cm^3}$

3.) Calculate core loss: $P_{fe} = (PL)(l_e)(A_e) = (168)(63.5)(65\,A)(0.001) \cong 698$

Note: Core losses result only from AC excitation. DC bias applied to any core does not cause any core losses, regardless of the magnitude of the bias.

Example 3 – pure AC, no DC:

Approximate the core loss for the same 20-turn inductor, now with 0 Amps DC and 8 Amps peak-peak at 100kHz.

1.) Calculate H and determine B from BH curve fit equation:

$$H_{AC\,max} = 4\pi \frac{20}{63.5}\left(+\frac{8}{2}\right) = 15.8\,Oe \rightarrow B_{AC\,max} \cong 0.092T$$

$$H_{AC\,min} = 4\pi \frac{20}{63.5}\left(-\frac{8}{2}\right) = -15.8\,Oe \rightarrow B_{AC\,min} \cong -0.092T$$

$$\rightarrow B_{pk} = \frac{\triangle B}{2} \sim 0.092T$$

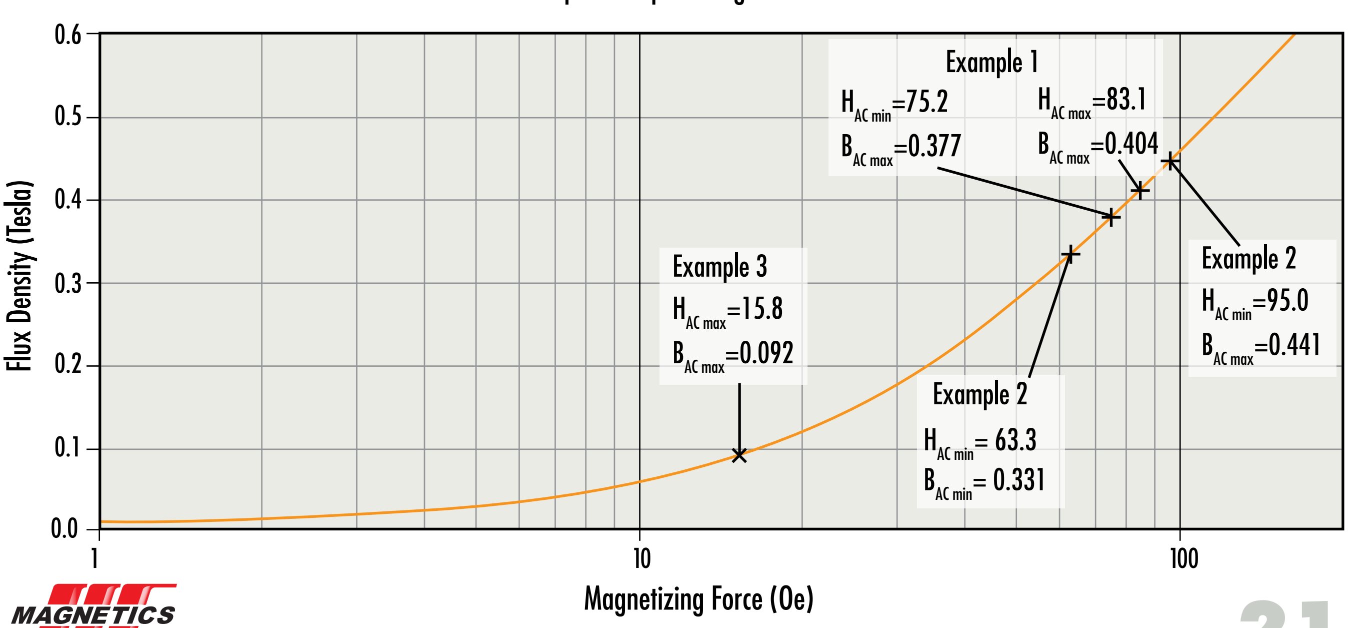
Note: Curve fit equations are not valid for negative values of B. Evaluate for the absolute value of B, then reverse the sign of the resulting H value.

2.) Determine core loss density from chart or calculate from loss equation.

$$PL = (44.3)(0.092^{1.988})(100^{1.541}) \cong 466 \frac{mW}{cm^3}$$

3.) Calculate core loss: $P_{fe} = (PL)(l_e)(A_e) = (466)(63.5)(65.4) \cong 1.94W$

Plotted below are the operating ranges for each of the three examples.
Note the significant influence of DC bias on core loss, comparing Example 3 with Example 2. Lower permeability results in less B_{pk}, even though the current ripple is the same. This effect can be achieved with DC bias, or by selecting a lower permeability material.



Powder Core Loss Calculation

Method 2 – For small $\triangle H$, approximate B_{pk} from effective perm with DC bias. $B_{pk} = f(\mu_e, \triangle H)$

The instantaneous slope of the BH curve is defined as the absolute permeability, which is the product of permeability of free space ($\mu_0 = 4\pi \times 10^{-7}$) and the material permeability (μ), which varies along the BH curve. For small AC, this slope can be modeled as a constant throughout AC excitation, with μ approximated as the effective perm at DC bias (μ_e):

$$\frac{dB}{dH} = \mu_0\mu_e \quad \rightarrow \frac{\triangle B}{\triangle H} = \mu_0\mu_e \quad \rightarrow \triangle B = \mu_0\mu_e \triangle H \qquad B_{pk} = \frac{\triangle B}{2} = (0.5)\,\mu_0\mu_e \triangle H$$

The effective perm with DC bias is shown in this catalog as % of initial perm, ($\%\mu_i$)(μ_i). This can be obtained from the DC bias curve or curve fit equation, (pgs. 34 - 41).

$$B_{pk} = (0.5)(\mu_0)(\%\mu_i)(\mu_i)\left(\frac{1000}{4\pi}\right)(\triangle H) \quad \text{where} \quad \triangle H = 4\pi\frac{N\triangle I}{l_e}$$

$\triangle H$ is multiplied by $\frac{1000}{4\pi}$ because H units here are Oersteds and B units are Tesla.

Reworking Example 1 (20 Amps DC, 2 Amps pk-pk)

$$H_{DC} = \left[4\pi\frac{20}{63.5}(20)\right] = 79.2 \text{ Oe} \quad \rightarrow \quad \text{from curve or curve fit equation, } \%\mu_i = 0.58$$

$$\mu_i = 60$$

$$\triangle H = 4\pi\frac{N\triangle I}{l_e} = 4\pi\frac{20\,(2)}{63.5} = 7.9 \text{ Oe}$$

$$B_{pk} = 0.5\,(4\pi \times 10^{-7})(0.58)(60)\left(\frac{1000}{4\pi}\right)(7.9) \cong 0.014\text{T} \quad \text{(this compares to 0.014T using Method 1)}$$

Reworking Example 2 (20 Amps DC, 8 Amps pk-pk)

From example 1,

$$H_{DC} = 79.2\text{ Oe}\,;\ \%\mu_i = 0.58;\ \mu_i = 60$$

$$\triangle H = 4\pi\frac{N\triangle I}{l_e} = 4\pi\frac{20\,(8)}{63.5} = 31.7\text{ Oe}$$

$$B_{pk} = 0.5\,(4\pi \times 10^{-7})(0.58)(60)\left(\frac{1000}{4\pi}\right)(31.7) = 0.055\text{T} \quad \text{(this compares to 0.055T using Method 1)}$$

Reworking Example 3 (0 Amps DC, 8 Amps pk-pk)

From example 2,

$$\triangle H = 31.7\text{ Oe}$$

$$H_{DC} = 0 \quad \%\mu_i = 1.0$$

$$B_{pk} = 0.5\,(4\pi \times 10^{-7})(1)(60)\left(\frac{1000}{4\pi}\right)(31.7) = 0.095\text{T} \quad \text{(this compares to 0.092T using Method 1)}$$

Powder Core Loss Calculation

Method 3 – For small $\triangle H$, determine B_{pk} from biased inductance. $B_{pk}=f(L,I)$

B can be rewritten in terms of inductance by considering Faraday's equation and its effect on inductor current:

$$V_L = NA\frac{dB}{dt} = L\frac{dI}{dt} \rightarrow dB = \frac{L}{NA}dI$$

L varies non-linearly with I. For small AC, L can be assumed constant throughout AC excitation and is approximated by the biased inductance (L_{DC}).

$$\triangle B = \frac{L_{DC}\triangle I}{NA} \rightarrow B_{pk} = \frac{L_{DC}\triangle I}{2NA_e}$$

Another way of looking at this is by rewriting the relationship between B and L as:

$$\rightarrow \frac{dB}{dH} = \frac{L}{NA}\frac{dI}{dH}$$

Substituting (dH/dI) with (N/l_e) and A with A_e:

$$\rightarrow \frac{dB}{dH} = \frac{L\,l_e}{N^2A_e}$$

L varies non-linearly with H. For small AC, the slope of the BH curve is assumed constant throughout AC excitation, and L is approximated by the biased inductance (L_{DC}).

$$\frac{\triangle B}{\triangle H} = \frac{L_{DC}l_e}{N^2A_e} \rightarrow \triangle B = \frac{L_{DC}\,l_e}{N^2A_e}\triangle H = \frac{L_{DC}\triangle I}{NA_e} \rightarrow \triangle B_{pk} = \frac{L_{DC}\triangle I}{2NA_e}$$

Powder Core Loss Calculation

Reworking Example 1:

$$L_{nl}\,(\text{no load}) = (A_L)(N^2) = (75\,nH/T^2)(20^2) = 30\mu H$$

$$L_{DC}\,(20A) = (\%\mu_i)(L_{nl}) = (0.58)(30) = 17.4\mu H$$

$$\rightarrow B_{pk} = \frac{(17.4)(10^{-6})(2)}{2(20)(65.4)(10^{-6})} = 0.013T \quad \text{(this compares to 0.014T per Method 1; 0.014T per Method 2).}$$

Reworking Example 2:

$$\text{From example 1, } L_{DC} = 17.4\mu H$$

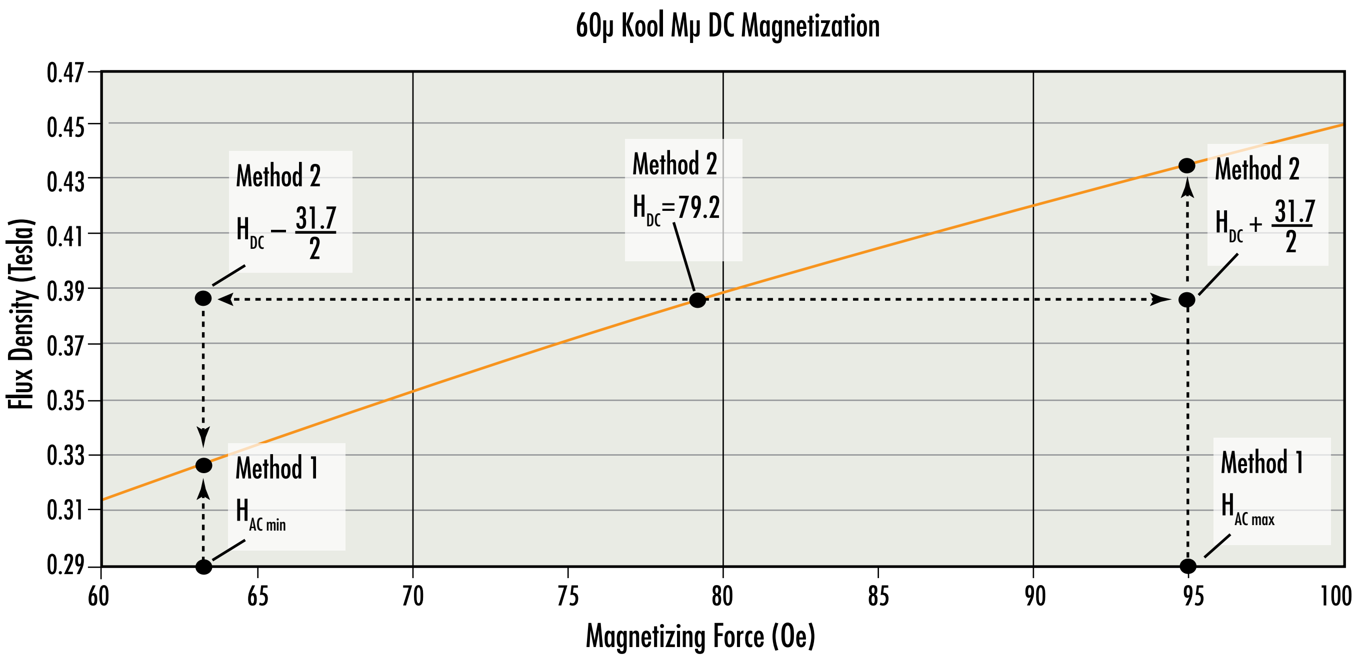
$$\rightarrow B_{pk} = \frac{(17.4)(10^{-6})(8)}{2(20)(65.4)(10^{-6})} = 0.053T \quad \text{(this compares to 0.055T per Method 1; 0.055T per Method 2).}$$

Reworking Example 3:

$$L_{DC} = L_{nl} = 30\mu H$$

$$\rightarrow B_{pk} = \frac{(30)(10^{-6})(8)}{2(20)(65.4)(10^{-6})} = 0.092T \quad \text{(this compares to 0.092T per Method 1; 0.095T per Method 2).}$$

After B_{pk} is found using Method 1, Method 2, or Method 3, then it is simple to use to use the core loss curve or curve fit equation to find the core loss density (PL) for the known drive frequency. The plot below illustrates the difference between Method 1 and Method 2



Core Selector Charts

The core selector charts are a quick guide to finding the optimum permeability and smallest core size for DC bias applications.

These charts are based on a permeability reduction (and therefore inductance) of not more than 50% with DC bias; typical winding factors of 40% for toroids, 60% for E cores and U cores, and 75% for EQ cores (helical coil assumed); and an AC current that is small relative to the DC current. These charts are based on the nominal core inductance and a current density 400-1000 A/cm^2:

Kool Mµ	400 A/cm^2
Kool Mµ MAX	600 A/cm^2
Kool Mµ H*f*	400 A/cm^2
XFLUX	600 A/cm^2
High Flux	600 A/cm^2
Edge	400 A/cm^2
MPP	400 A/cm^2
Kool Mµ E Cores	400 A/cm^2
XFLUX E Cores	600 A/cm^2
Kool Mµ U Cores	400 A/cm^2
Kool Mu EQ Cores	1000 A/cm^2
XFLUX EQ Cores	1000 A/cm^2
High Flux EQ Cores	1000 A/cm^2

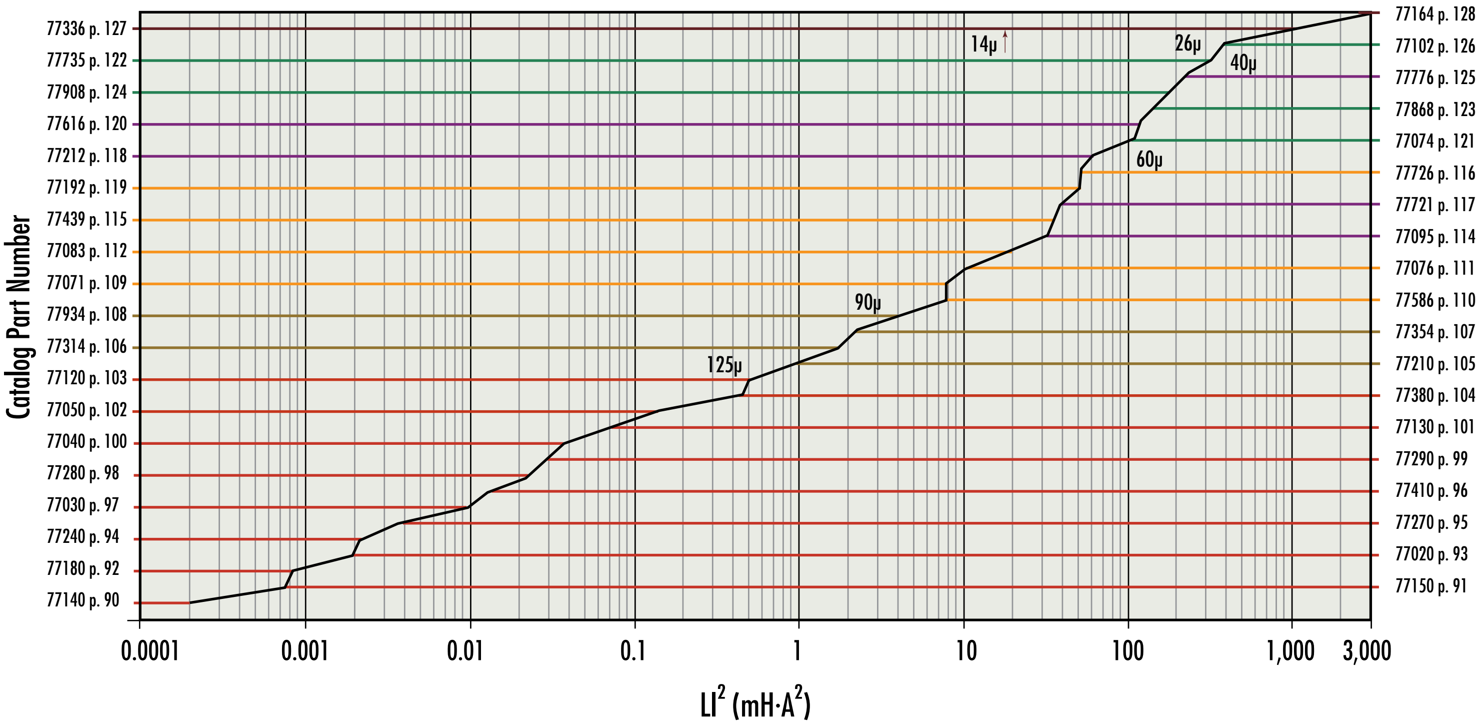
If a core is being selected for use with a large AC current relative to any DC current, such as a flyback inductor or buck/boost inductor, frequently a larger core will be needed to limit the core losses due to AC flux. In other words, the design becomes loss-limited rather than bias-limited.

For additional power handling capability, stacking of cores will yield a proportional increase in power handling. For example, double stacking of the 55908 core will result in doubled power handling capability to about 400 mH·A^2.

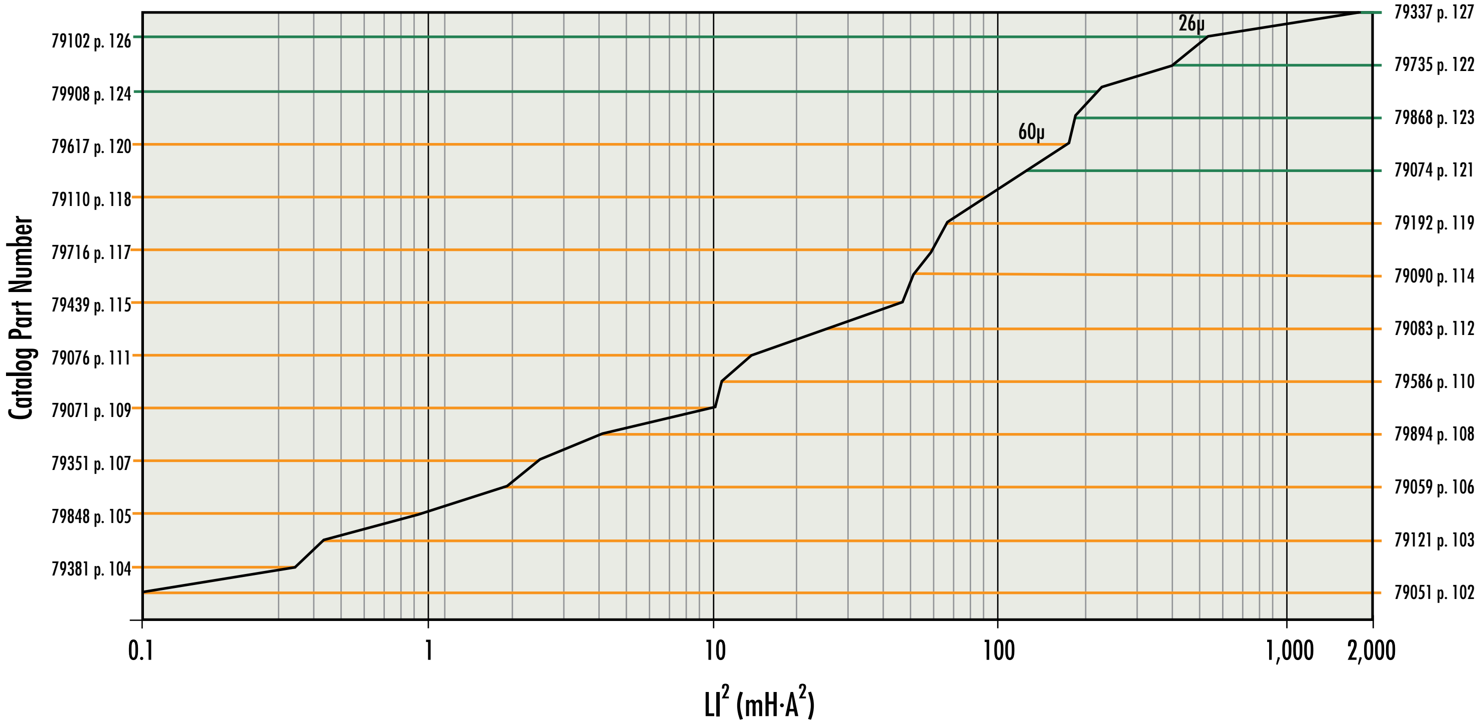
Cores with increased heights are easily ordered. Contact Magnetics for more information.

Core Selector Charts

Kool Mµ® Toroids

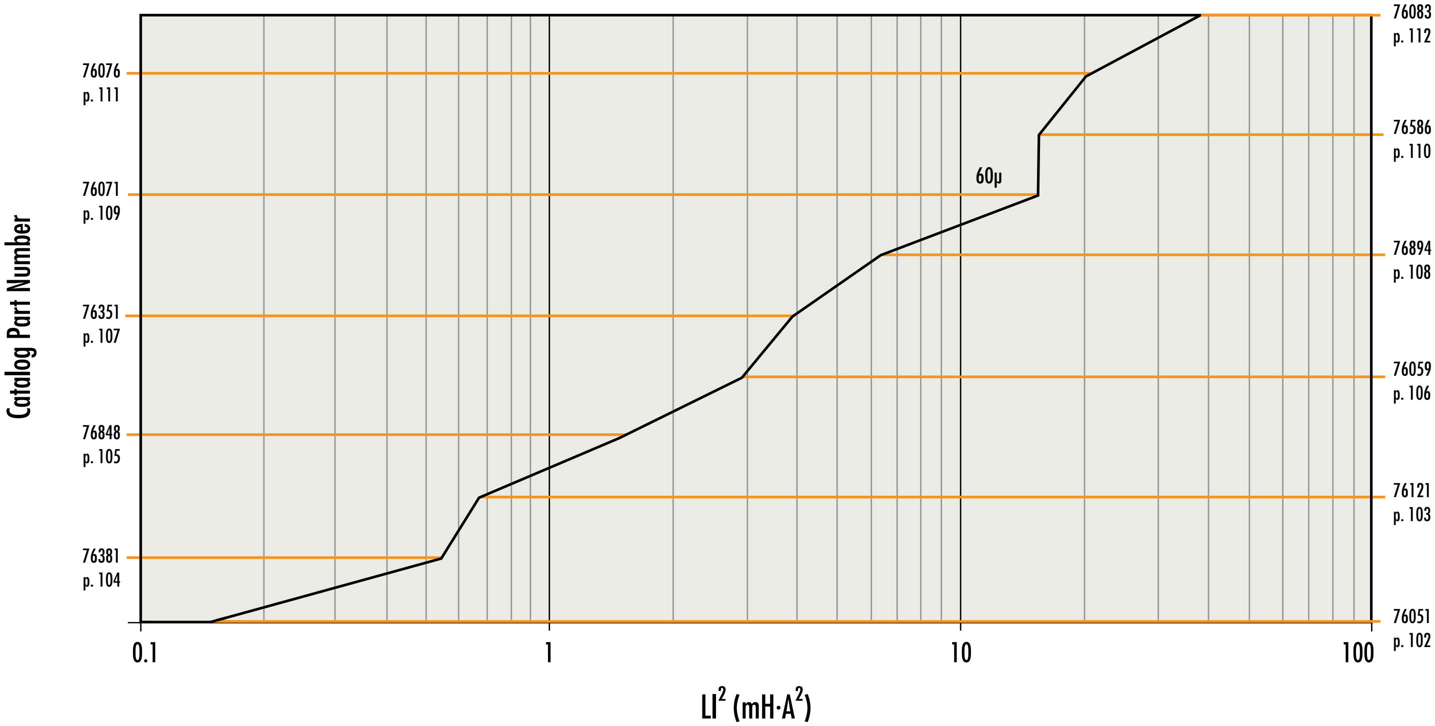


Kool Mµ® MAX Toroids

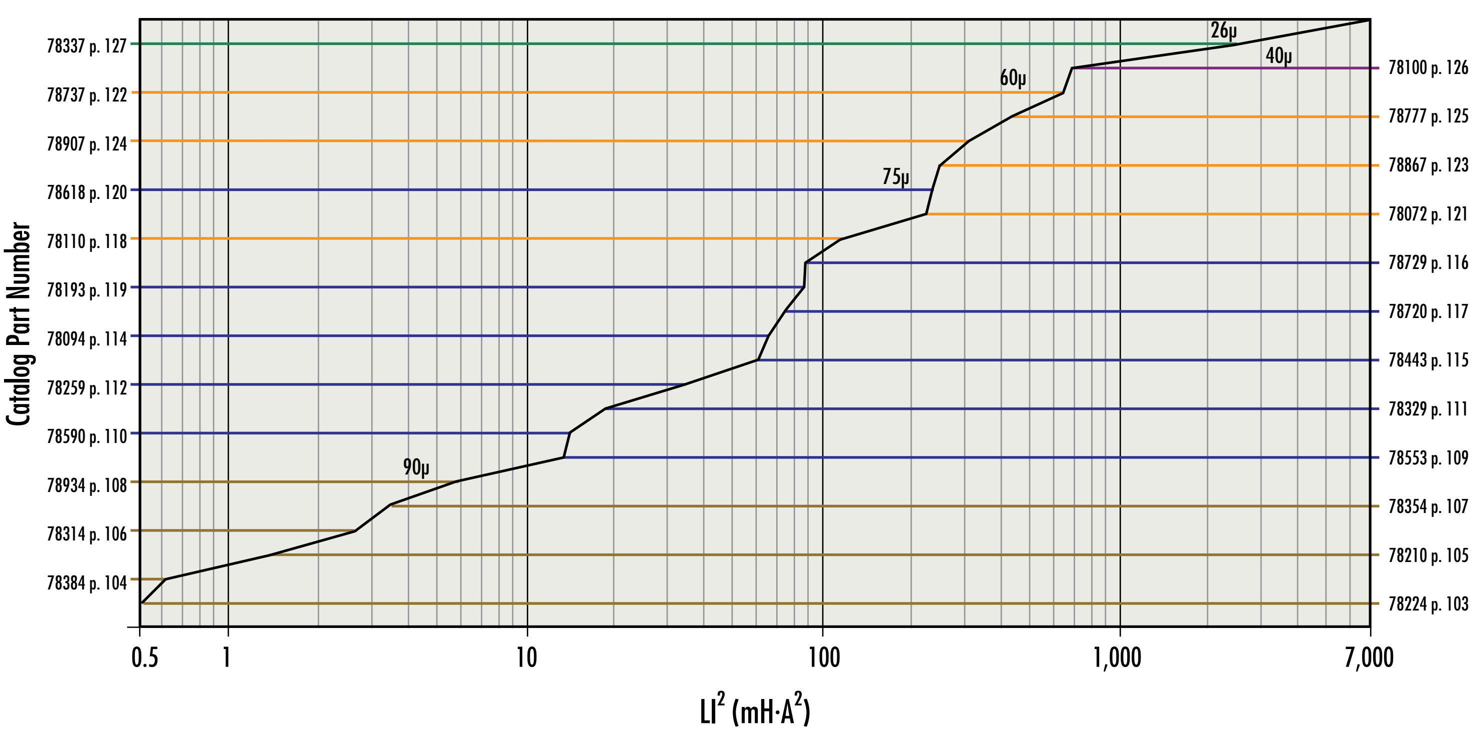


Core Selector Charts

Kool Mµ® Hƒ Toroids

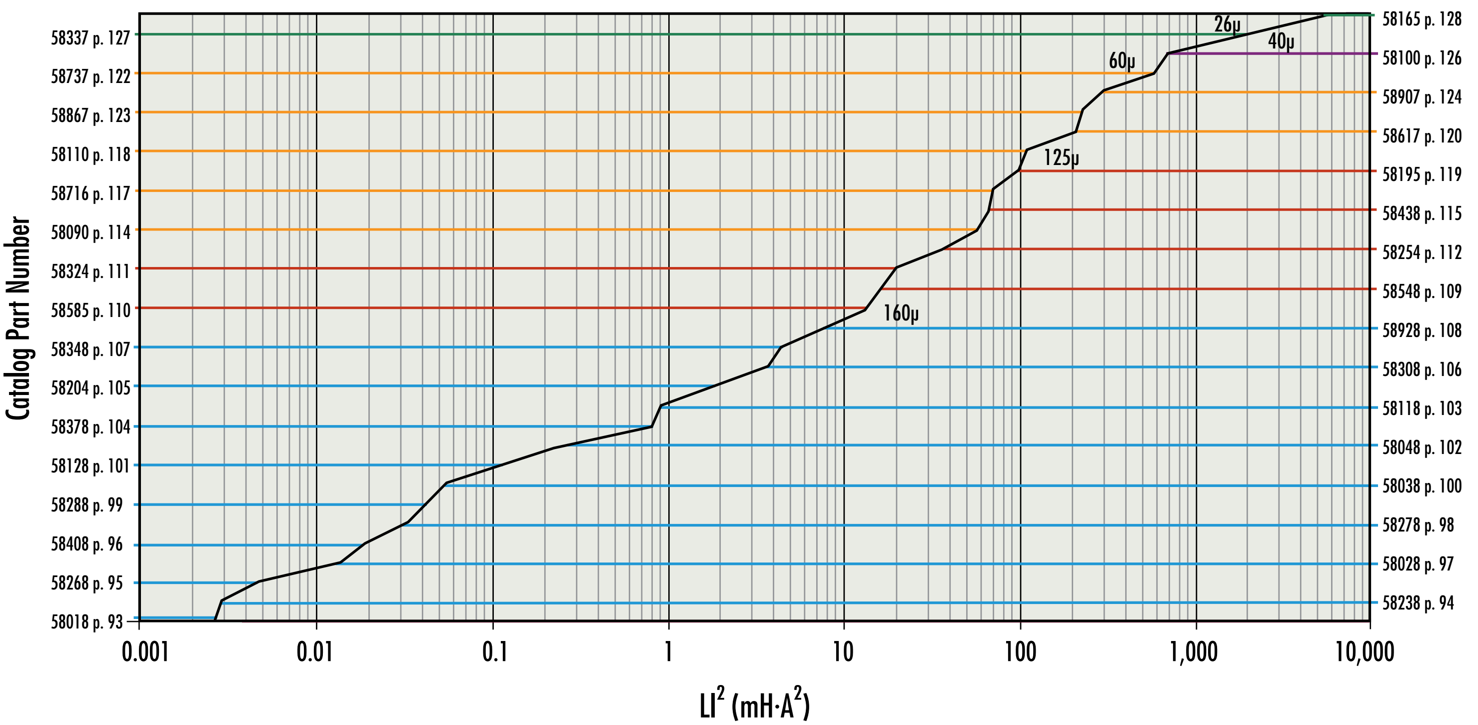


XFlux® Toroids

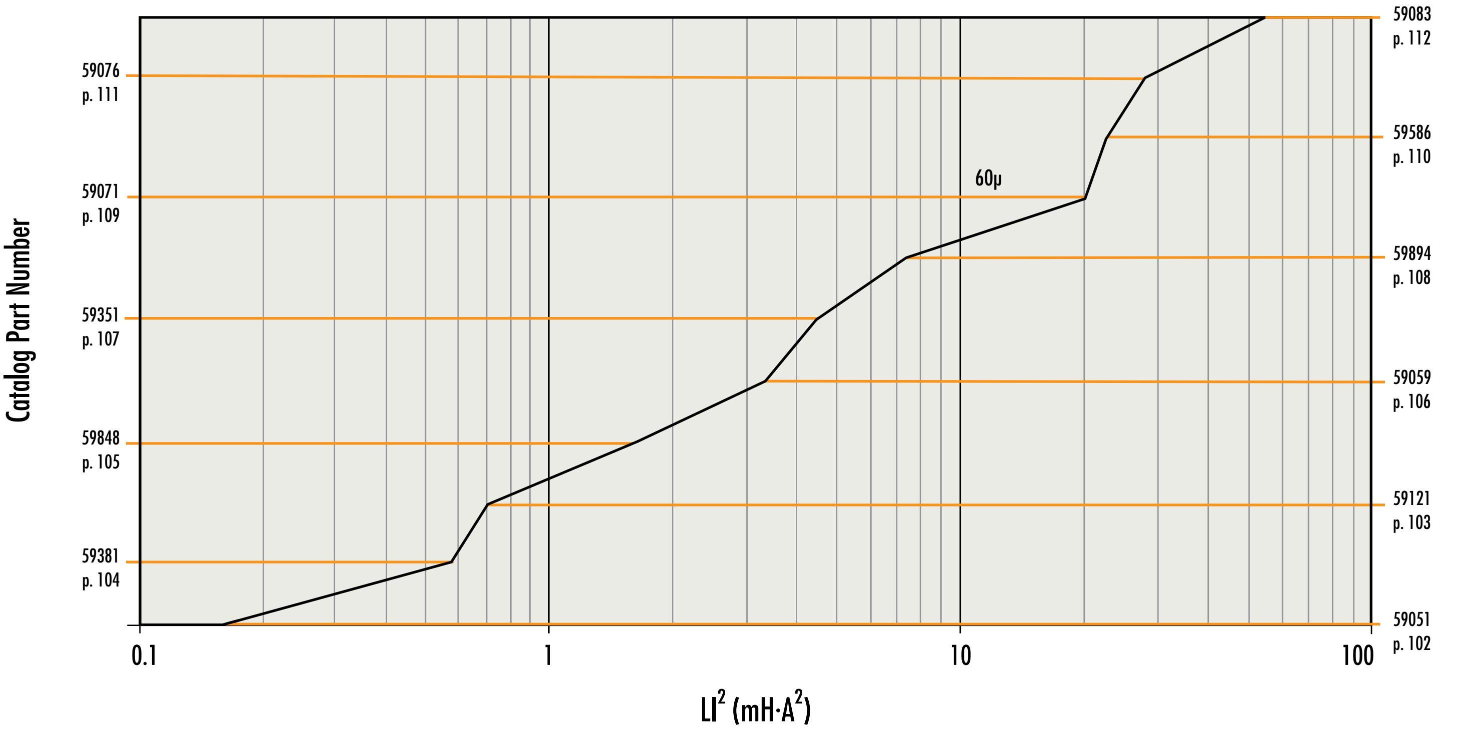


Core Selector Charts

High Flux Toroids

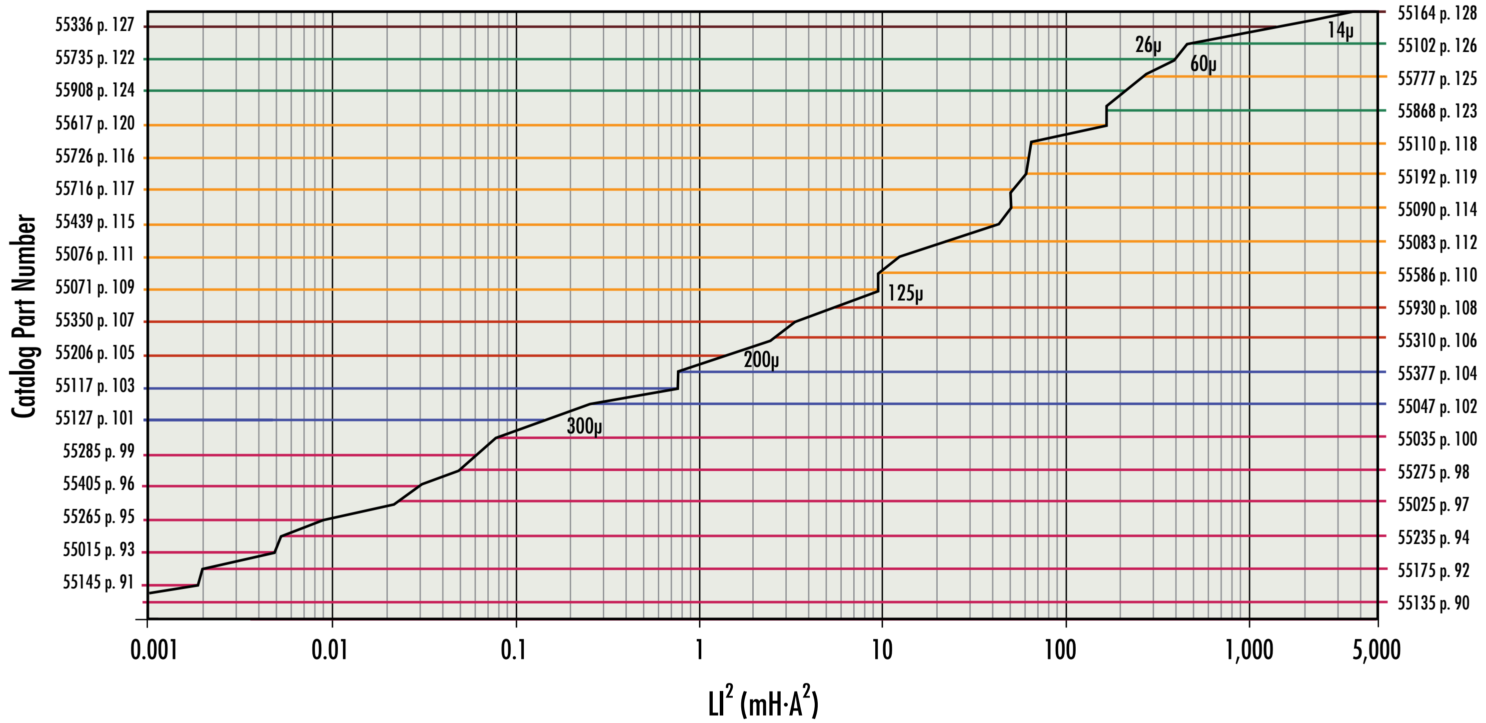


Edge™ Toroids

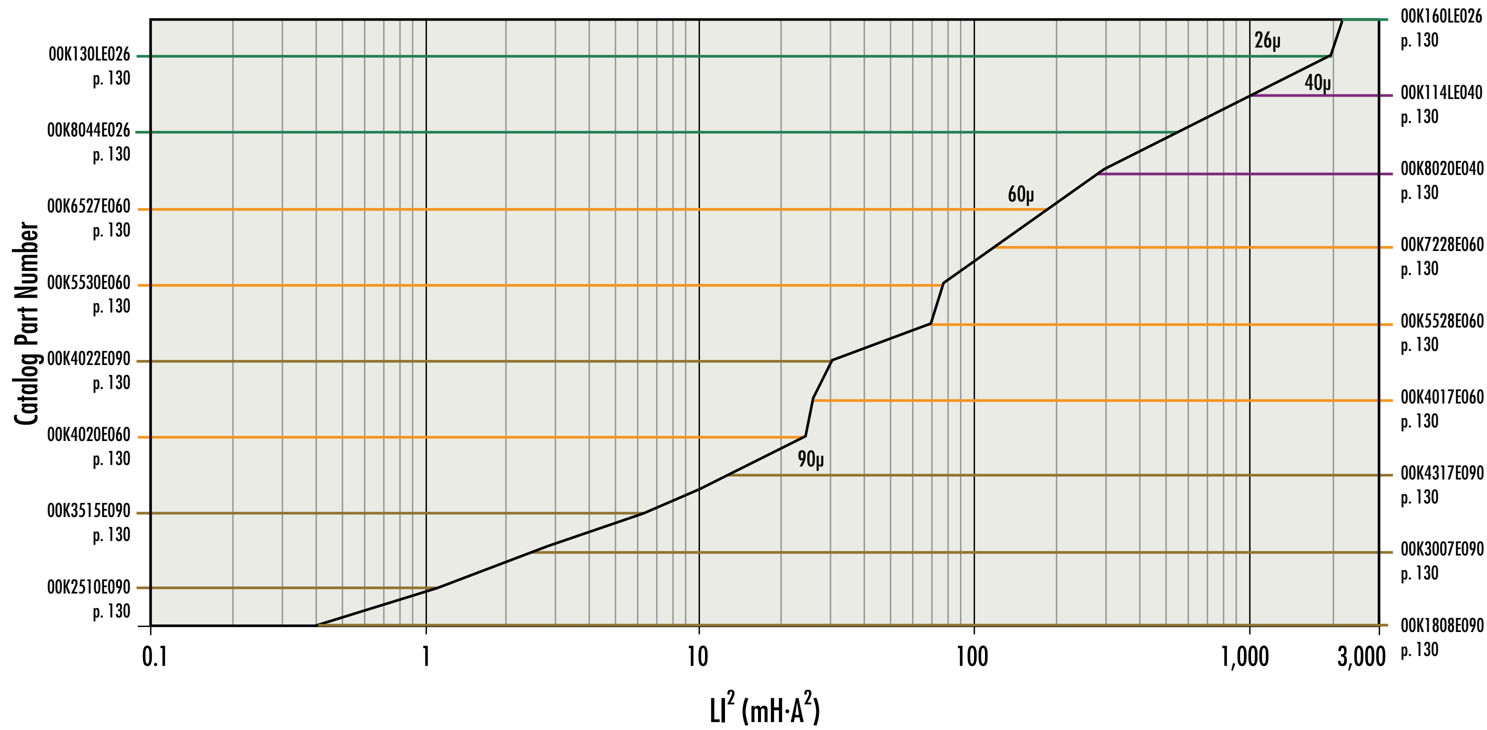


Core Selector Charts

MPP Toroids

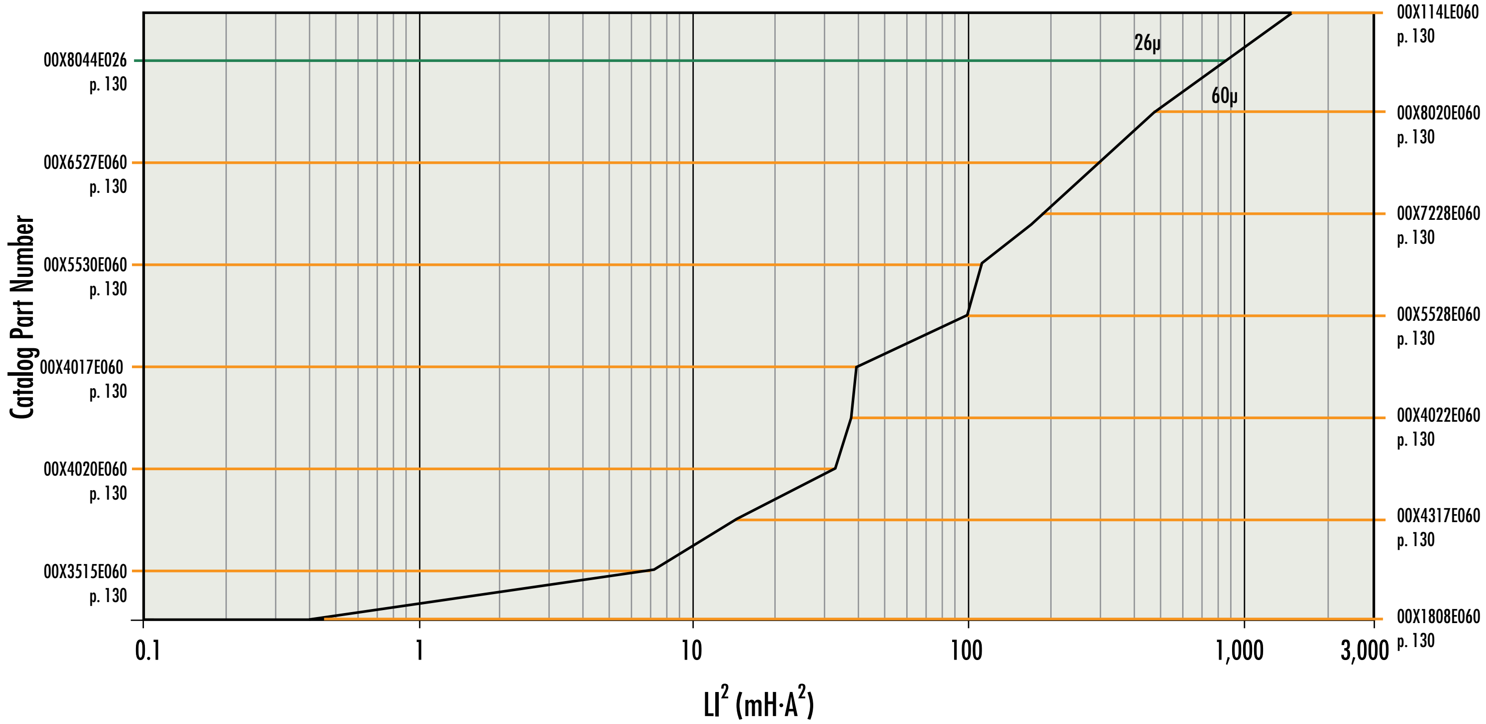


Kool Mµ® E Cores

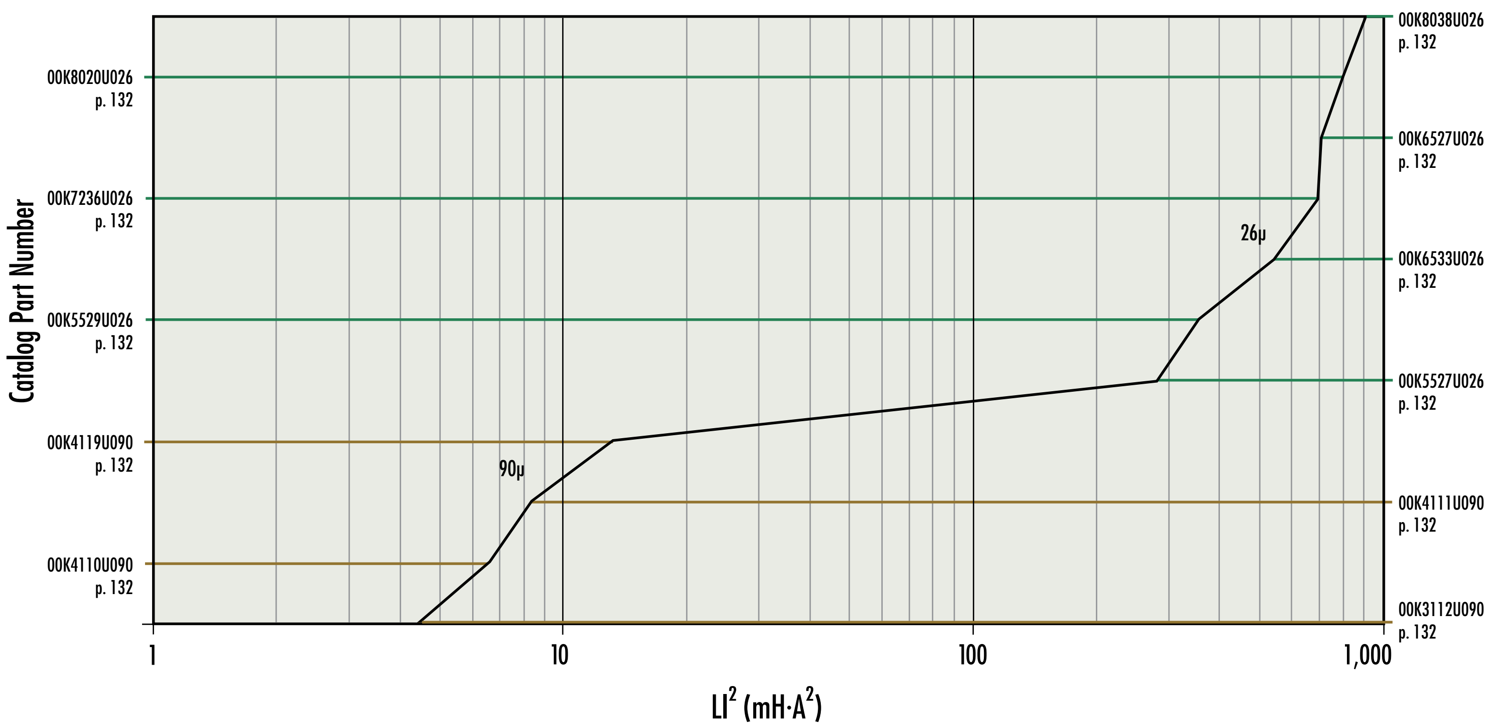


Core Selector Charts

XFLUX® E Cores

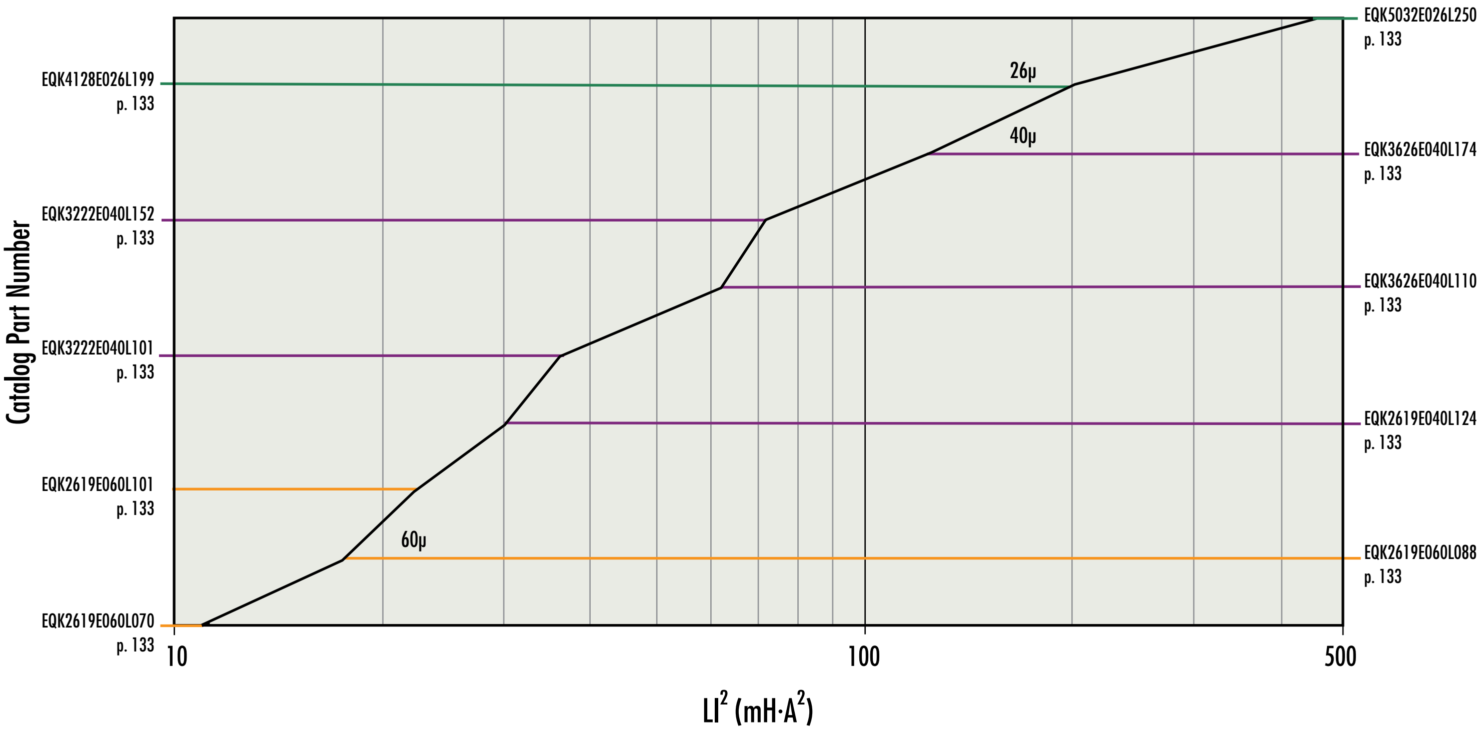


Kool Mμ® U Cores

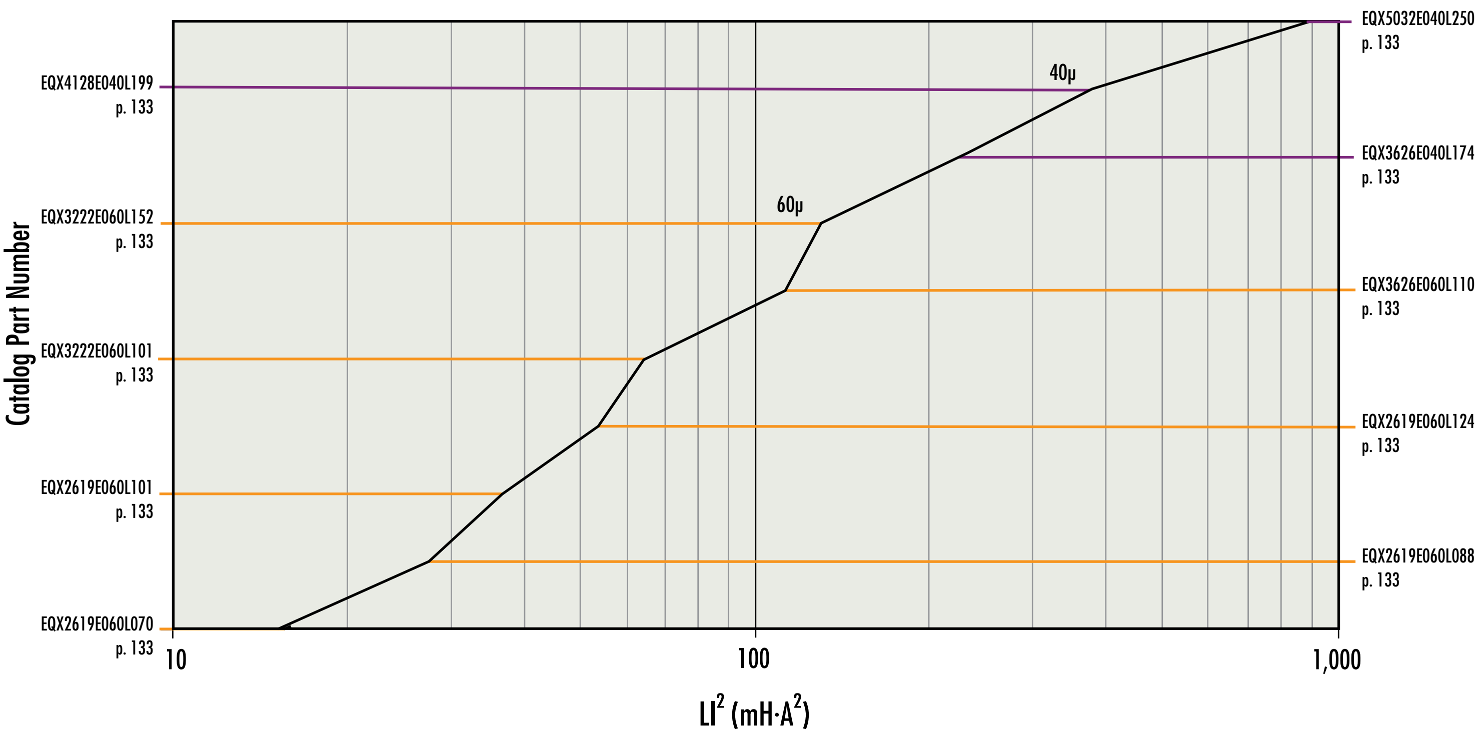


Core Selector Charts

Kool Mμ® EQ Cores

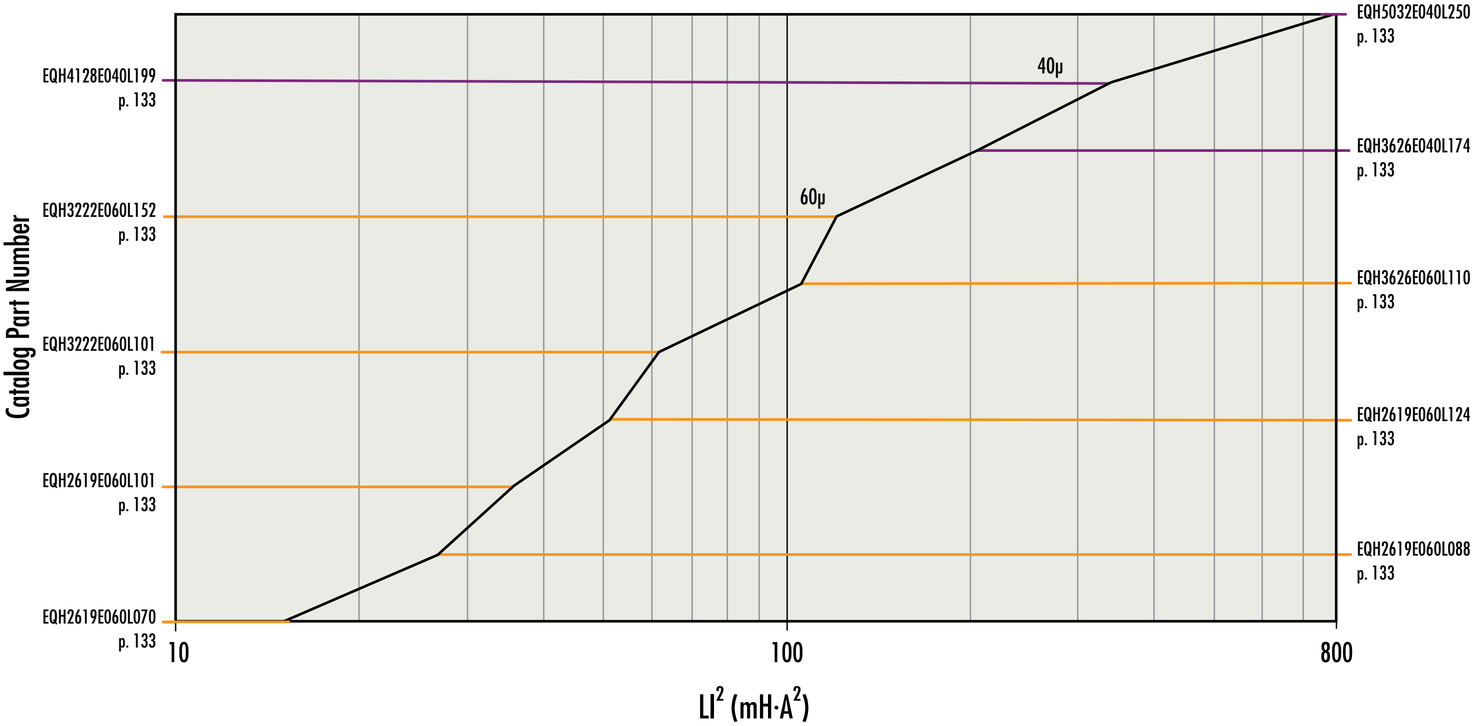


XFLUX® EQ Cores



Core Selector Charts

High Flux EQ Cores

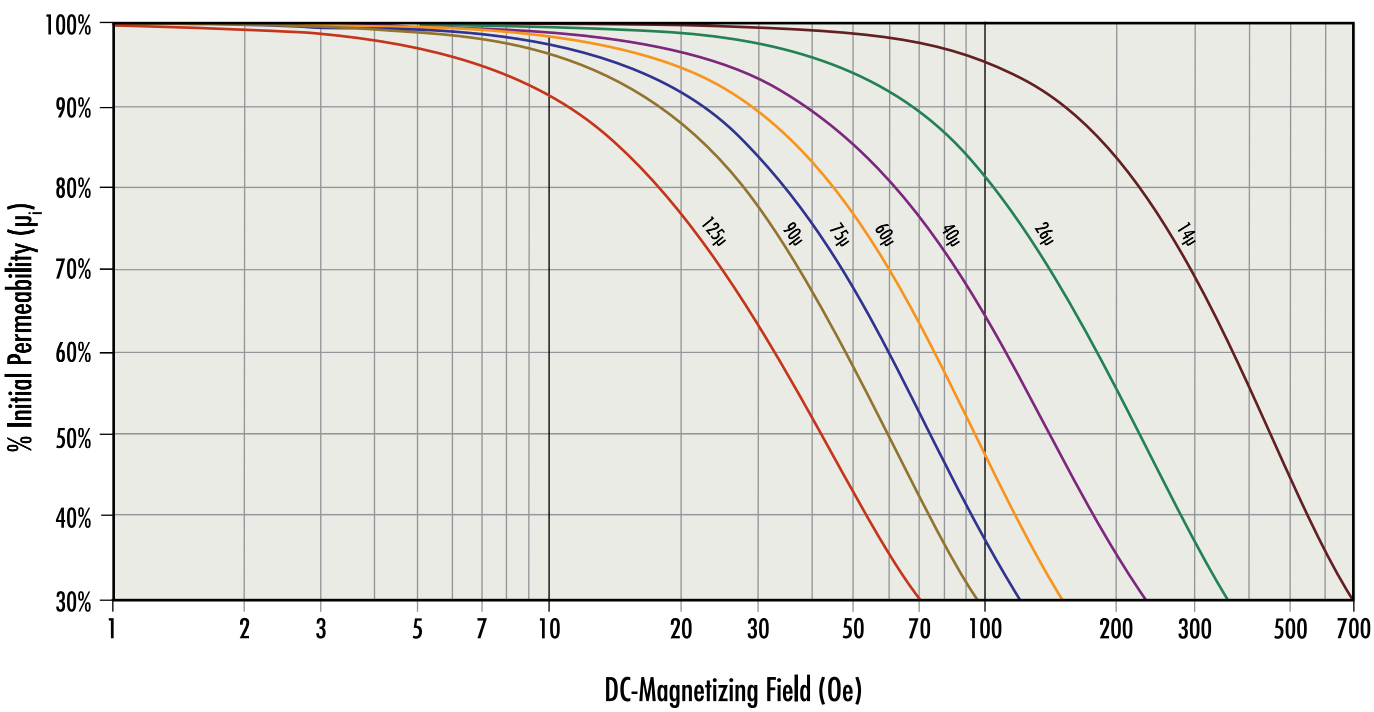


Wire Table

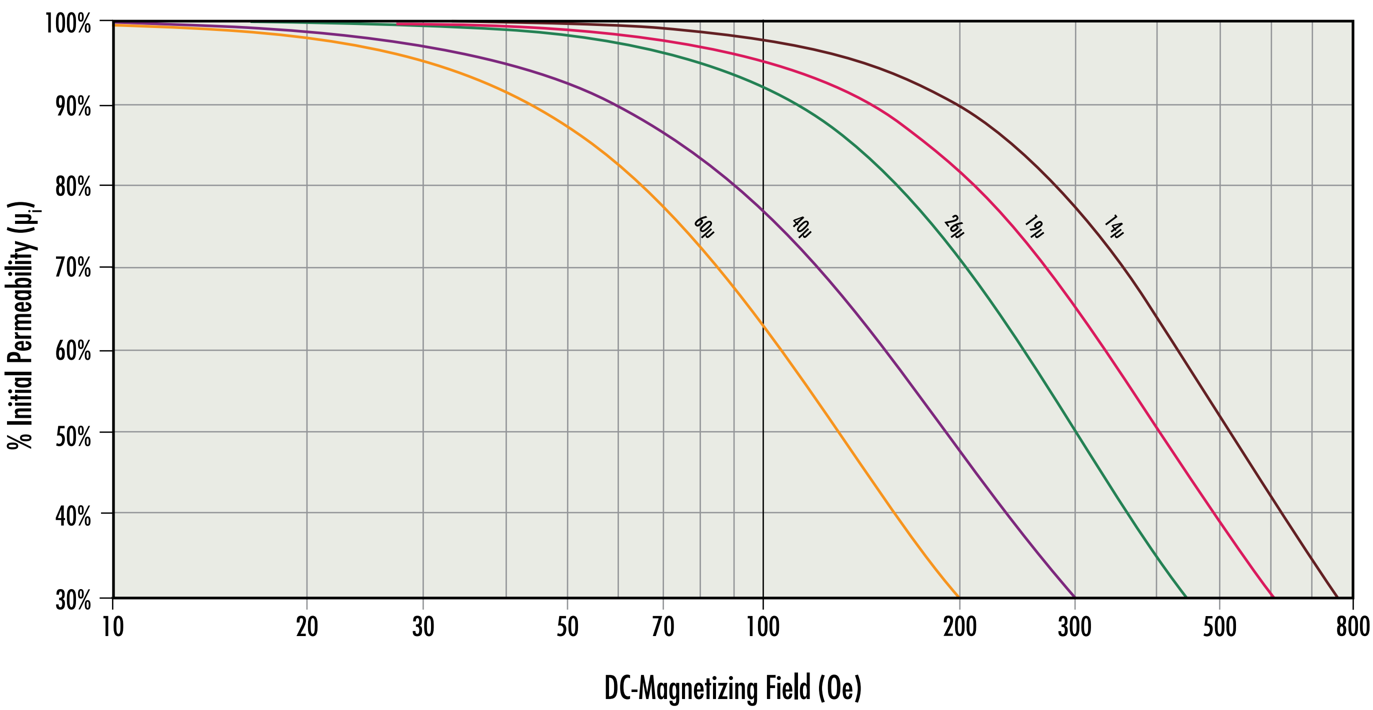
AWG Wire Size	Resistance Ω/meter	Wire O.D. (cm) Heavy Build	Wire Area cm^2	Current Capacity, Amps (listed by columns of Amps/cm^2)				
				200	400	500	600	800
6	.00130	.421	0.1392	26.6	53.2	66.5	79.8	106
7	.00163	.376	0.1110	21.1	42.2	52.8	63.3	84.4
8	.00206	.336	0.0887	16.7	33.5	41.8	50.2	66.9
9	.00260	.299	0.0702	13.3	26.5	33.2	39.8	53.1
10	.00328	.267	0.0560	10.5	21.0	26.3	31.6	42.1
11	.00414	.238	0.0445	8.34	16.7	20.8	25.0	33.3
12	.00521	.213	0.0356	6.62	13.2	16.5	19.8	26.5
13	.00656	.1902	0.0284	5.25	10.5	13.1	15.8	21.0
14	.00828	.1715	0.0231	4.16	8.33	10.4	12.5	16.7
15	.01044	.1529	0.01840	3.30	6.61	8.26	9.91	13.2
16	.01319	.1369	0.01472	2.62	5.23	6.54	7.85	10.5
17	.01658	.1224	0.01177	2.08	4.16	5.20	6.24	8.32
18	.02095	.1095	0.00942	1.65	3.29	4.11	4.94	6.58
19	.02640	.0980	0.00754	1.31	2.61	3.27	3.92	5.22
20	.03323	.0879	0.00607	1.04	2.08	2.59	3.11	4.15
21	.04190	.0785	0.00484	0.823	1.65	2.06	2.47	3.29
22	.05315	.0701	0.00386	0.649	1.30	1.62	1.95	2.59
23	.06663	.0632	0.00314	0.518	1.04	1.29	1.55	2.07
24	.08422	.0566	0.00252	0.409	0.819	1.0236	1.23	1.64
25	.10620	.0505	0.00200	0.325	0.649	0.812	0.974	1.30
26	.13458	.0452	0.00160	0.256	0.512	0.641	0.769	1.02
27	.16873	.0409	0.00131	0.204	0.409	0.511	0.613	0.817
28	0.214	.0366	0.00105	0.161	0.322	0.402	0.483	0.644
29	0.266	.0330	0.000855	0.129	0.259	0.324	0.388	0.518
30	0.340	.0295	0.000683	0.101	0.203	0.253	0.304	0.405
31	0.429	.0267	0.000560	0.0803	0.161	0.201	0.241	0.321
32	0.532	.0241	0.000456	0.0649	0.130	0.162	0.195	0.259
33	0.675	.0216	0.000366	0.0511	0.102	0.128	0.153	0.204
34	0.857	.01905	0.000285	0.0402	0.0804	0.101	0.121	0.161
35	1.085	.01702	0.000228	0.0318	0.0636	0.0795	0.0953	0.127
36	1.361	.01524	0.000182	0.0253	0.0507	0.0633	0.0760	0.101
37	1.680	.01397	0.000153	0.0205	0.0410	0.0513	0.0616	0.0821
38	2.13	.01245	0.000122	0.0162	0.0324	0.0405	0.0486	0.0649
39	2.78	.01092	0.000094	0.0124	0.0248	0.0310	0.0372	0.0497
40	3.54	.00965	0.000073	0.00974	0.0195	0.0243	0.0292	0.0390
41	4.34	.00864	0.000059	0.00795	0.0159	0.0199	0.0238	0.0318
42	5.44	.00762	0.000046	0.00633	0.0127	0.0158	0.0190	0.0253
43	7.03	.00686	0.000037	0.00490	0.00981	0.0123	0.0147	0.0196
44	8.51	.00635	0.000032	0.00405	0.00811	0.0101	0.0122	0.0162
45	10.98	.00546	0.000023	0.00314	0.00628	0.00785	0.00942	0.0126
46	13.80	.00498	0.000019	0.00250	0.00500	0.00624	0.00749	0.00999
47	17.36	.00452	0.000016	0.00199	0.00397	0.00497	0.00596	0.00795
48	22.10	.00394	0.000012	0.00156	0.00312	0.00390	0.00467	0.00623
49	27.60	.00353	0.000010	0.00125	0.00250	0.00312	0.00375	0.00499

Permeability versus DC Bias Curves

Kool Mμ® Toroids

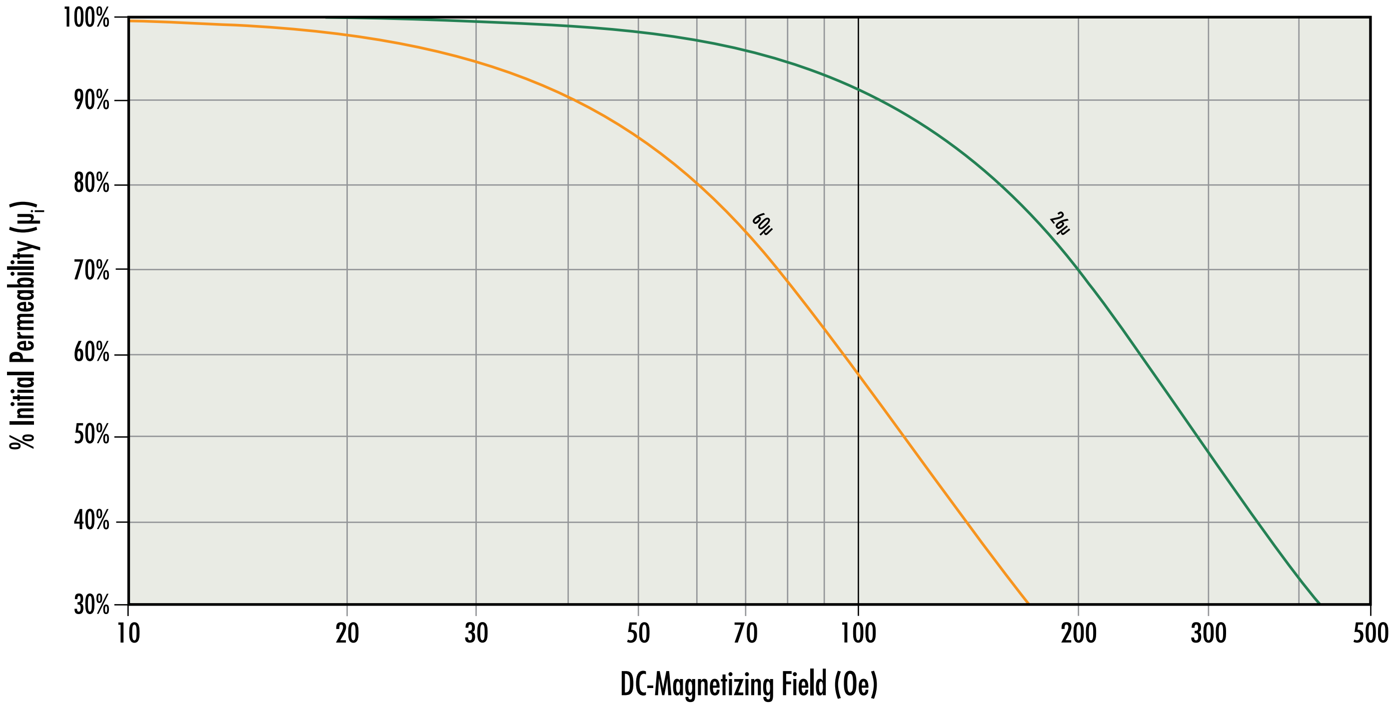


Kool Mμ® MAX Toroids

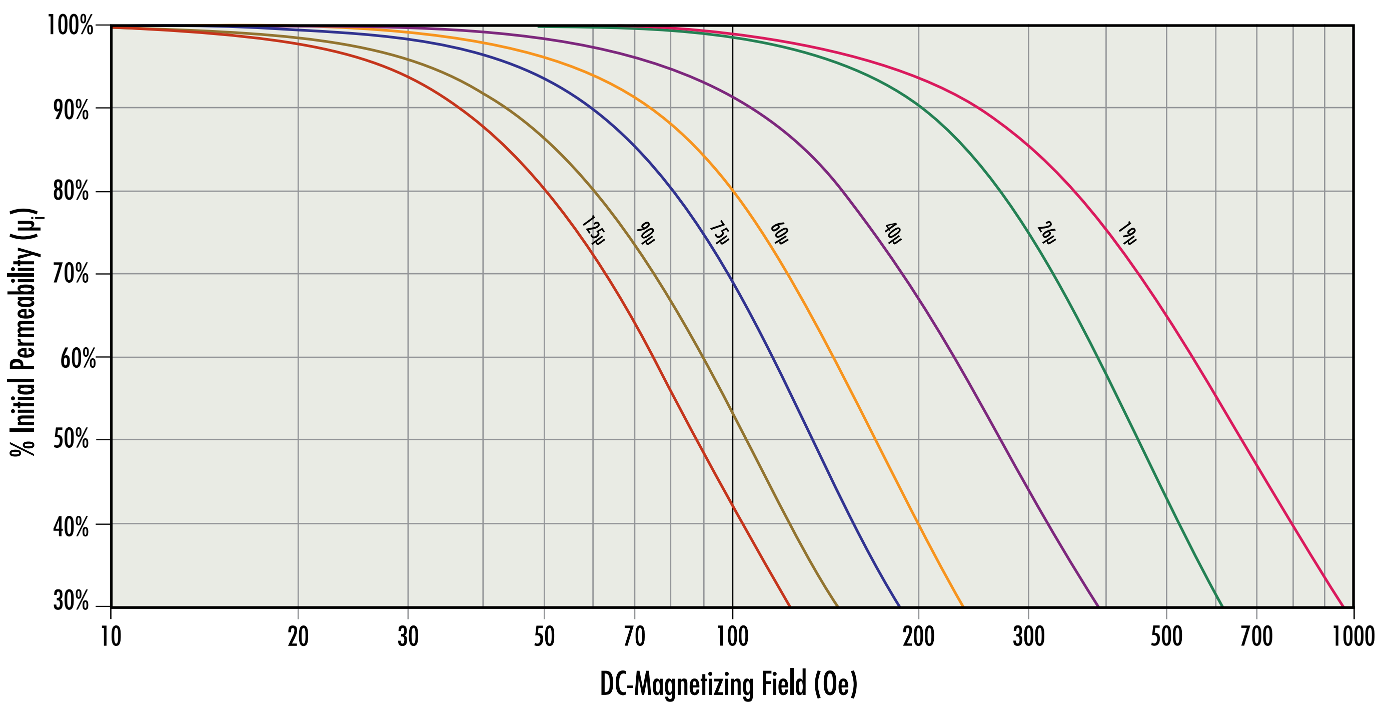


Permeability versus DC Bias Curves

Kool Mμ® H*f* Toroids

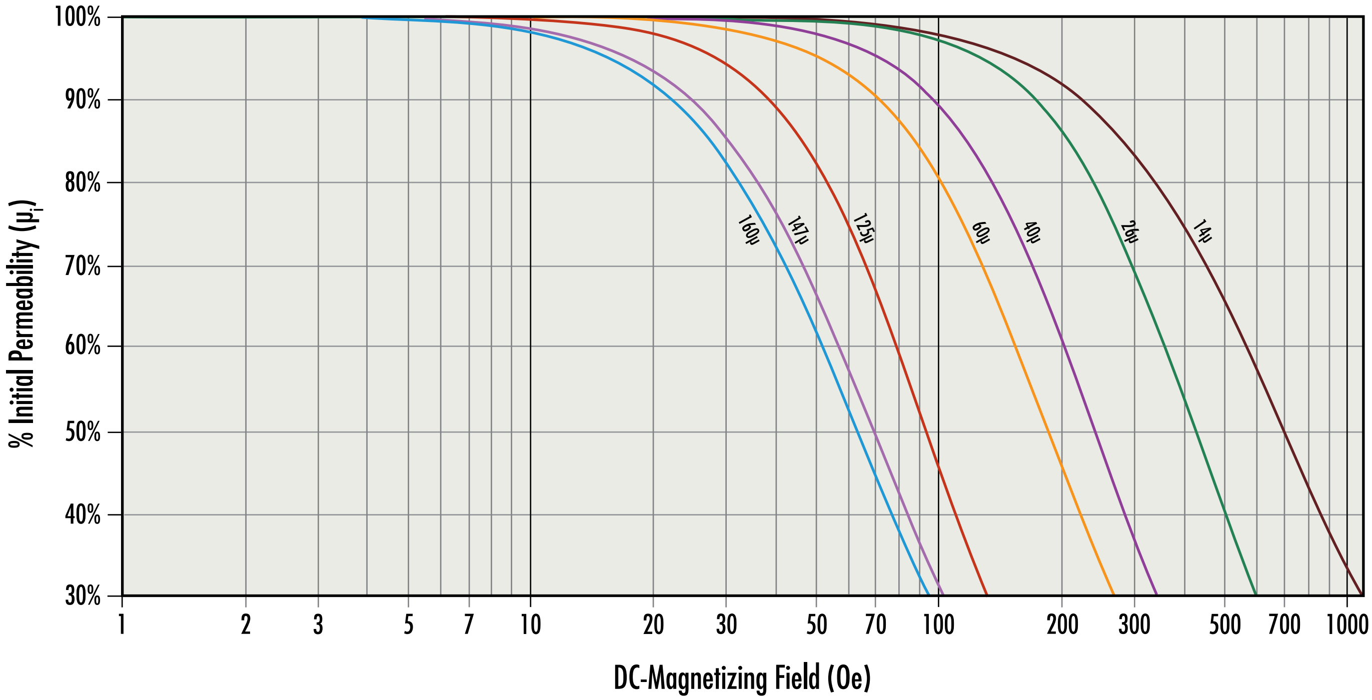


XFlux® Toroids

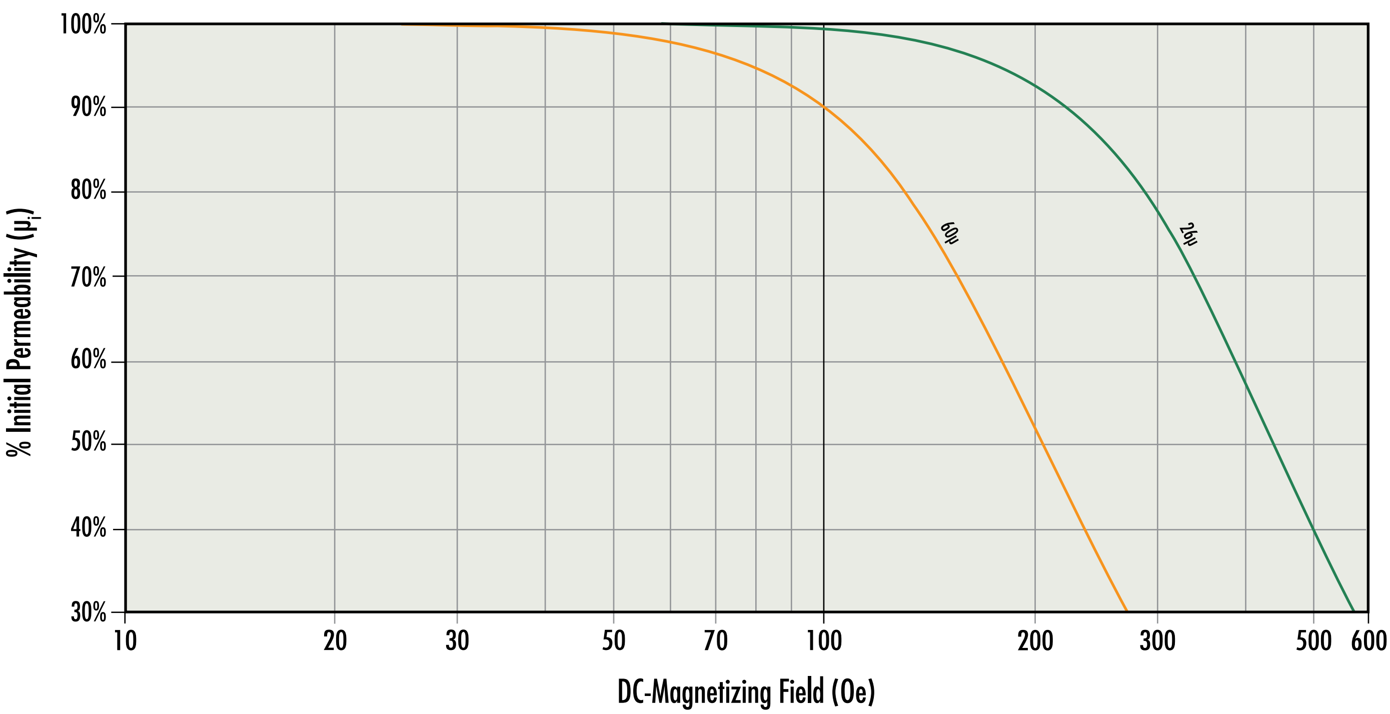


Permeability versus DC Bias Curves

High Flux Toroids

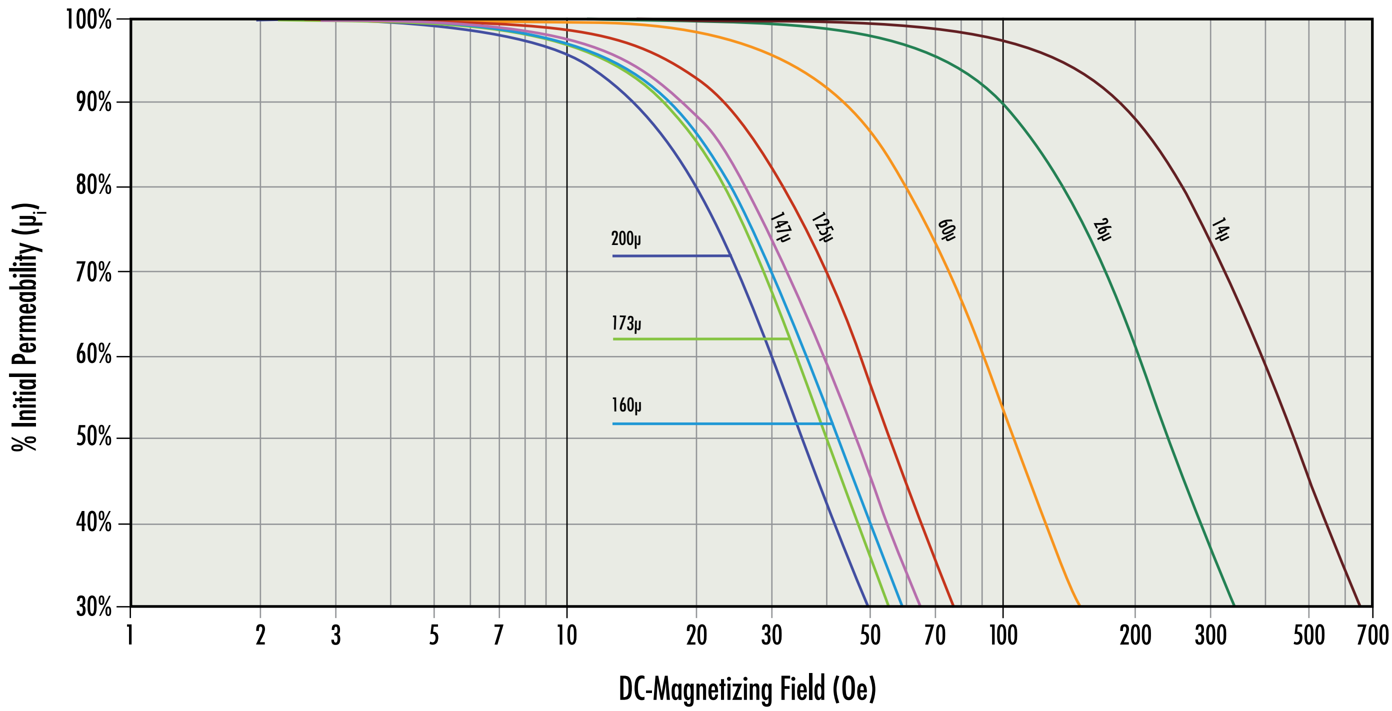


Edge™ Toroids

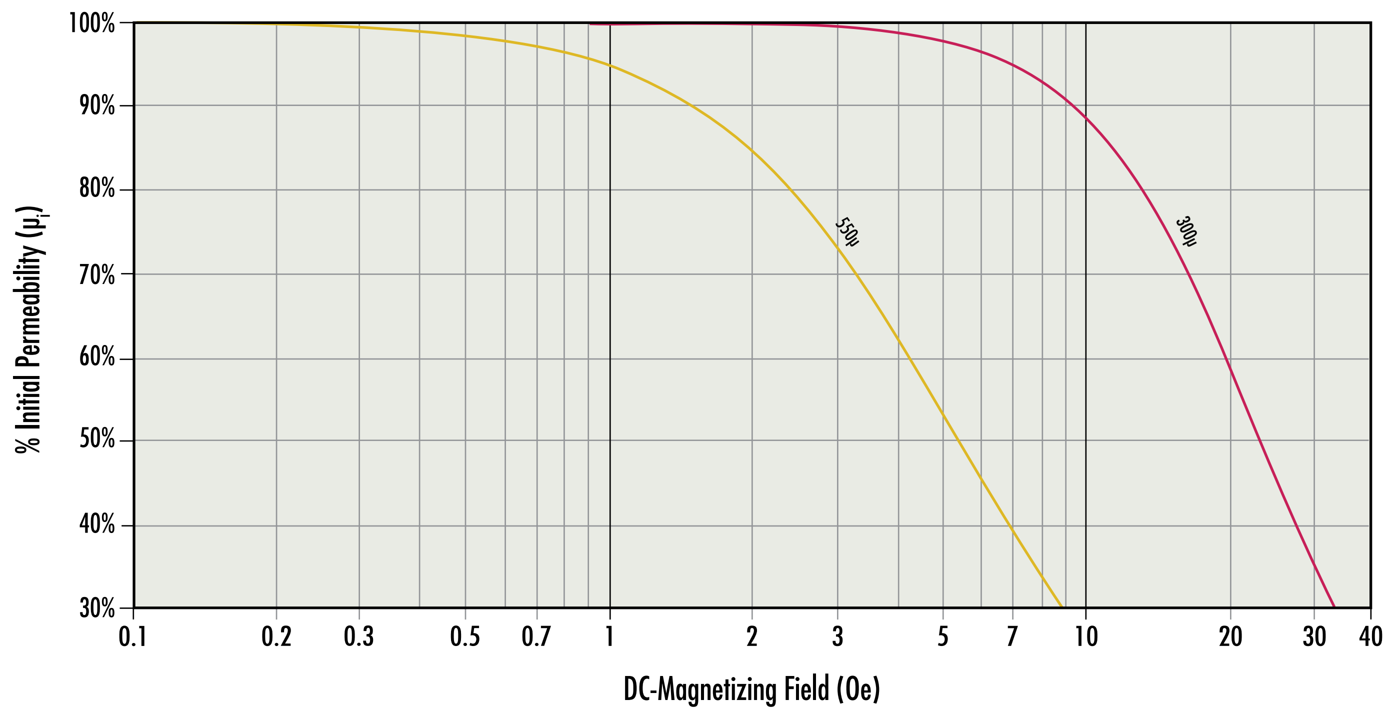


Permeability versus DC Bias Curves

MPP Toroids 14µ - 200µ

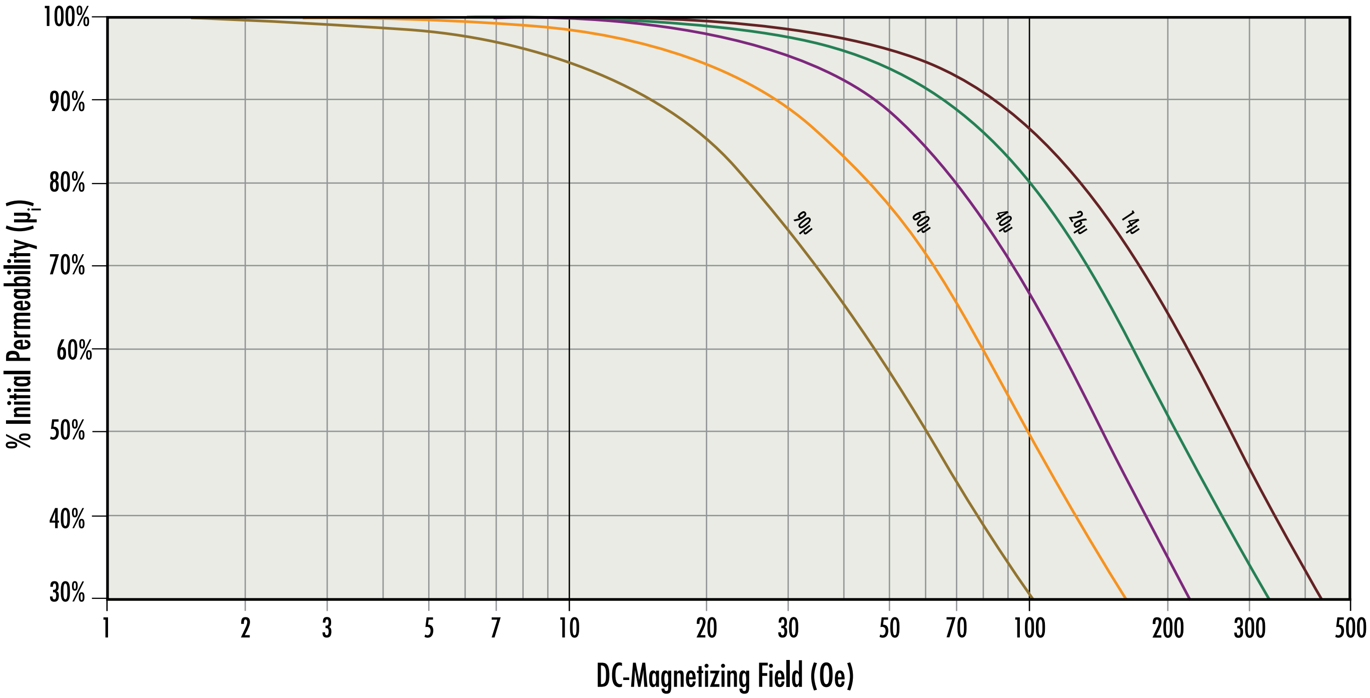


MPP Toroids 300µ & 550µ

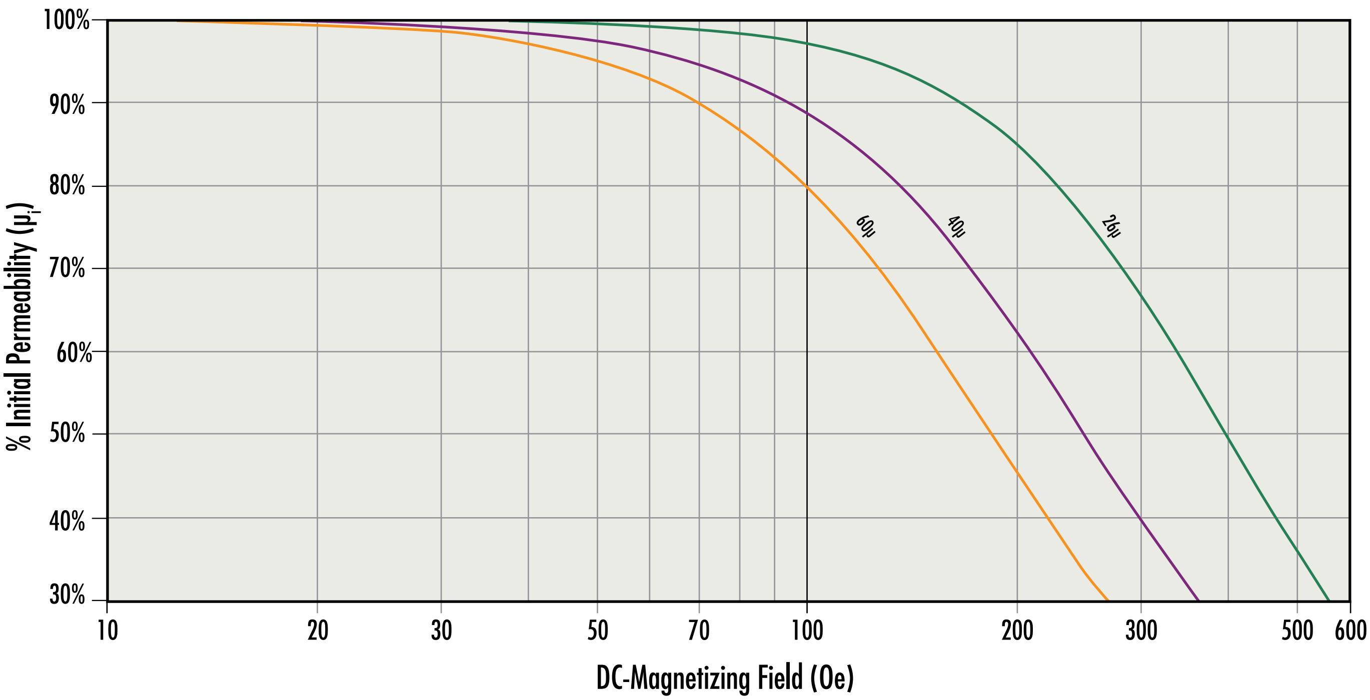


Permeability versus DC Bias Curves

Kool Mμ® E Cores, U Cores & Blocks

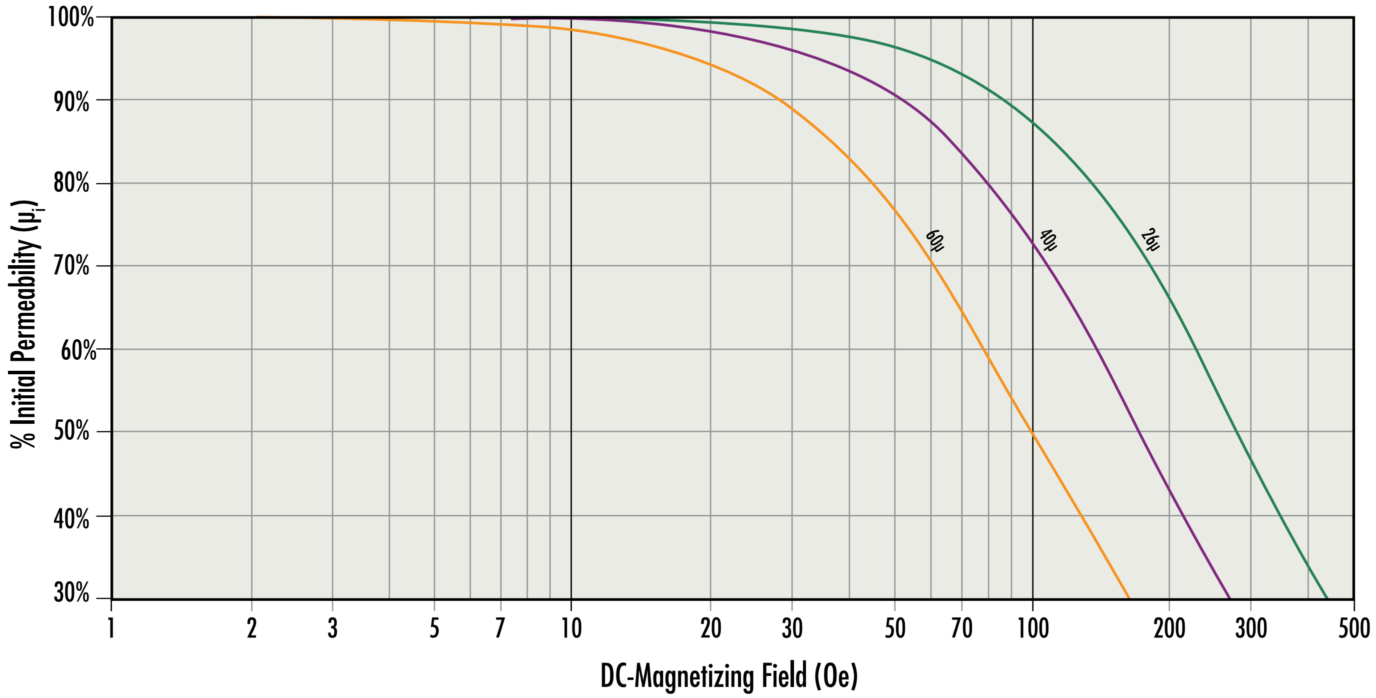


XFLUX® E Cores, U Cores & Blocks

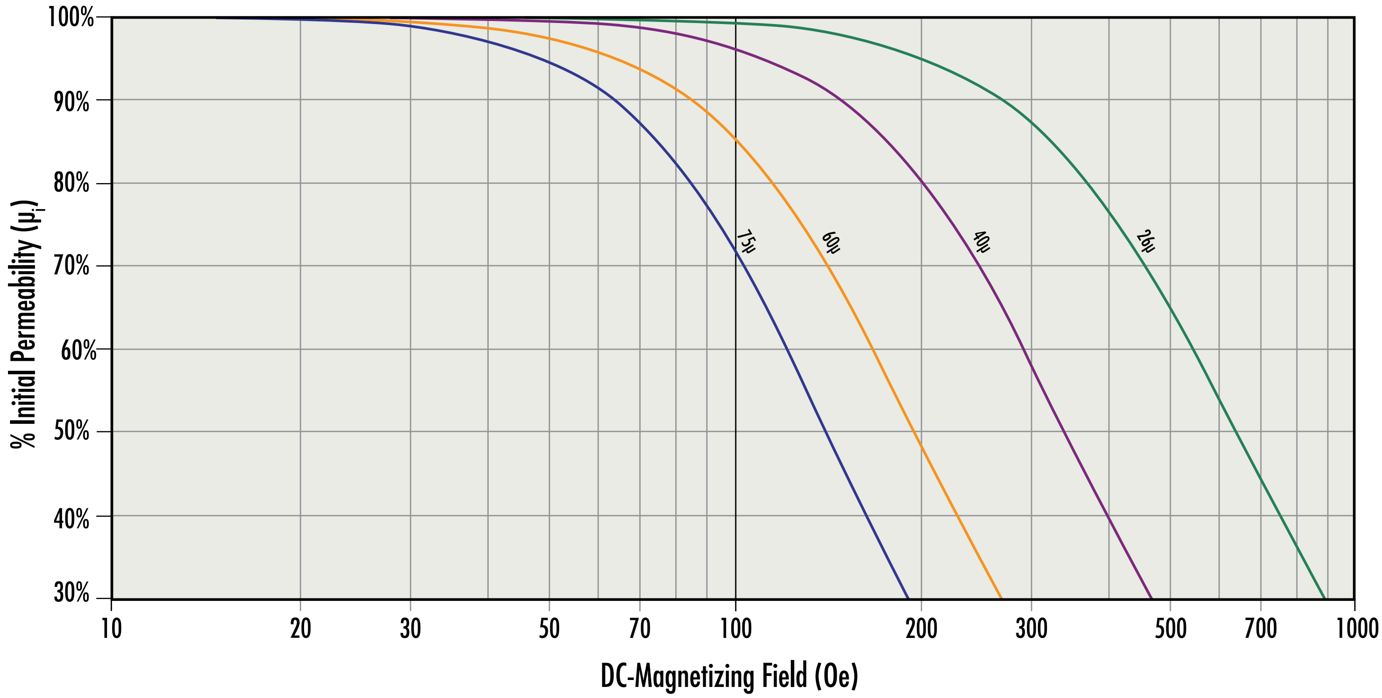


Permeability versus DC Bias Curves

Kool Mμ® EQ Cores

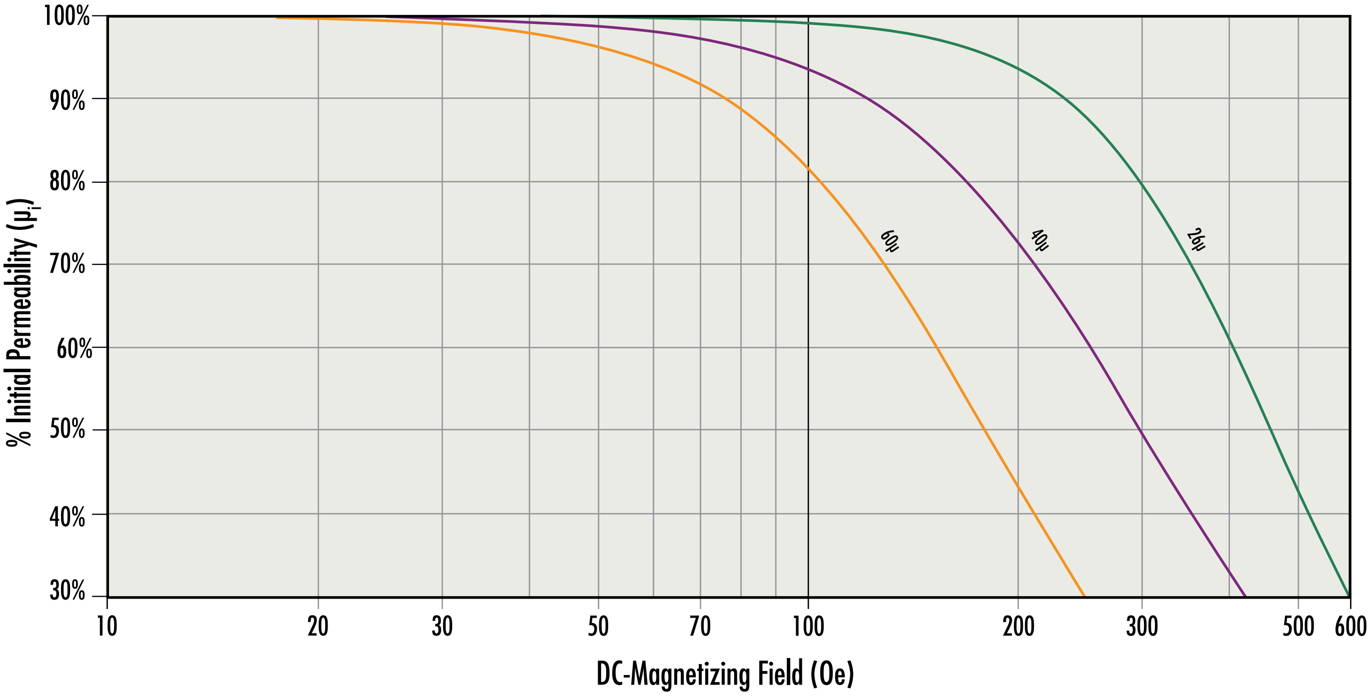


XFLUX® EQ Cores



Permeability versus DC Bias Curves

High Flux EQ Cores



Permeability versus DC Bias Curves

Fit Formula

$$\%\ \text{initial permeability} = \frac{1}{(a + bH^c)}$$ where H is Oersteds (Oe)

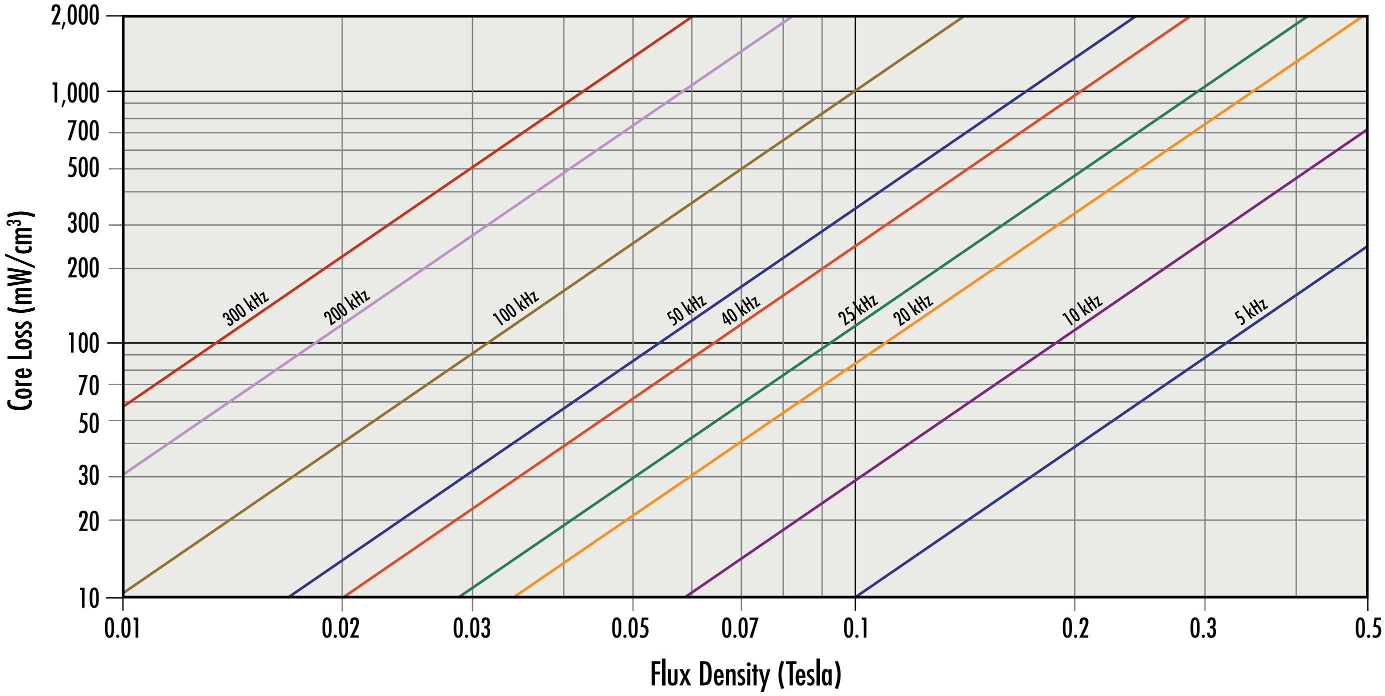
	Perm	a	b	c
Kool Mµ® Toroids	14µ	0.01	4.938E-08	2.000
	26µ	0.01	5.226E-07	1.819
	40µ	0.01	2.177E-06	1.704
	60µ	0.01	2.142E-06	1.855
	75µ	0.01	3.885E-06	1.819
	90µ	0.01	5.830E-06	1.819
	125µ	0.01	2.209E-05	1.636
Kool Mµ® MAX Toroids	14µ	0.01	8.274E-09	2.239
	19µ	0.01	3.136E-08	2.111
	26µ	0.01	3.444E-08	2.205
	40µ	0.01	5.919E-07	1.855
	60µ	0.01	5.917E-07	2.000
Kool Mµ® Hƒ Toroids	26µ	0.01	3.556E-08	2.213
	60µ	0.01	4.064E-07	2.131
XFLUX® Toroids	19µ	0.01	4.976E-09	2.236
	26µ	0.01	6.304E-10	2.714
	40µ	0.01	1.843E-08	2.358
	60µ	0.01	1.489E-08	2.613
	75µ	0.01	2.269E-08	2.649
	90µ	0.01	9.841E-08	2.477
	125µ	0.01	2.687E-07	2.477
High Flux Toroids	14µ	0.01	3.389E-08	1.923
	26µ	0.01	4.205E-09	2.426
	40µ	0.01	1.841E-08	2.409
	60µ	0.01	6.413E-08	2.291
	125µ	0.01	1.403E-07	2.465
	147µ	0.01	1.207E-06	2.131
	160µ	0.01	1.704E-06	2.094
Edge™ Toroids	26µ	0.01	3.646E-11	3.192
	60µ	0.01	9.202E-10	3.044
MPP Toroids	14µ	0.01	4.357E-09	2.385
	26µ	0.01	1.090E-08	2.505
	60µ	0.01	1.165E-07	2.436
	125µ	0.01	4.061E-07	2.518
	147µ	0.01	9.118E-07	2.430
	160µ	0.01	9.525E-07	2.477
	173µ	0.01	8.078E-07	2.563
	200µ	0.01	1.496E-06	2.477
	300µ	0.01	4.913E-06	2.430
	550µ	0.01	5.597E-04	1.710

	Perm	a	b	c
Kool Mµ® E Cores, U Cores & Blocks	14µ	0.01	3.066E-07	1.850
	26µ	0.01	4.581E-07	1.868
	40µ	0.01	7.684E-07	1.904
	60µ	0.01	3.371E-06	1.736
	90µ	0.01	1.529E-05	1.583
XFLUX® E Cores, U Cores & Blocks	26µ	0.01	3.031E-09	2.505
	40µ	0.01	4.028E-08	2.250
	60µ	0.01	7.781E-08	2.253
Kool Mµ® EQ Cores	26µ	0.01	2.237E-07	1.900
	40µ	0.01	7.905E-07	1.839
	60µ	0.01	3.371E-06	1.736
XFLUX® EQ Cores	26µ	0.01	7.955E-10	2.530
	40µ	0.01	2.434E-09	2.613
	60µ	0.01	9.731E-09	2.625
	75µ	0.01	1.091E-08	2.778
High Flux EQ Cores	26µ	0.01	2.313E-11	3.243
	40µ	0.01	8.995E-09	2.441
	60µ	0.01	1.583E-08	2.572

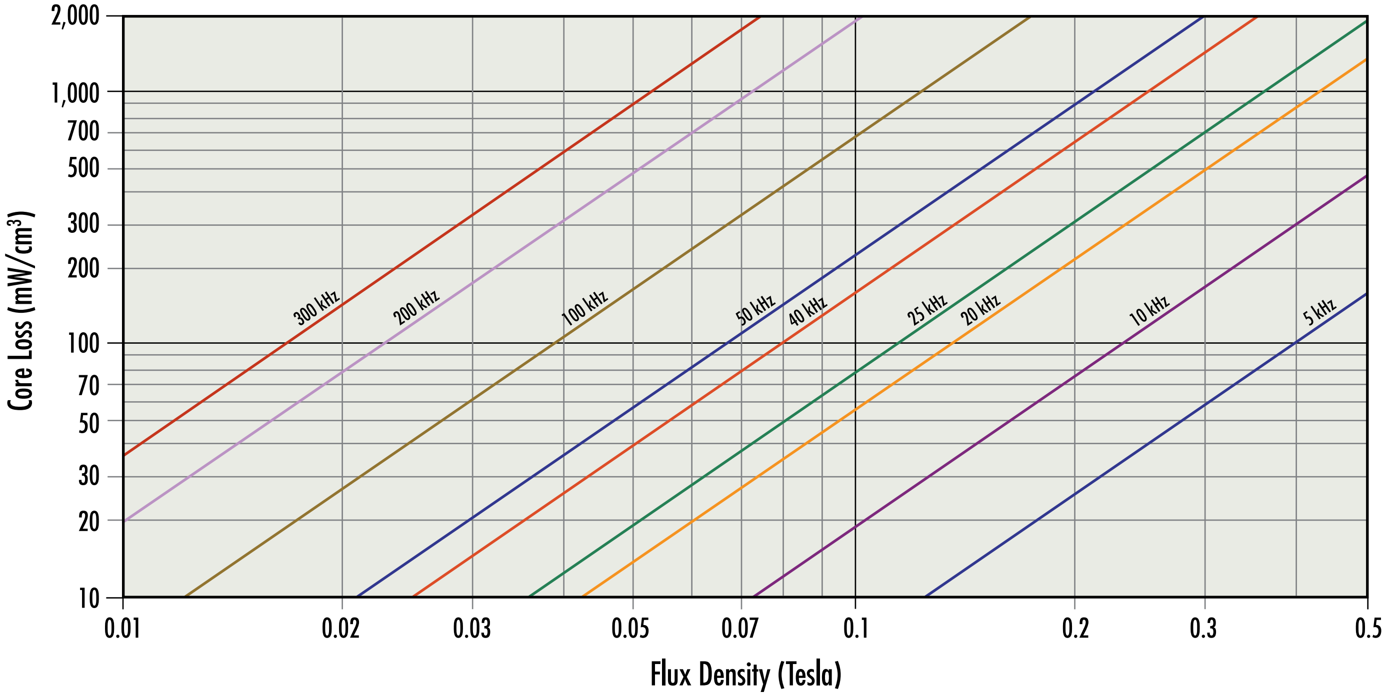
Note: Fit valid only for range shown on graph.

Core Loss Density Curves

Kool Mµ® Toroids 14µ

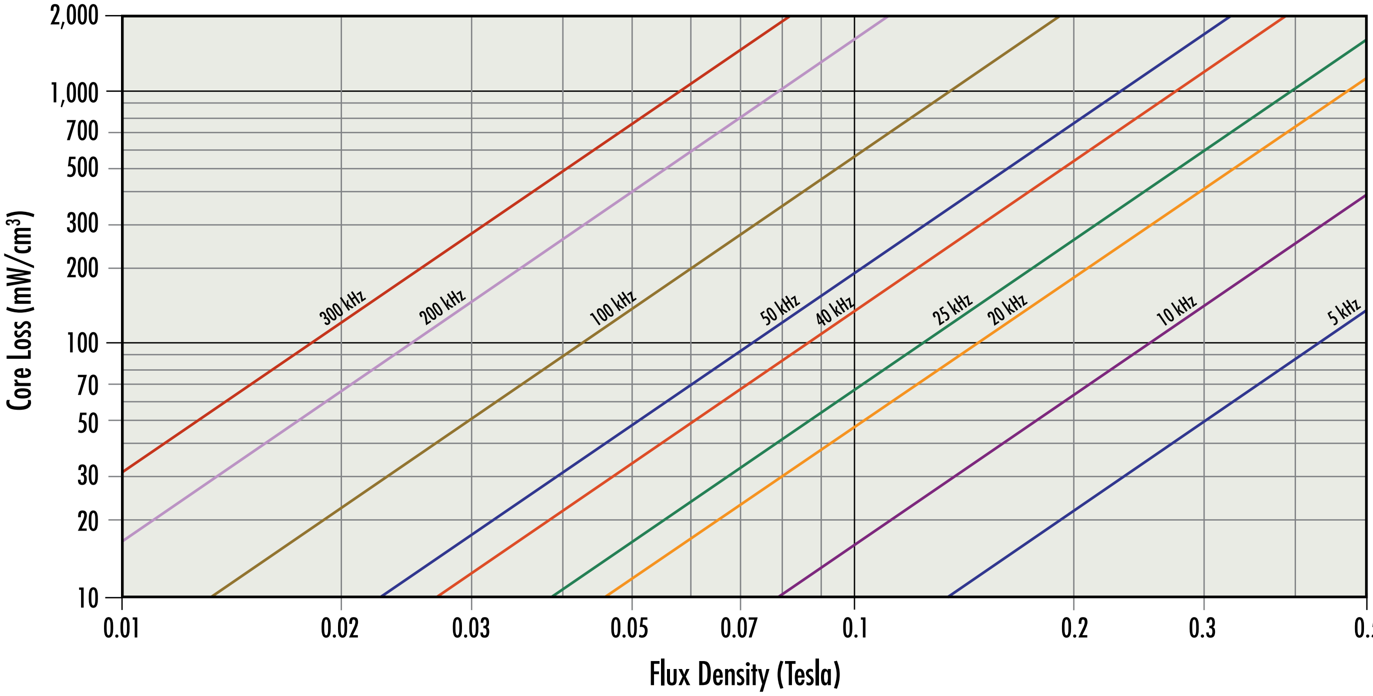


Kool Mµ® Toroids 26µ, 40µ

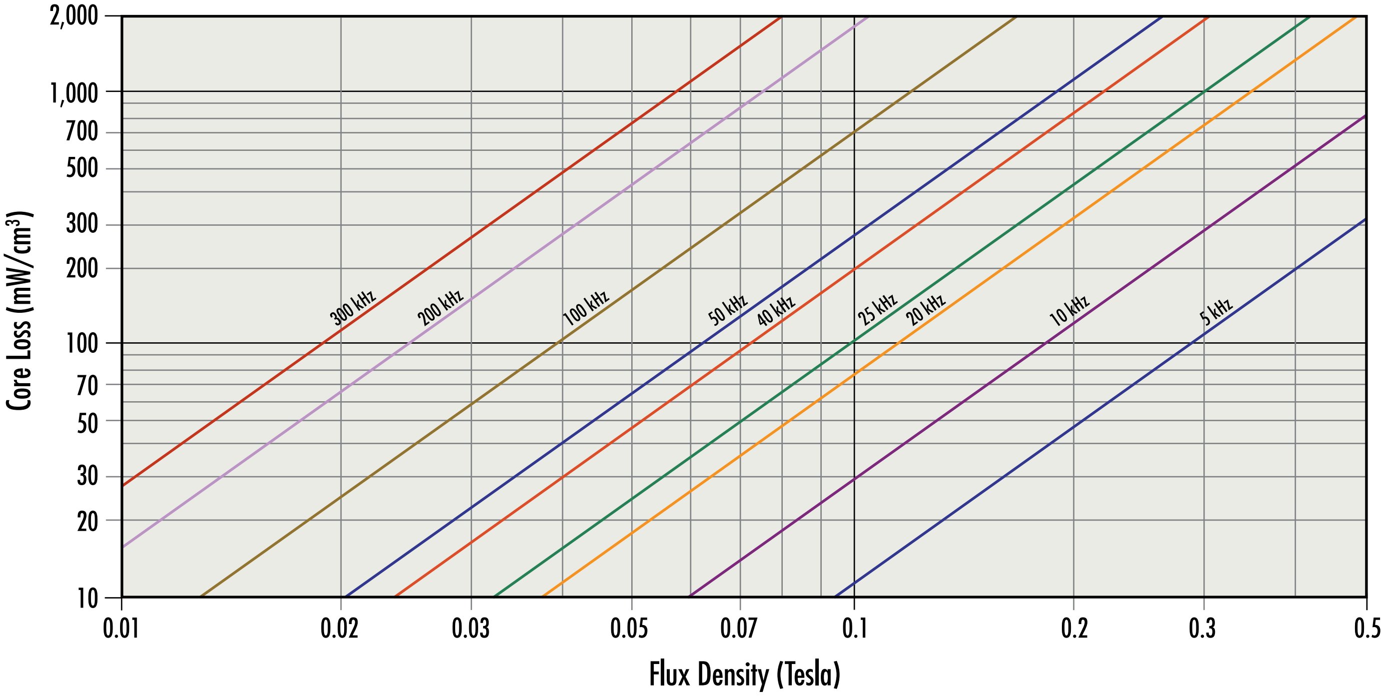


Core Loss Density Curves

Kool Mμ® Toroids 60μ, 75μ, 90μ, 125μ

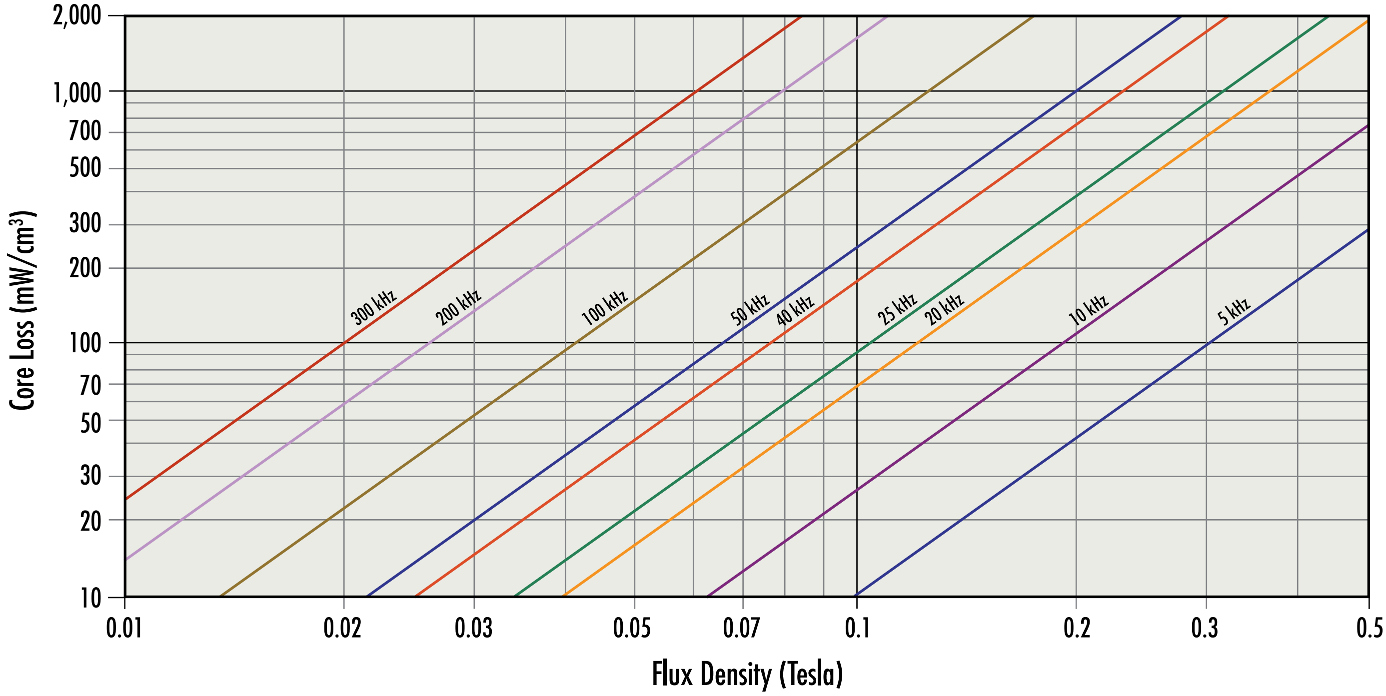


Kool Mμ® MAX Toroids 14μ

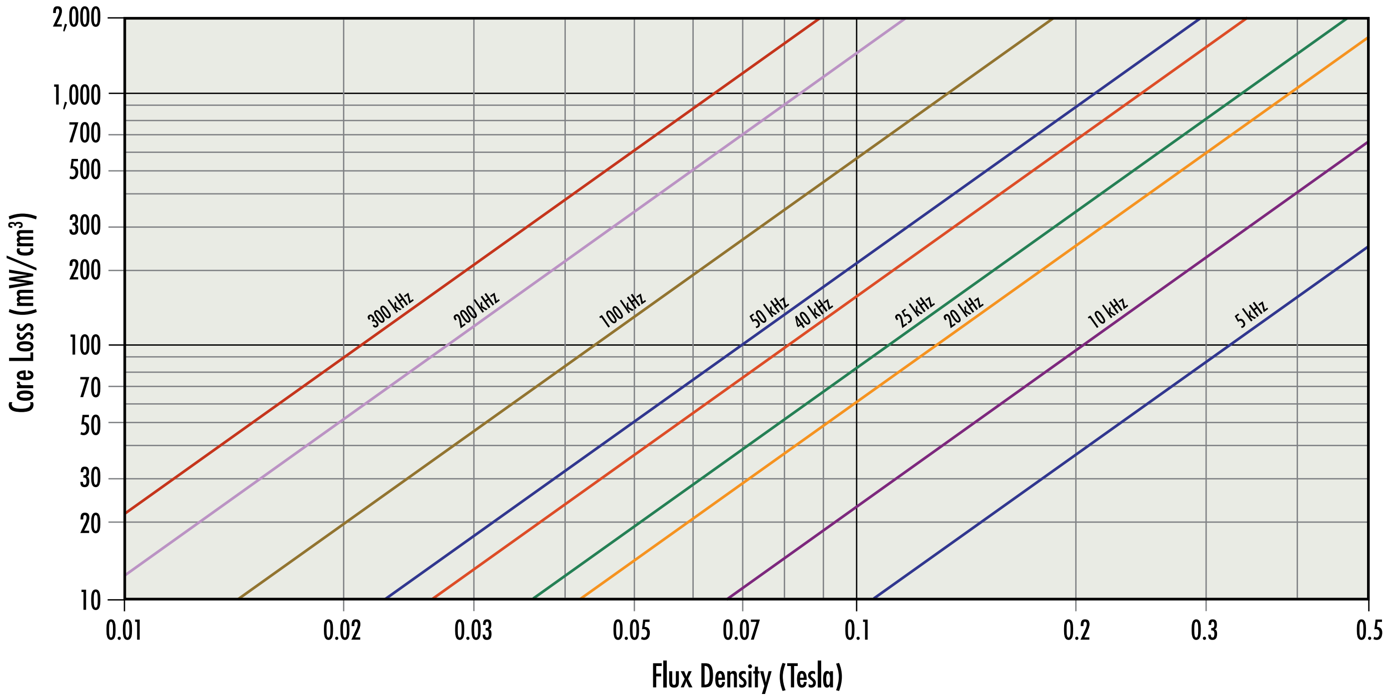


Core Loss Density Curves

Kool Mµ® MAX Toroids 19µ

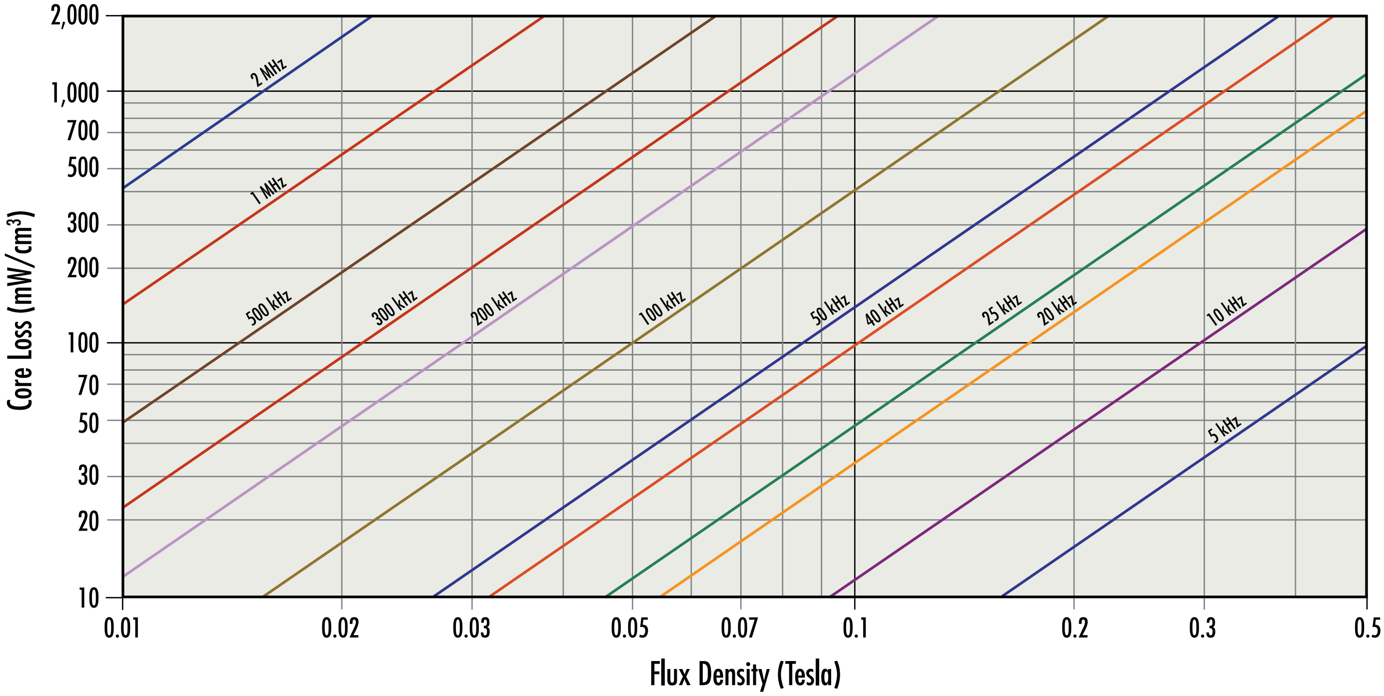


Kool Mµ® MAX Toroids 26µ, 40µ, 60µ

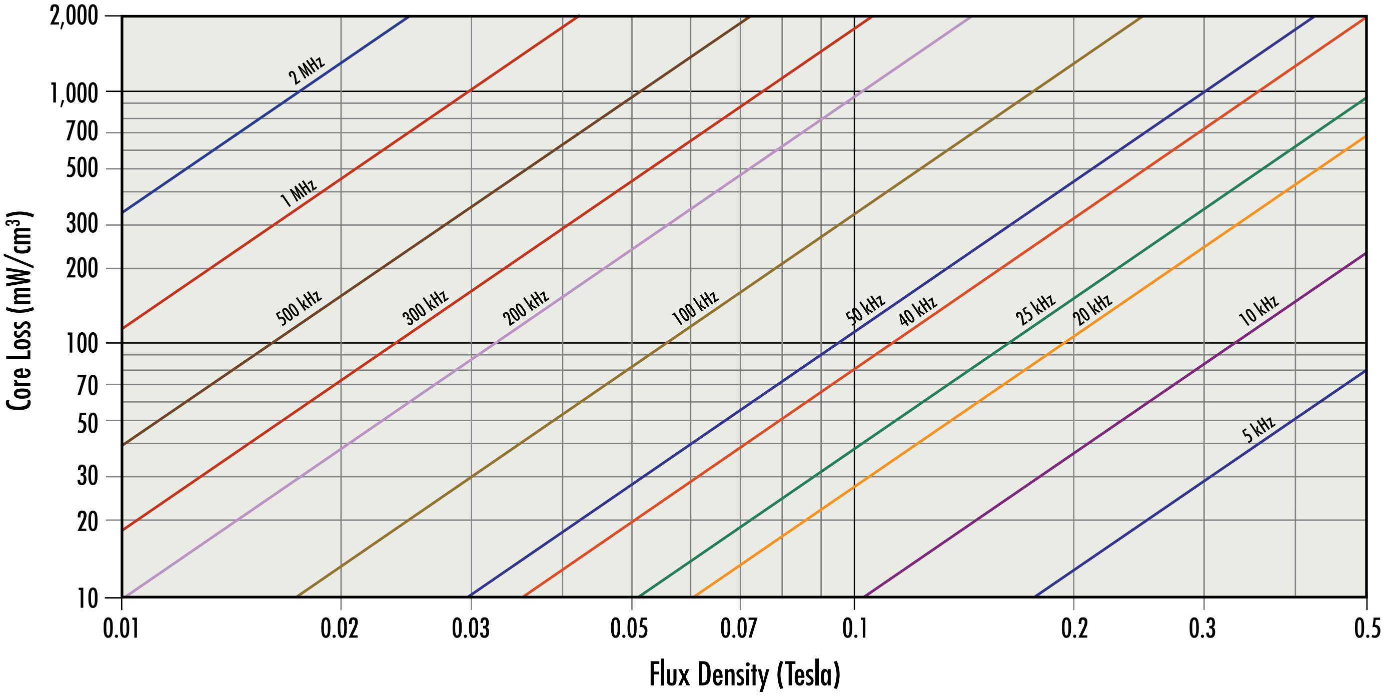


Core Loss Density Curves

Kool Mµ® H*ƒ* Toroids 26µ

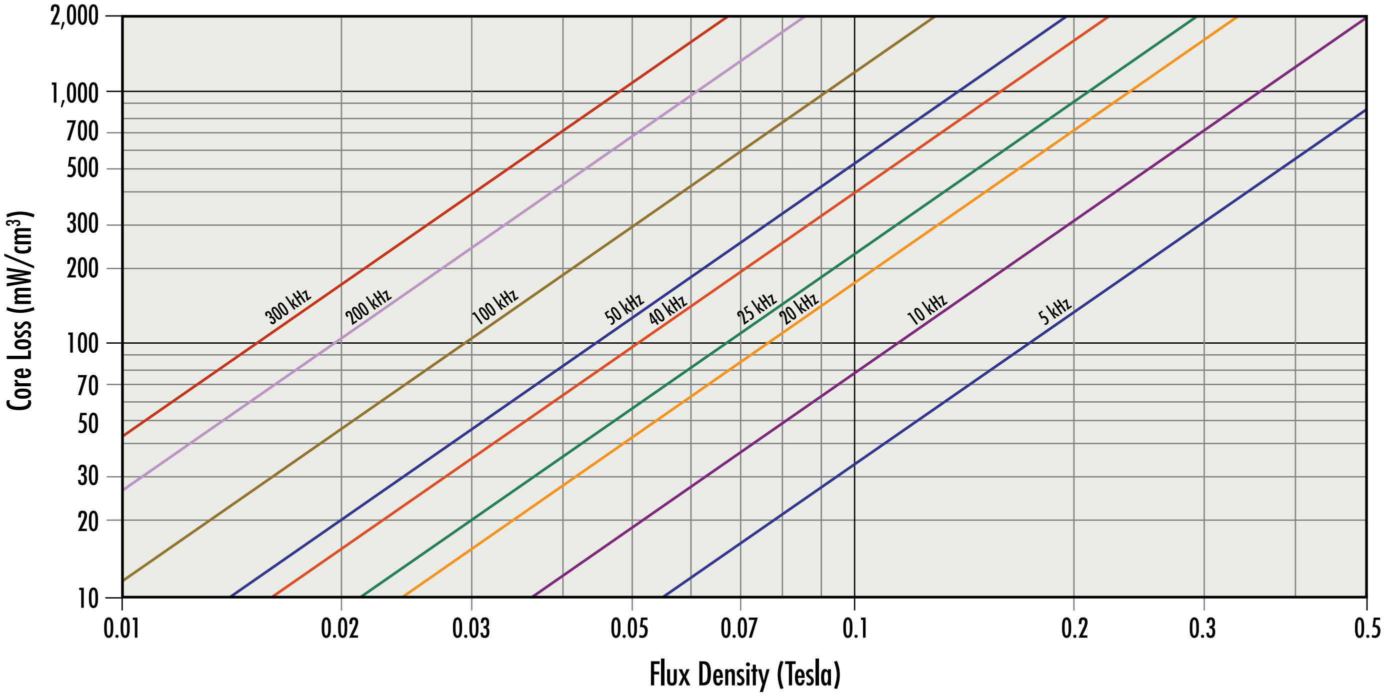


Kool Mµ® H*ƒ* Toroids 60µ

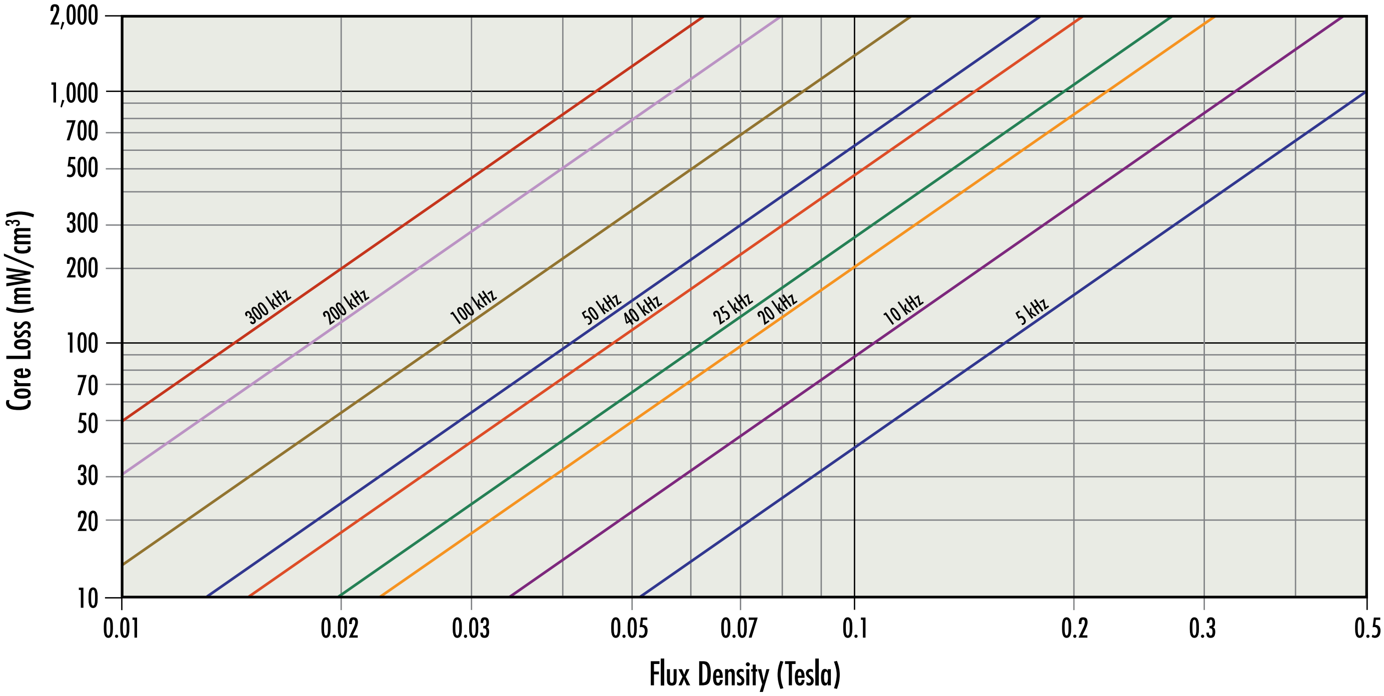


Core Loss Density Curves

XFlux® Toroids 19µ

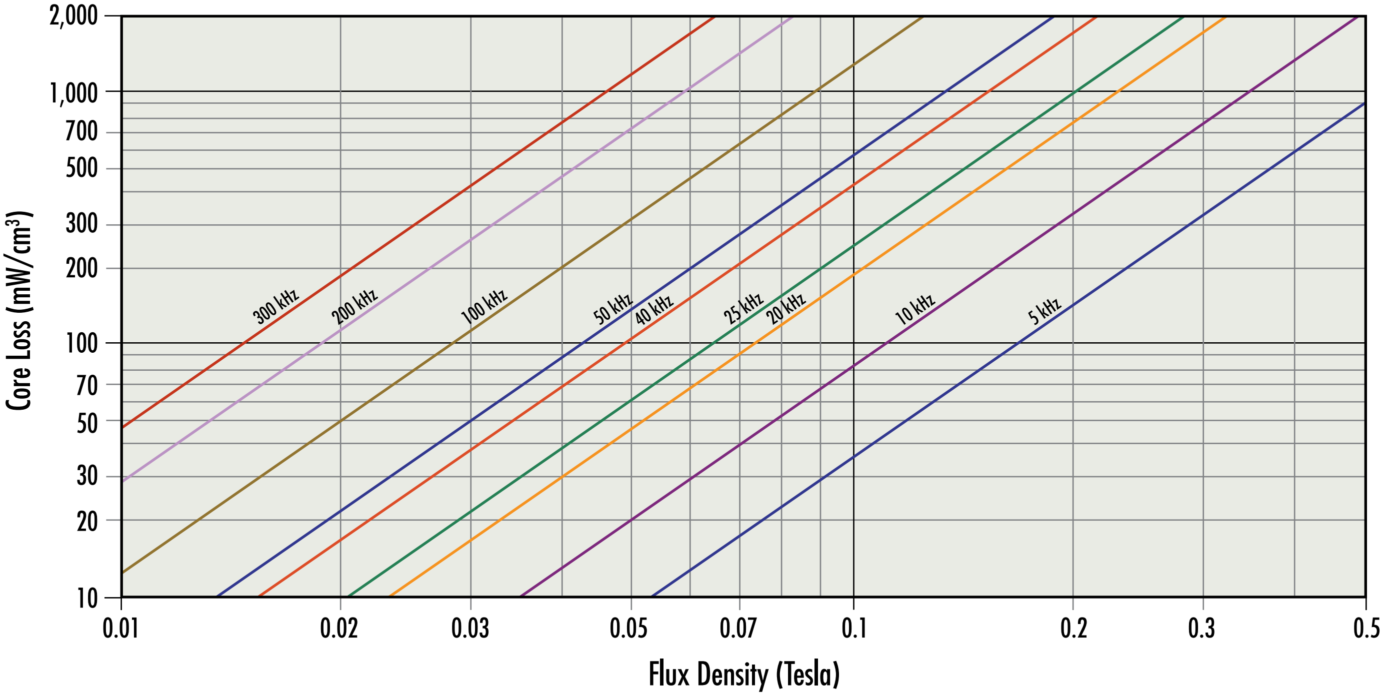


XFlux® Toroids 26µ, 40µ

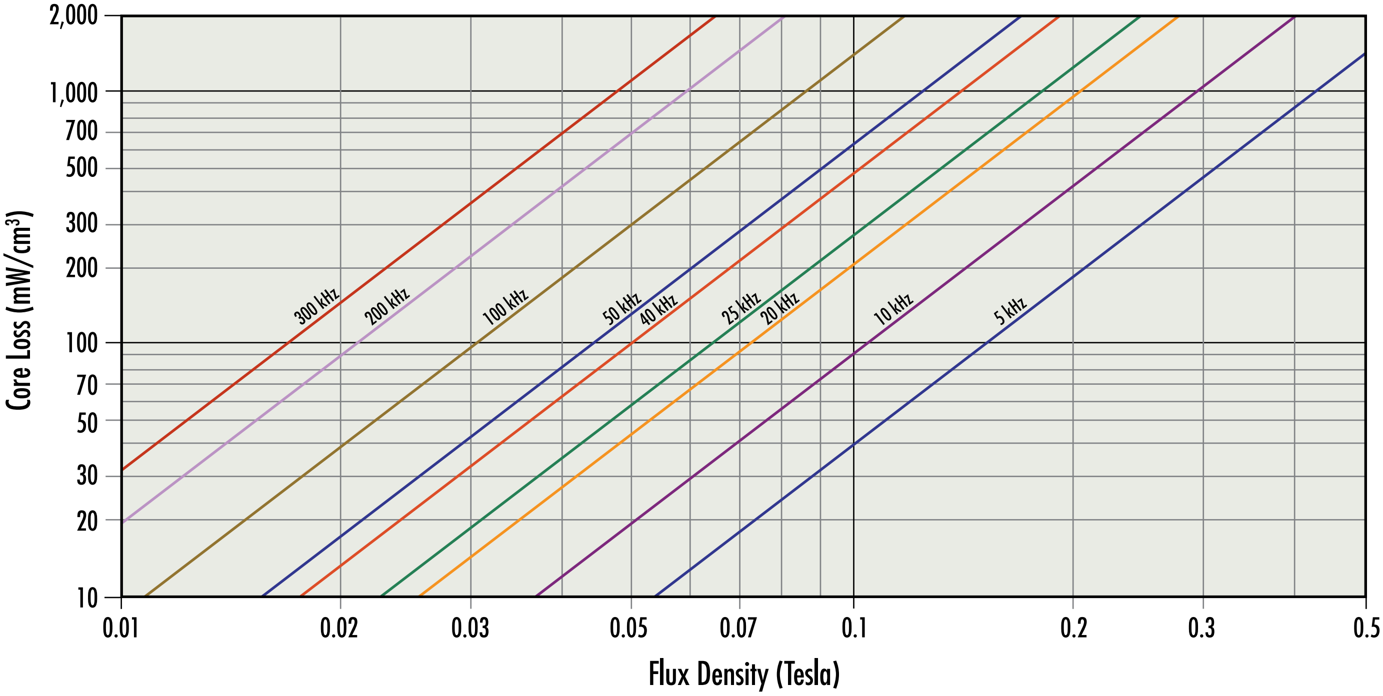


Core Loss Density Curves

XFLUX® Toroids 60μ, 75μ, 90μ, 125μ

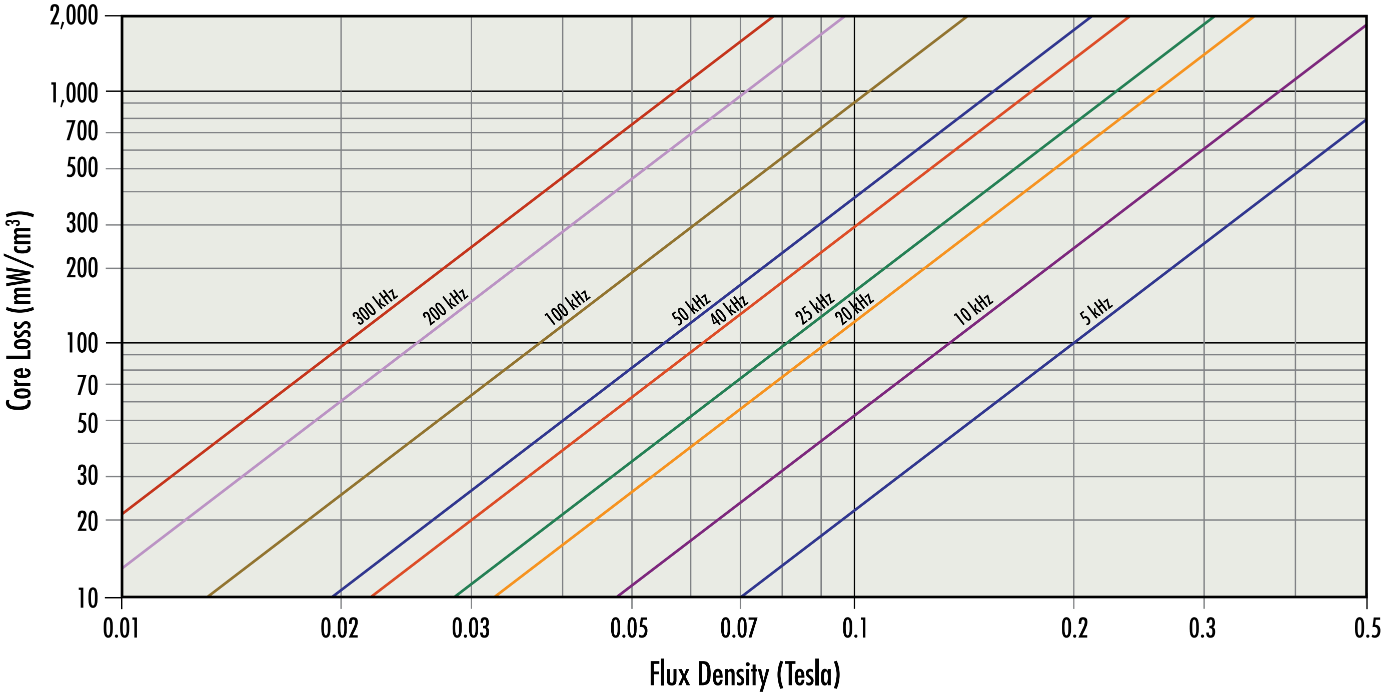


High Flux Toroids 14μ

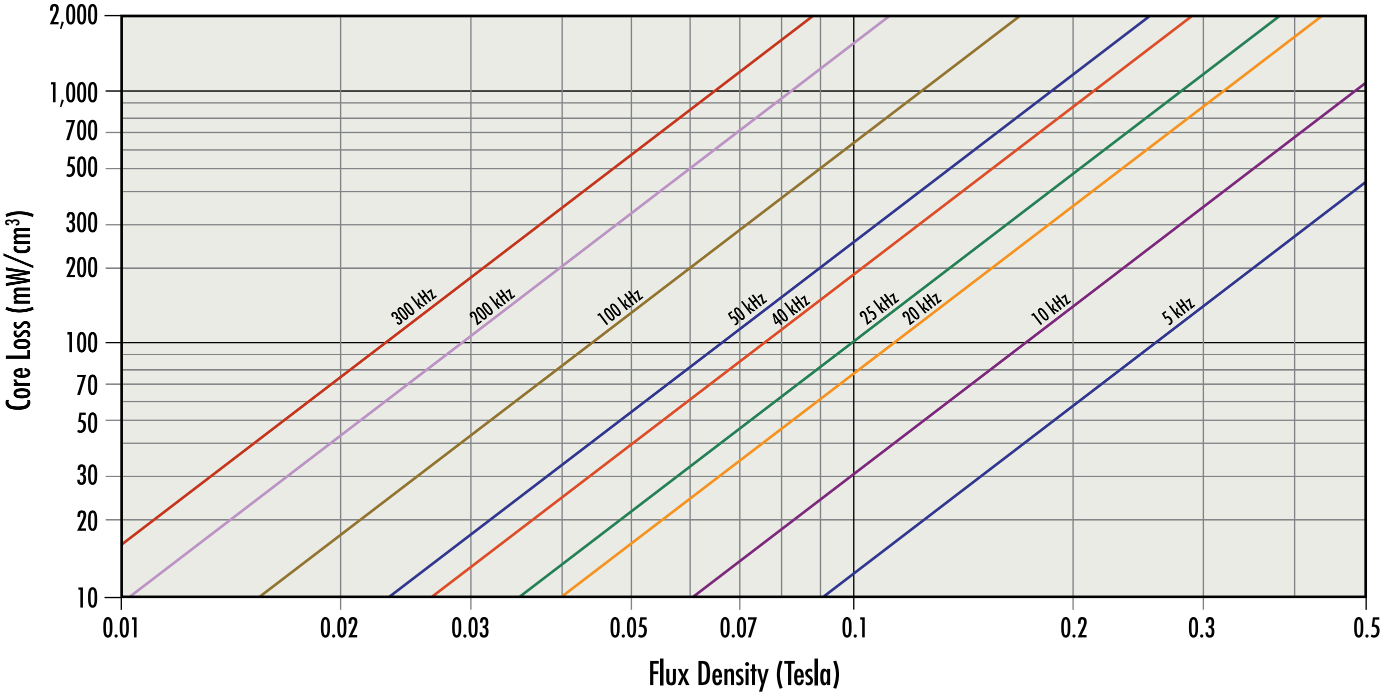


Core Loss Density Curves

High Flux Toroids 26µ, 40µ

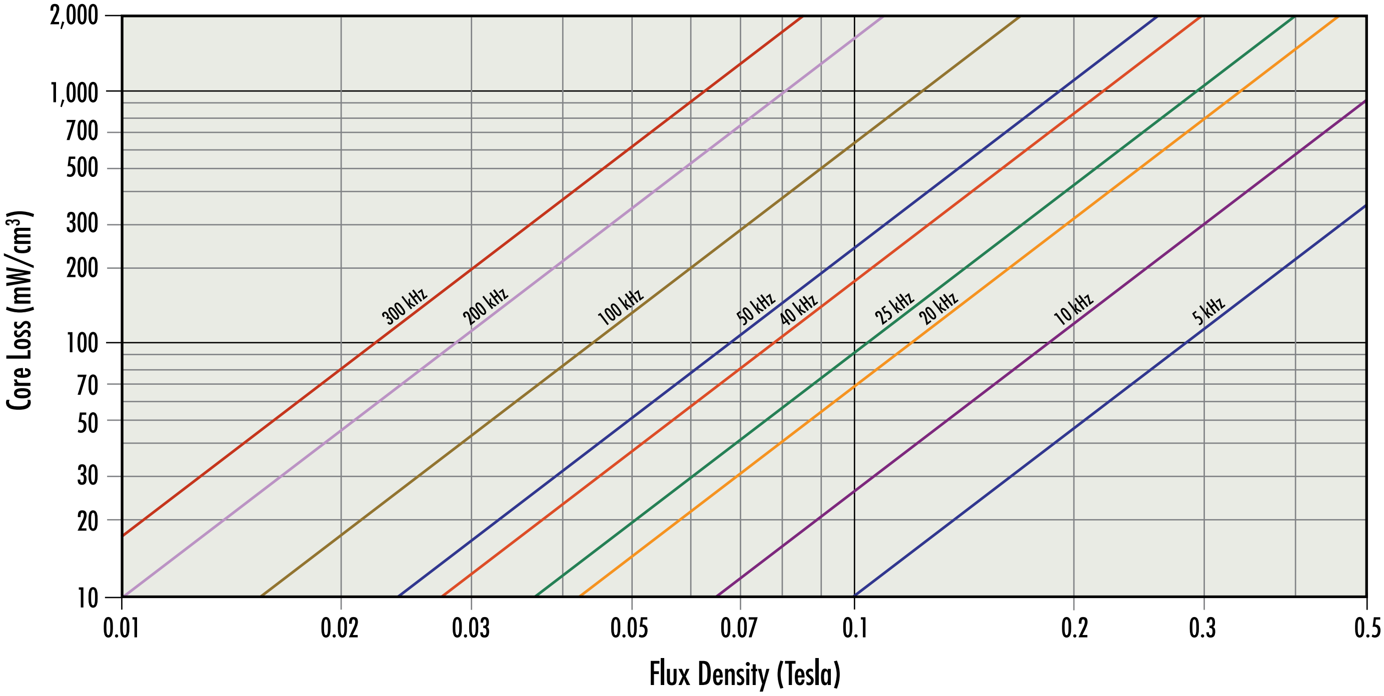


High Flux Toroids 60µ

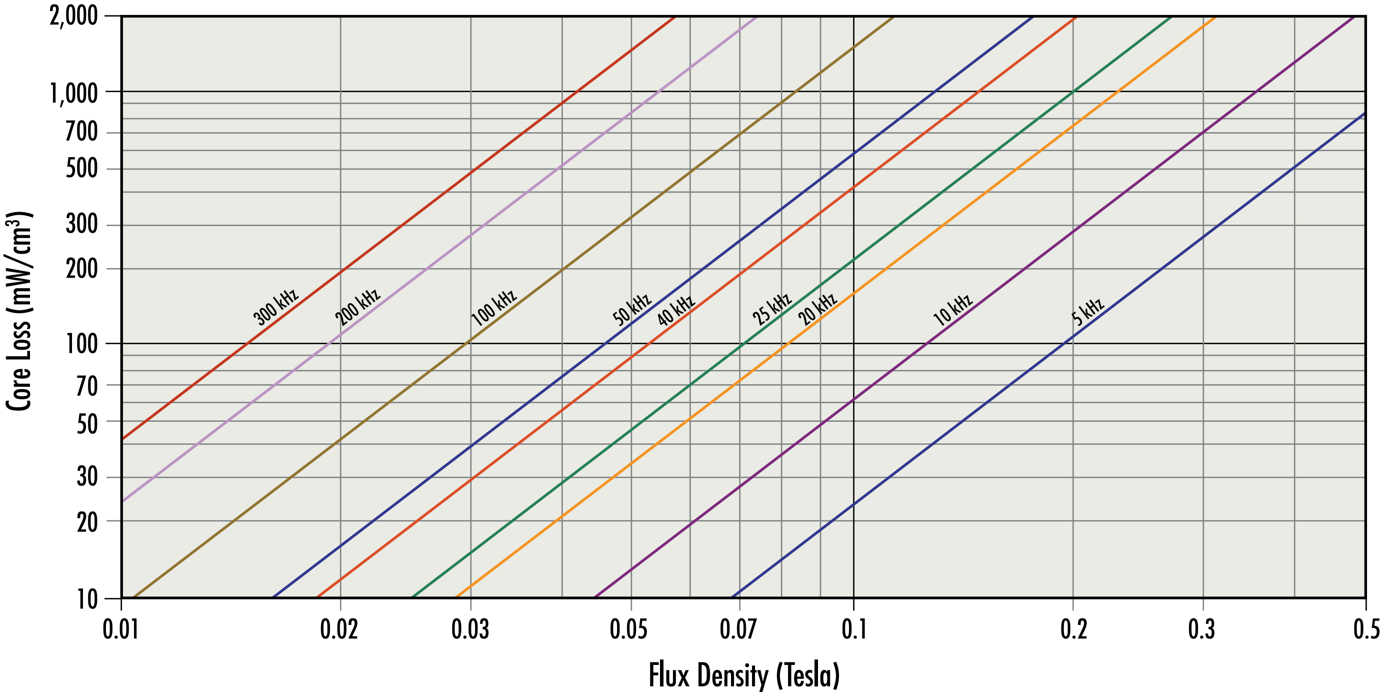


Core Loss Density Curves

High Flux Toroids 125µ

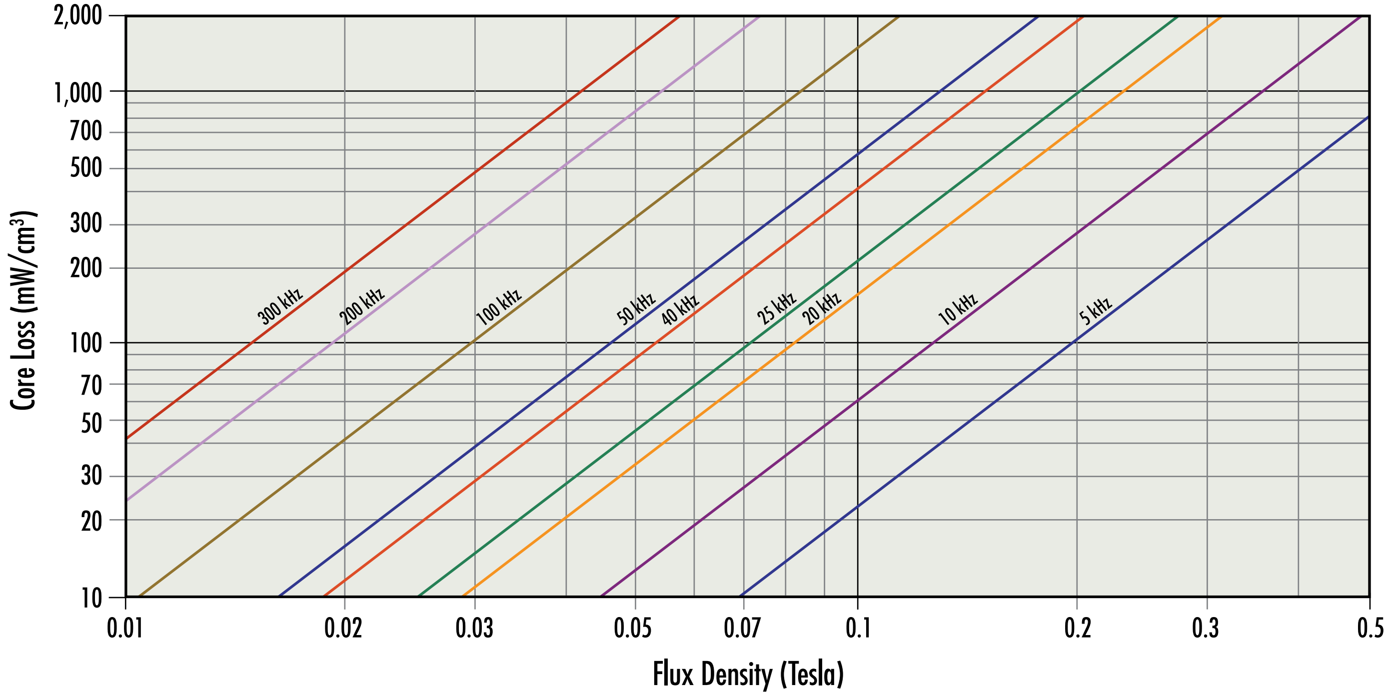


High Flux Toroids 147µ

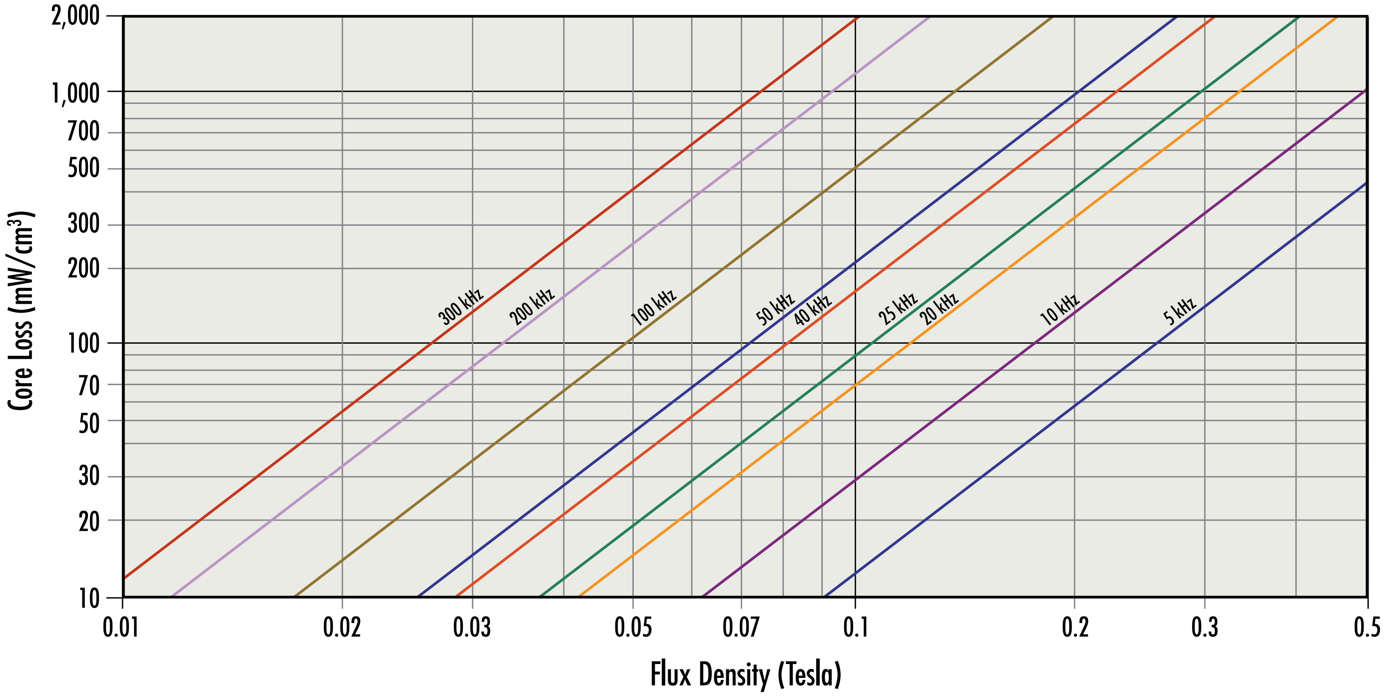


Core Loss Density Curves

High Flux Toroids 160µ

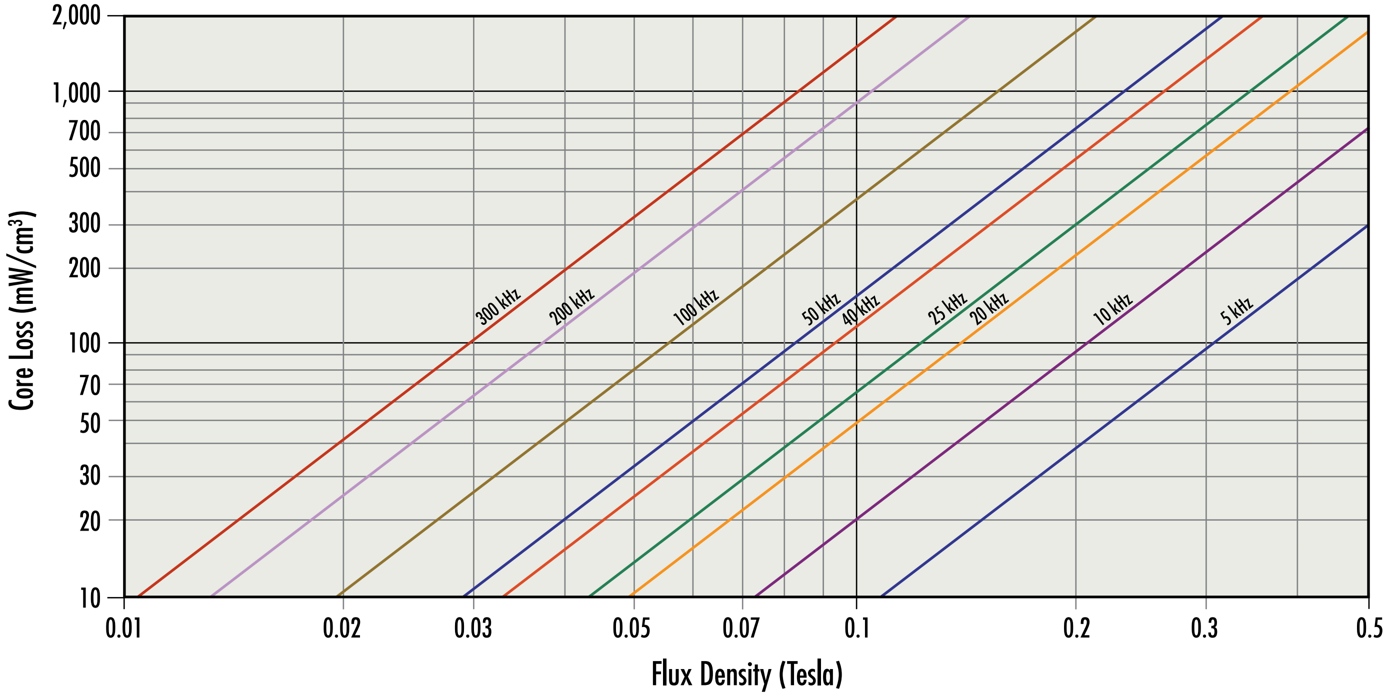


Edge™ Toroids 26µ

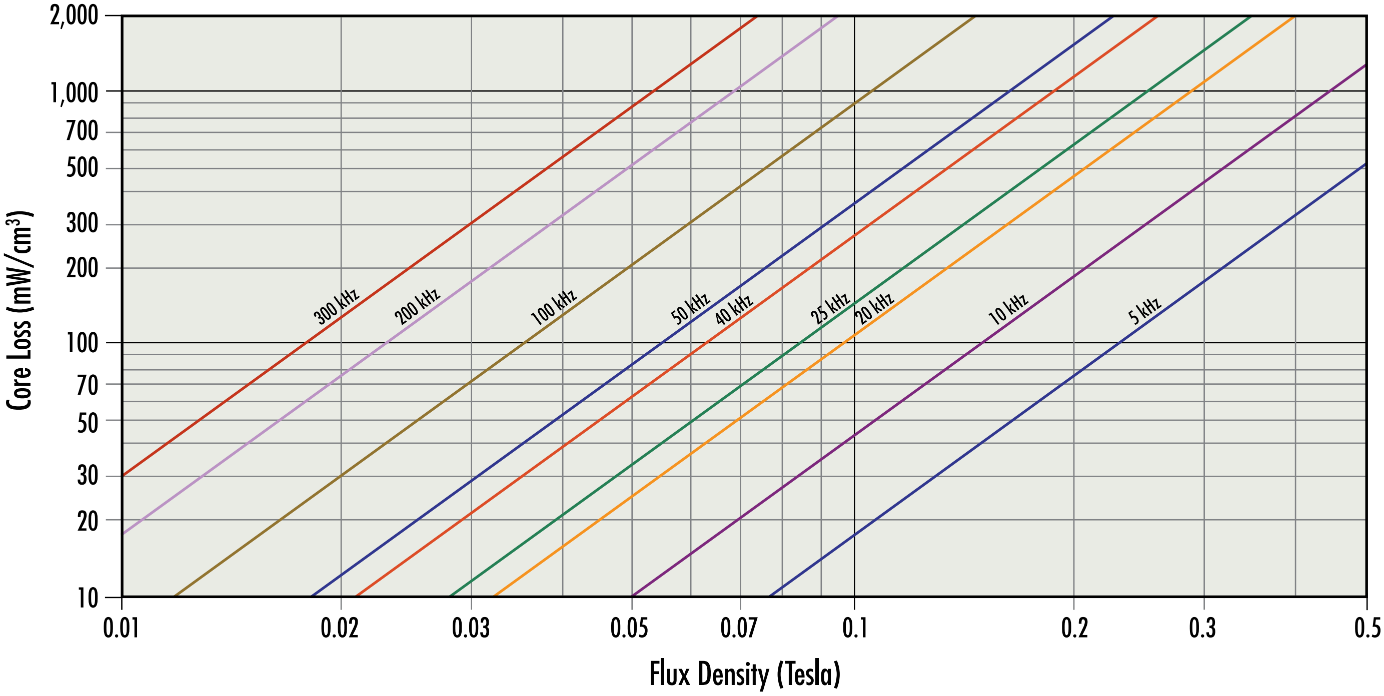


Core Loss Density Curves

Edge™ Toroids 60µ

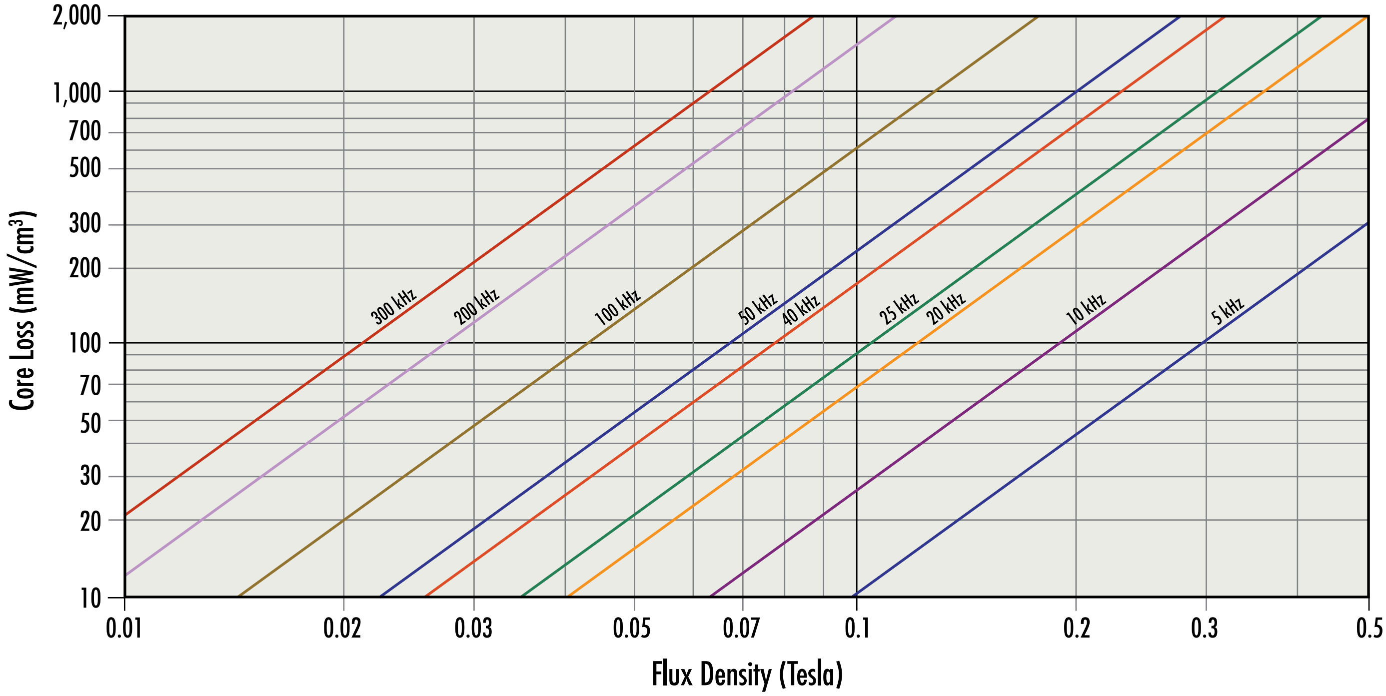


MPP Toroids 14µ

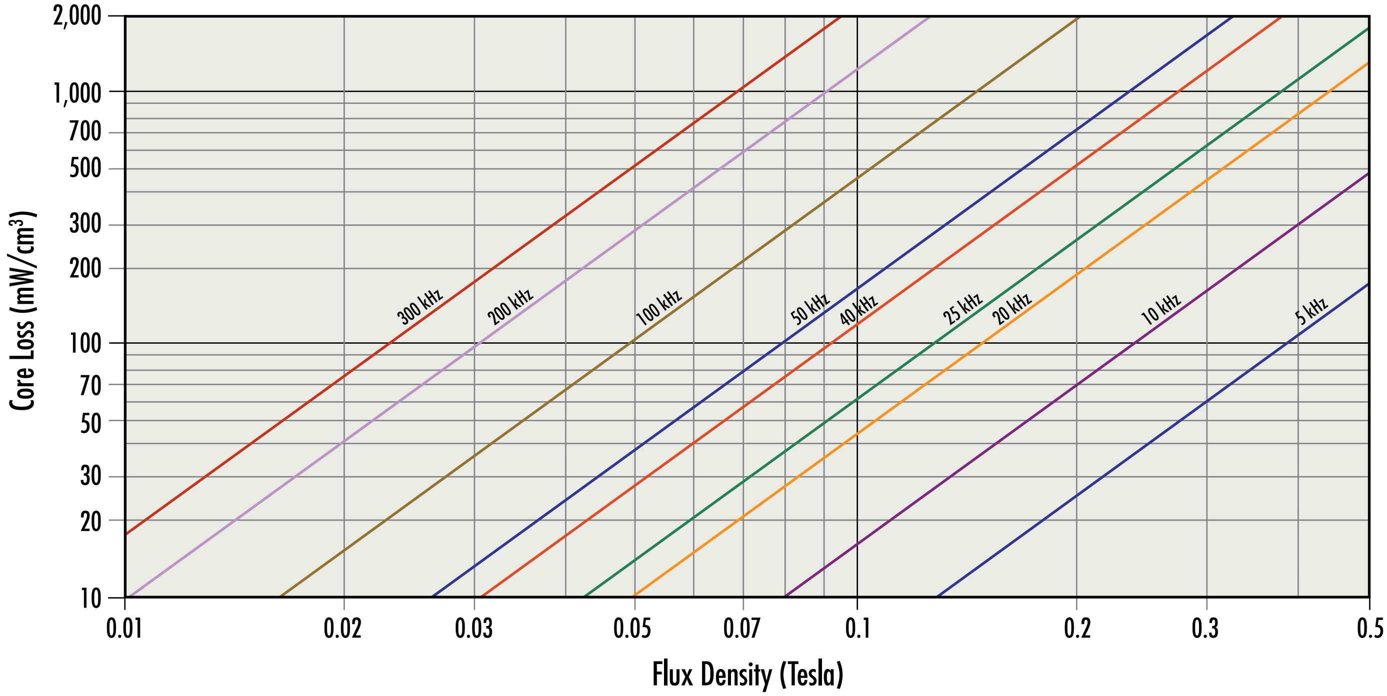


Core Loss Density Curves

MPP Toroids 26µ

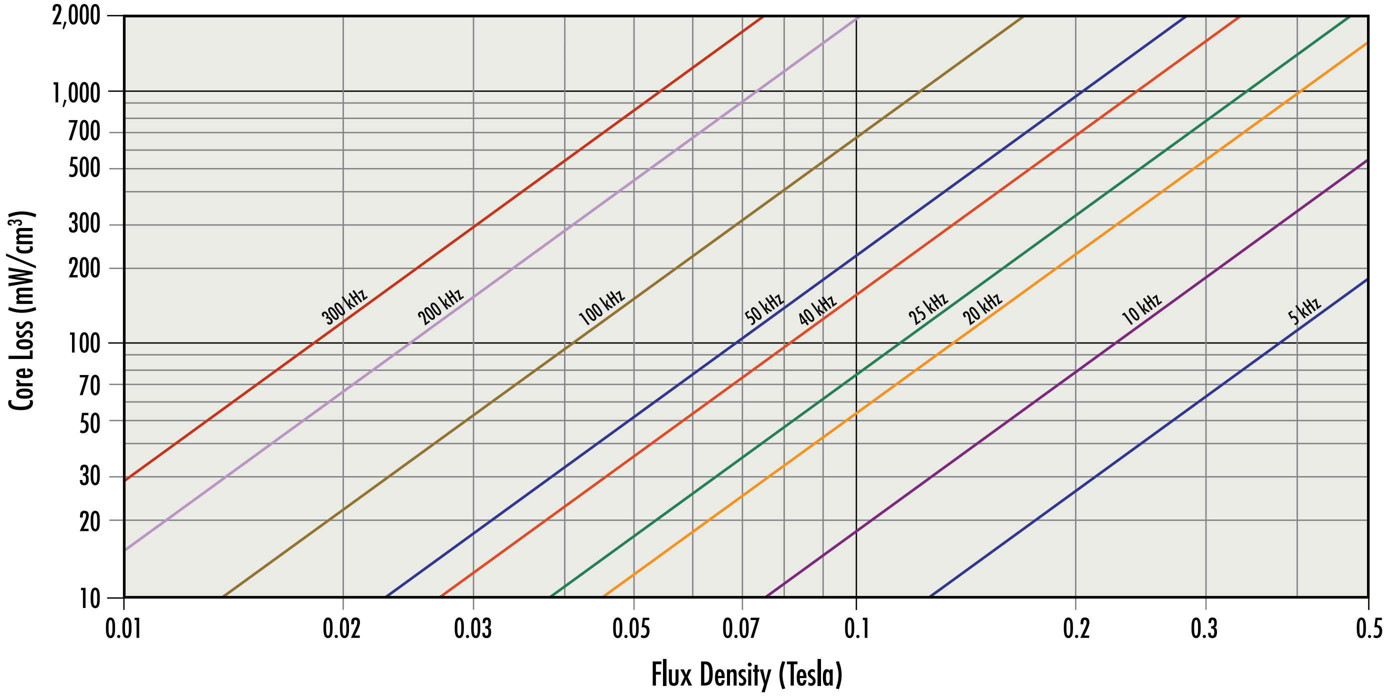


MPP Toroids 60µ

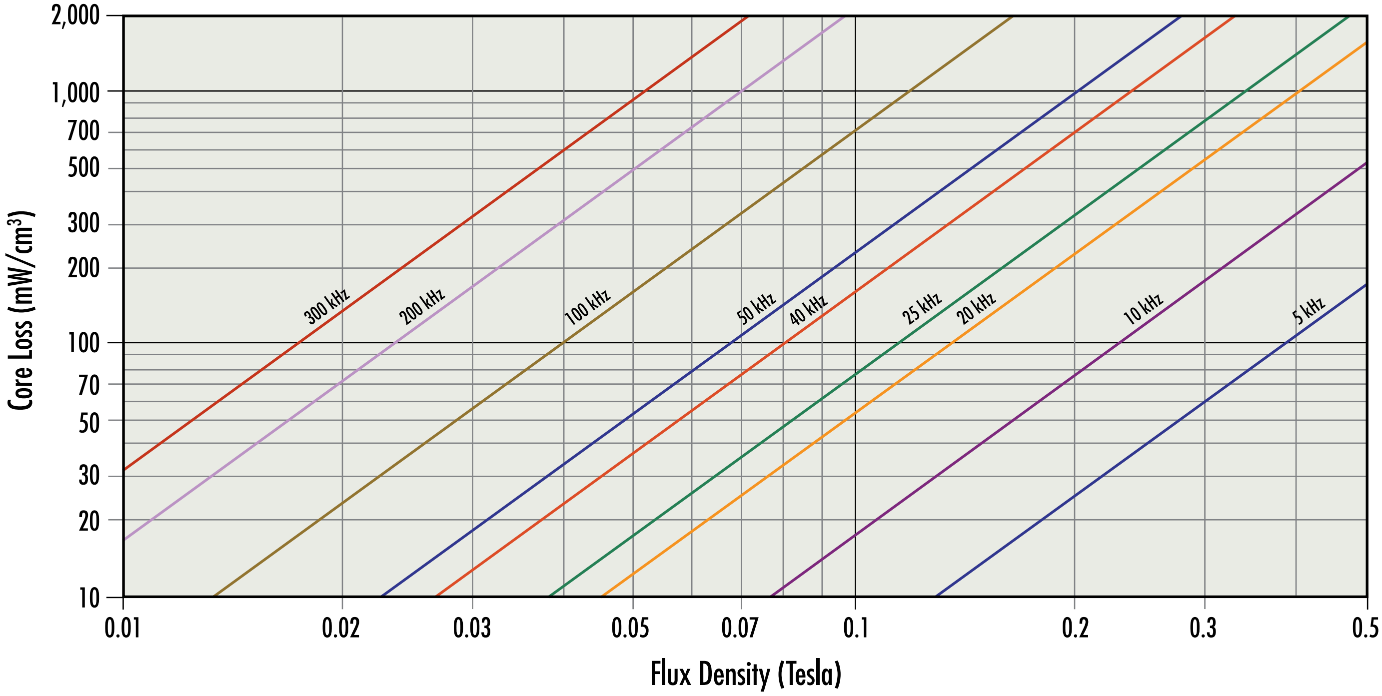


Core Loss Density Curves

MPP Toroids 125μ

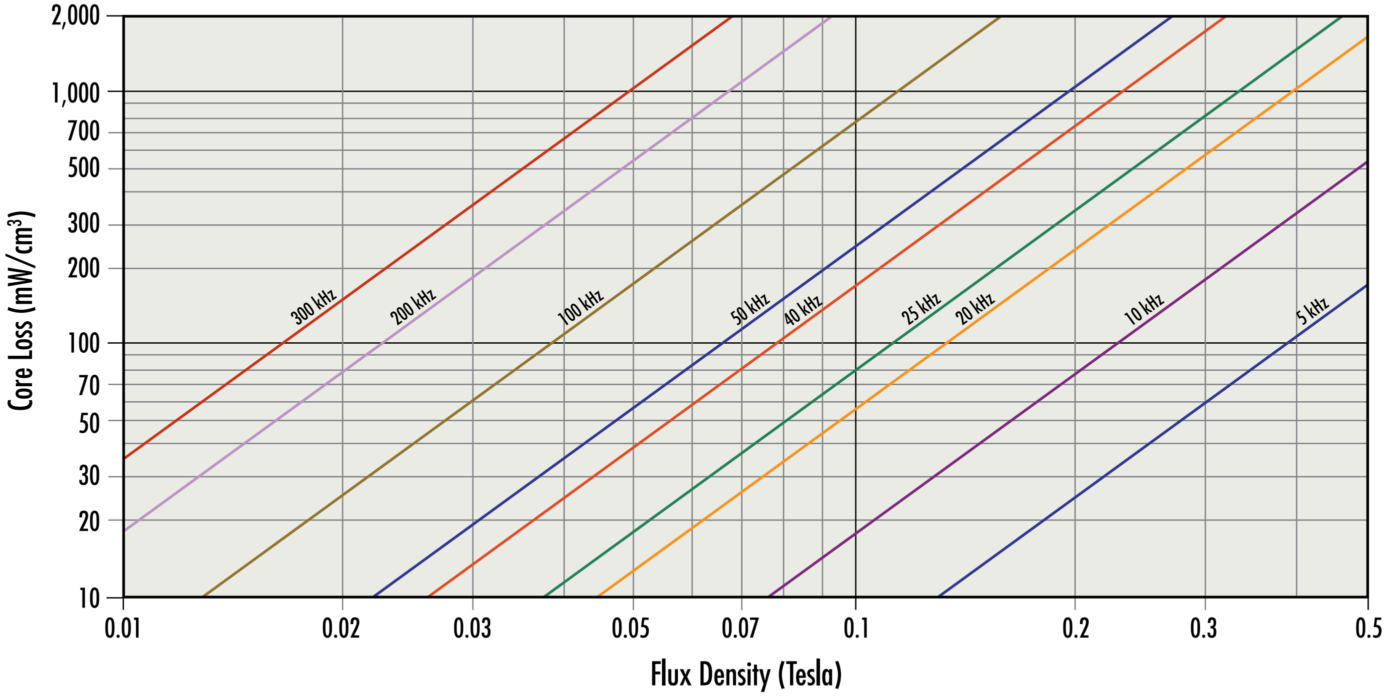


MPP Toroids 147μ, 160μ, 173μ

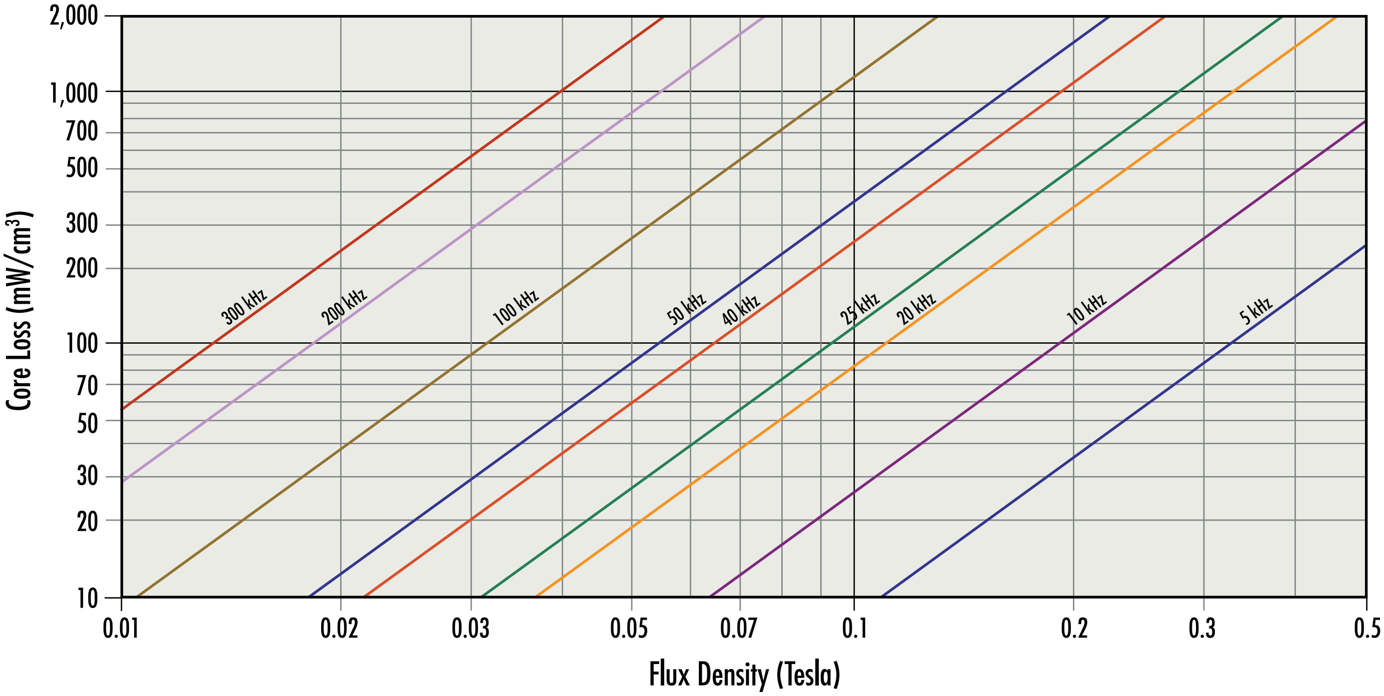


Core Loss Density Curves

MPP Toroids 200µ, 300µ

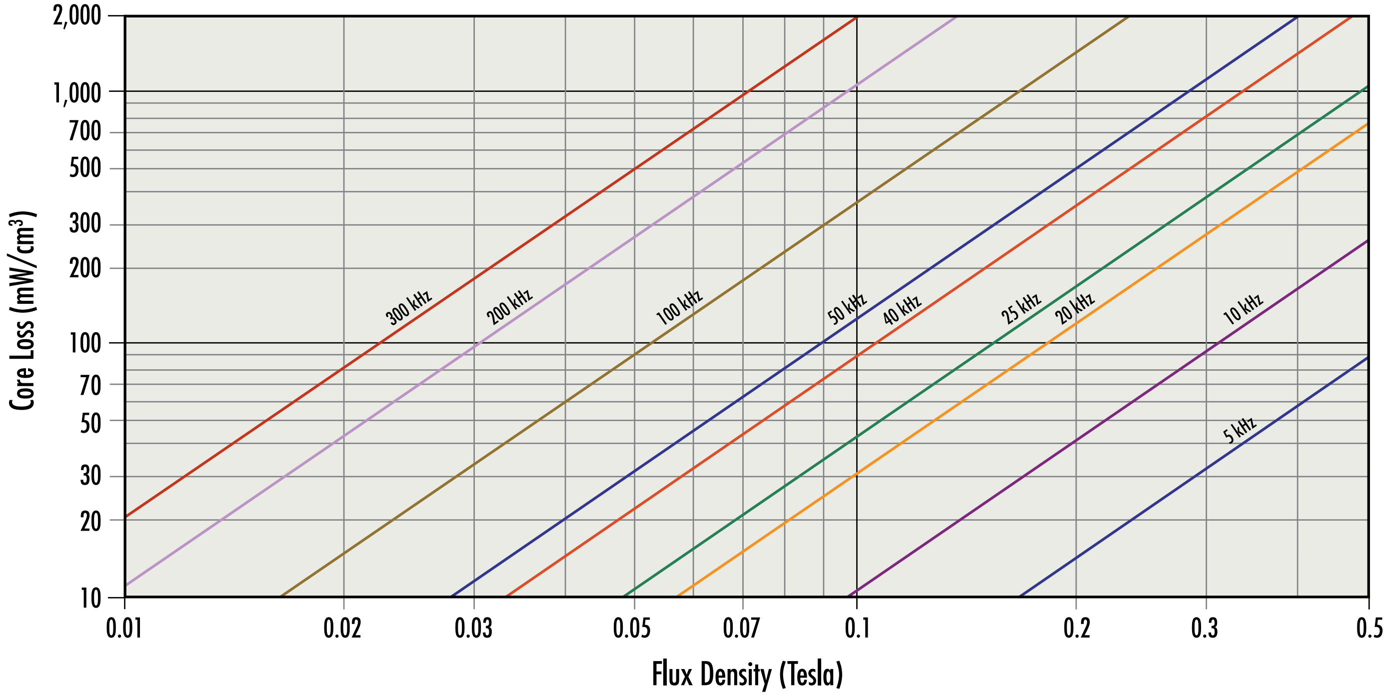


MPP Toroids 550µ

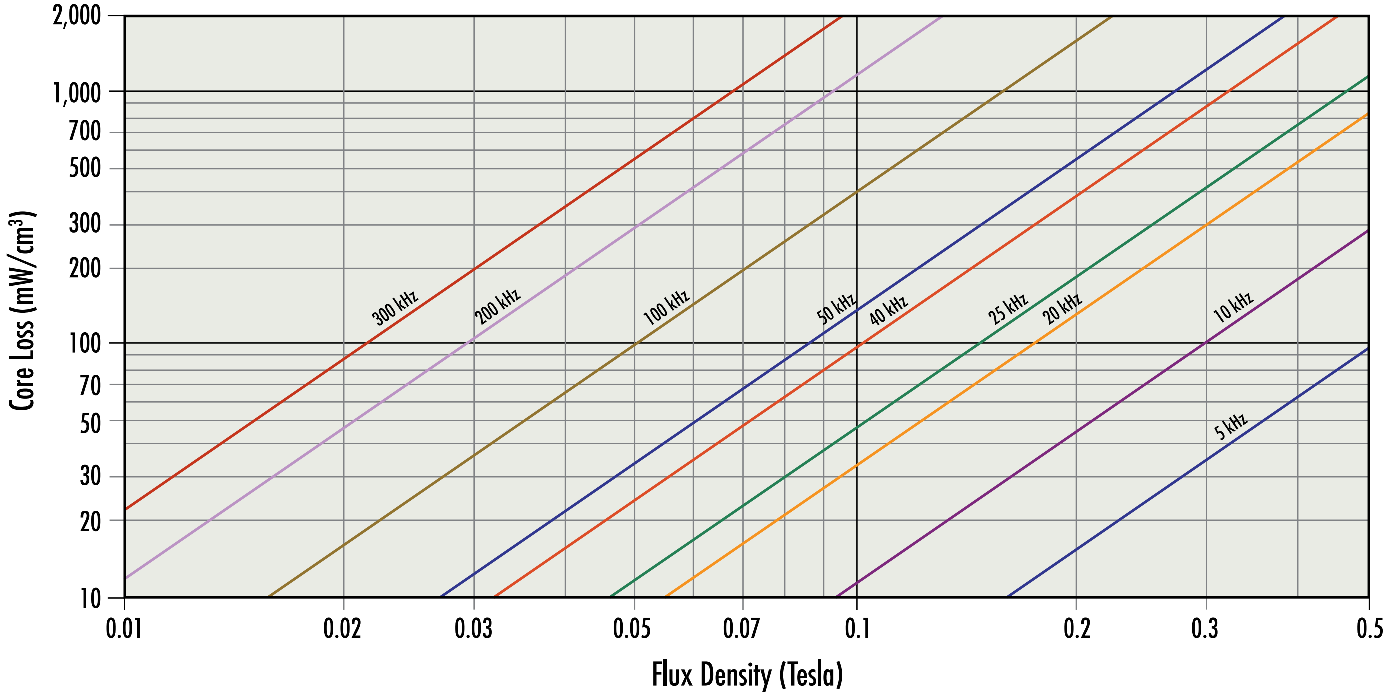


Core Loss Density Curves

Kool Mµ® E Cores, U Cores & Blocks 14µ

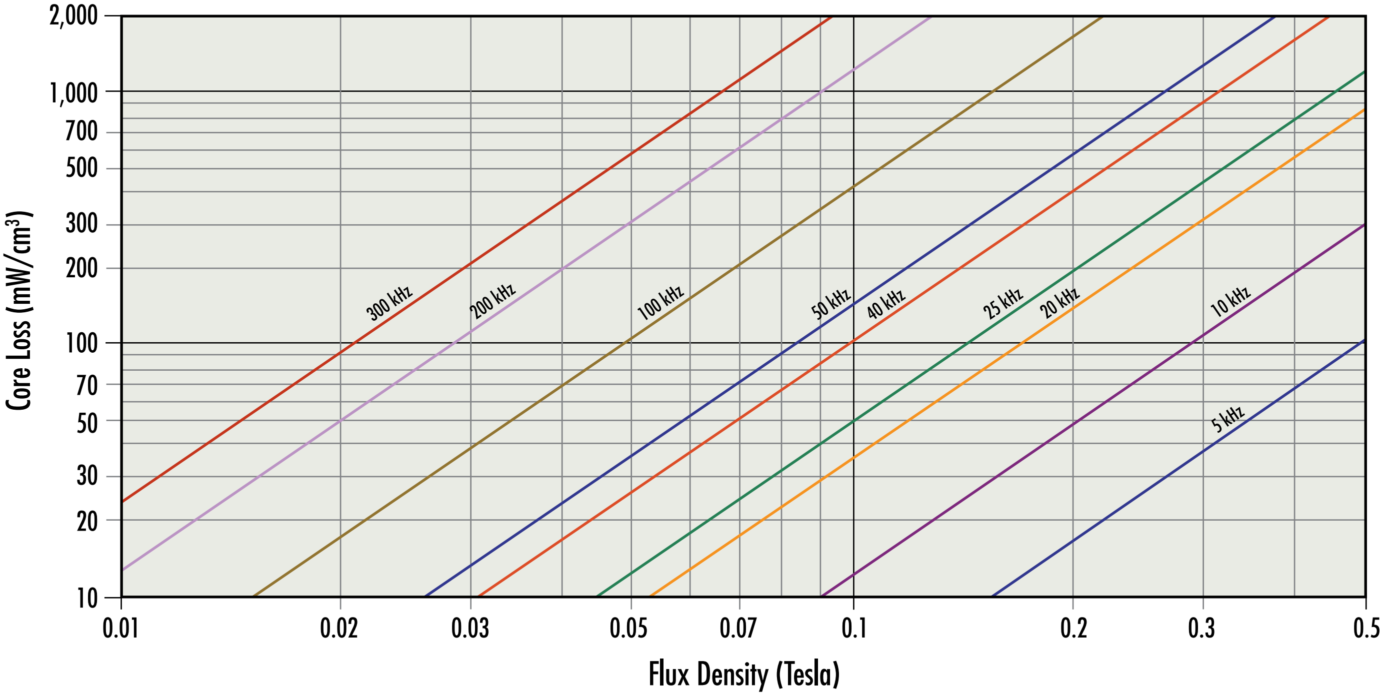


Kool Mµ® E Cores, U Cores & Blocks 26µ

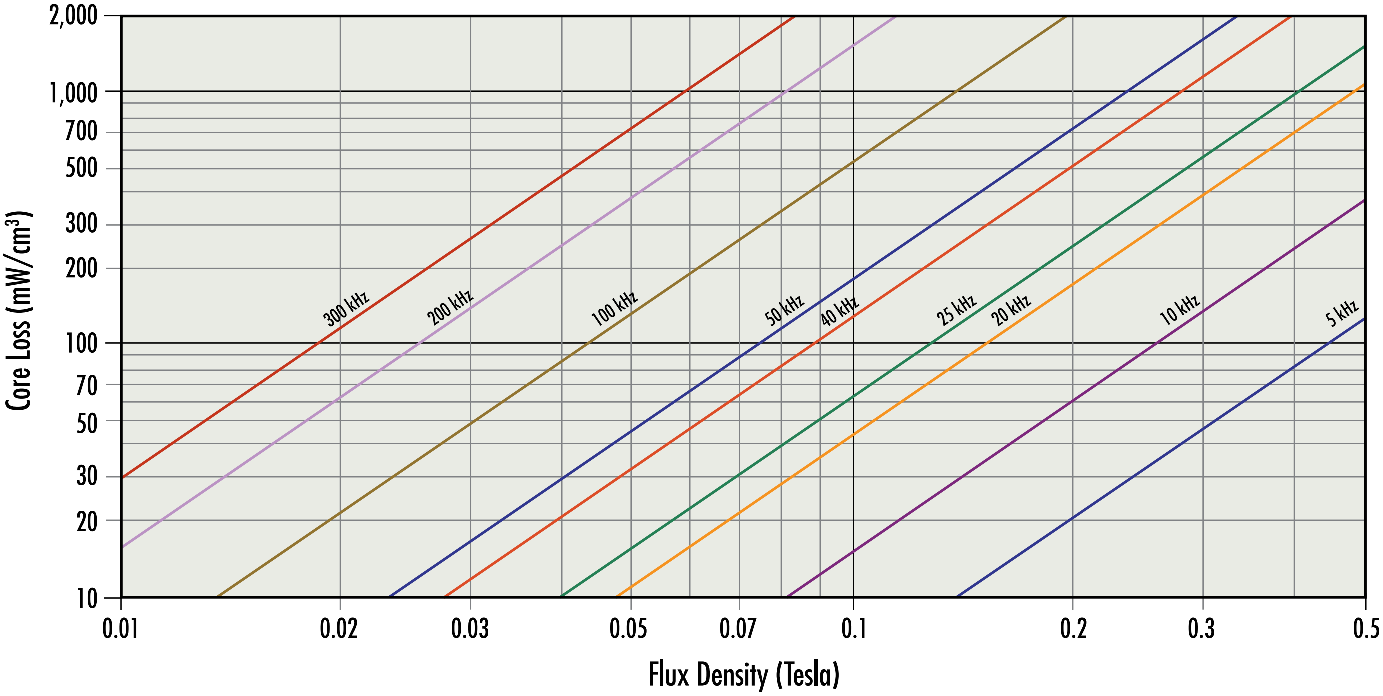


Core Loss Density Curves

Kool Mµ® E Cores, U Cores & Blocks 40µ

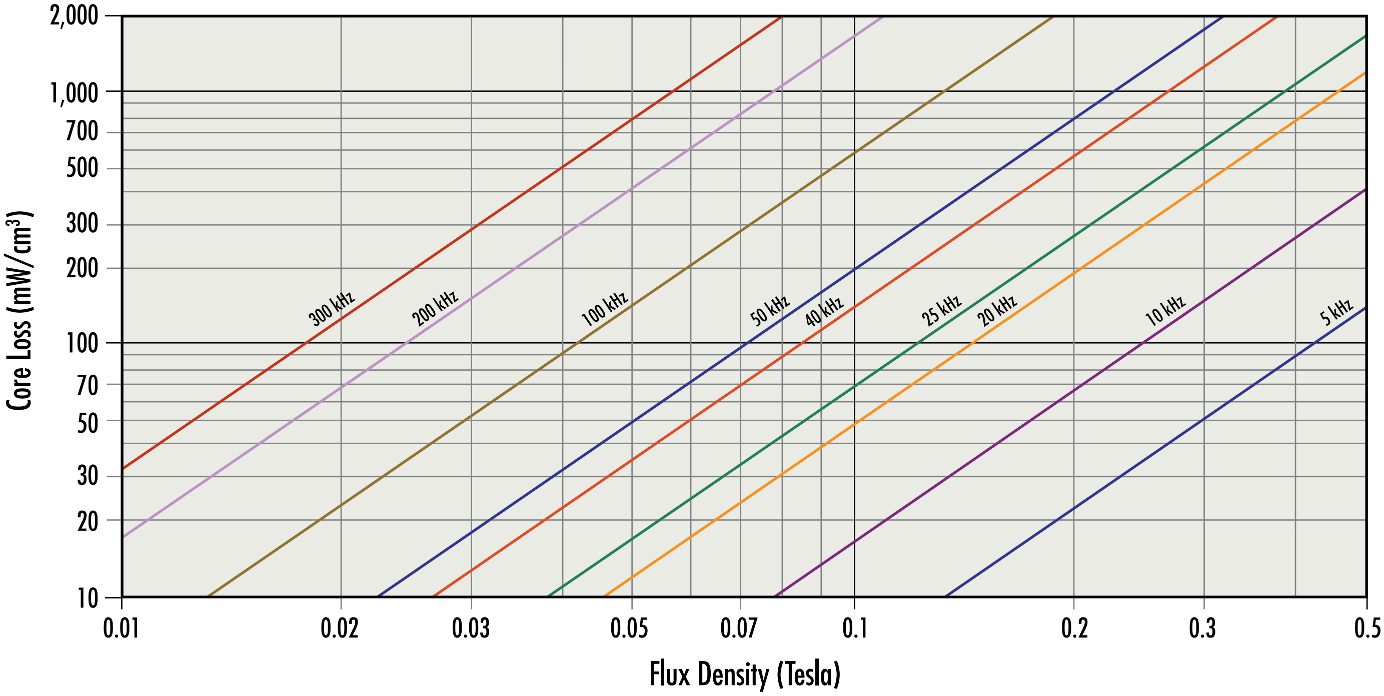


Kool Mµ® E Cores, U Cores & Blocks 60µ

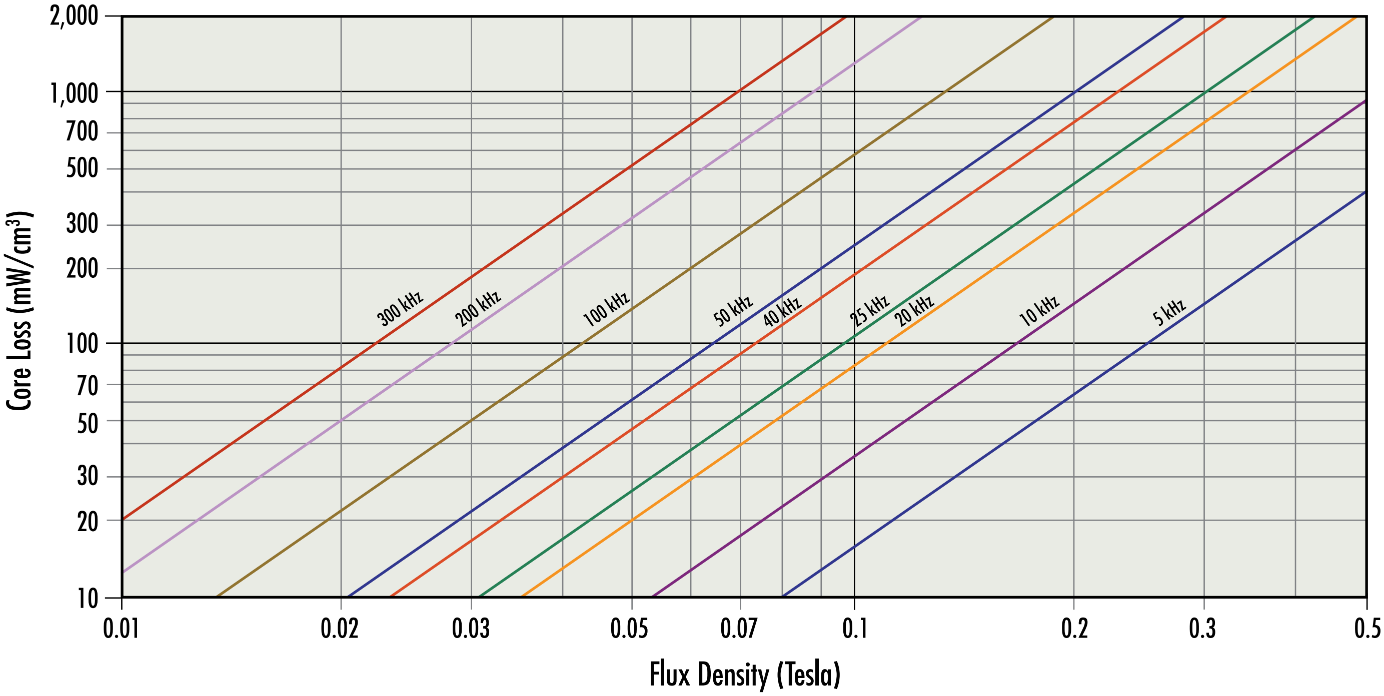


Core Loss Density Curves

Kool Mµ® E Cores, U Cores & Blocks 90µ

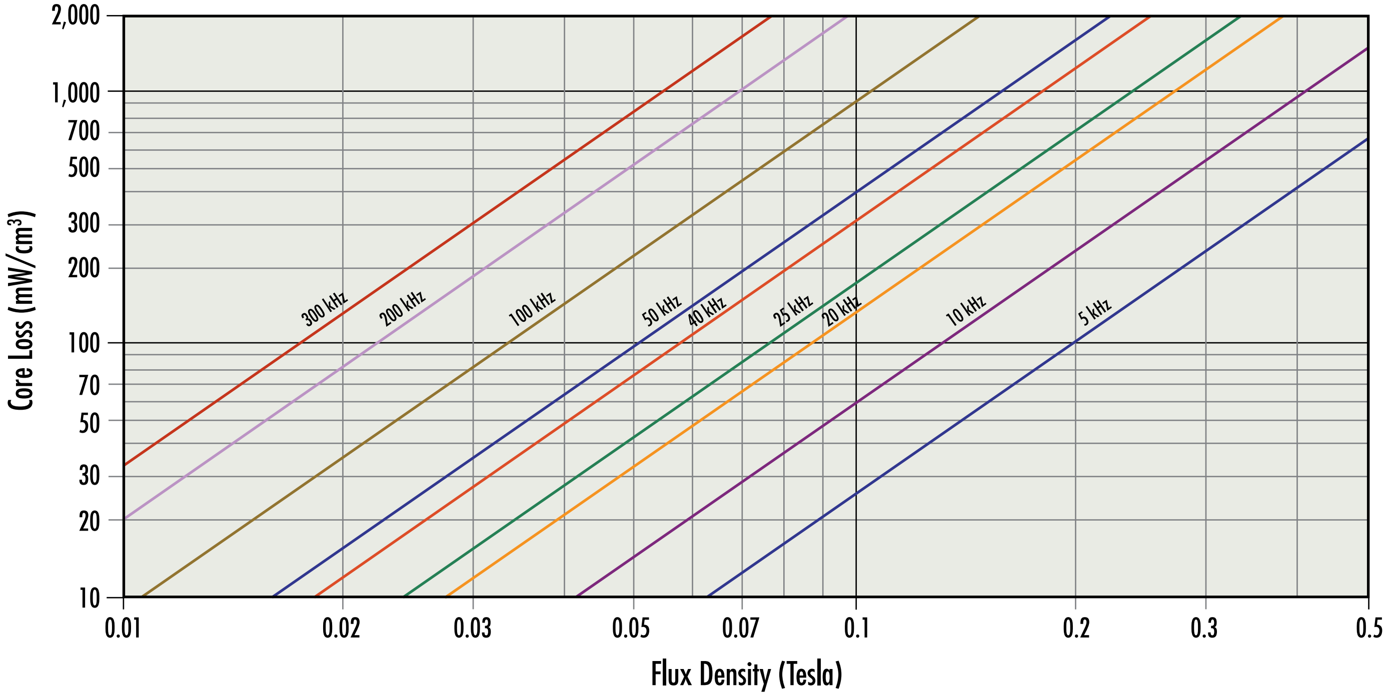


XFLUX® E Cores, U Cores & Blocks 26µ

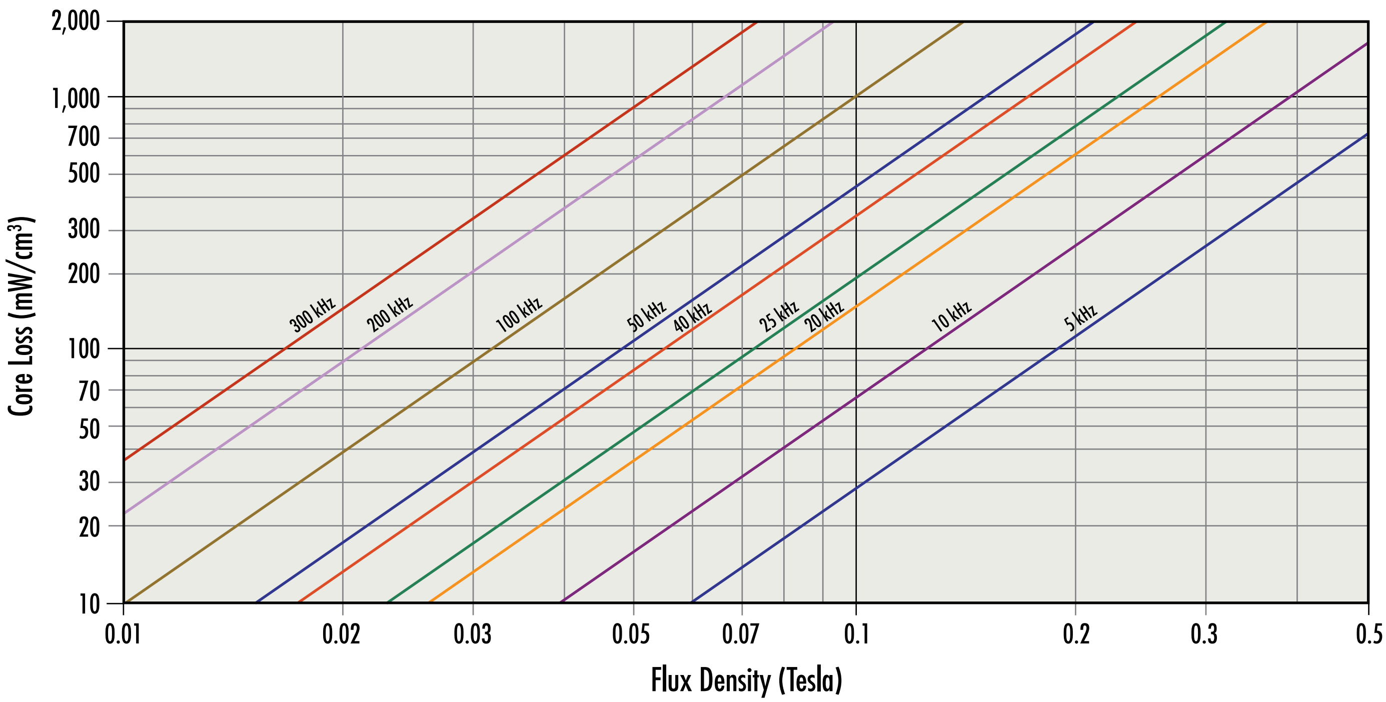


Core Loss Density Curves

XFLUX® E Cores, U Cores & Blocks 40µ

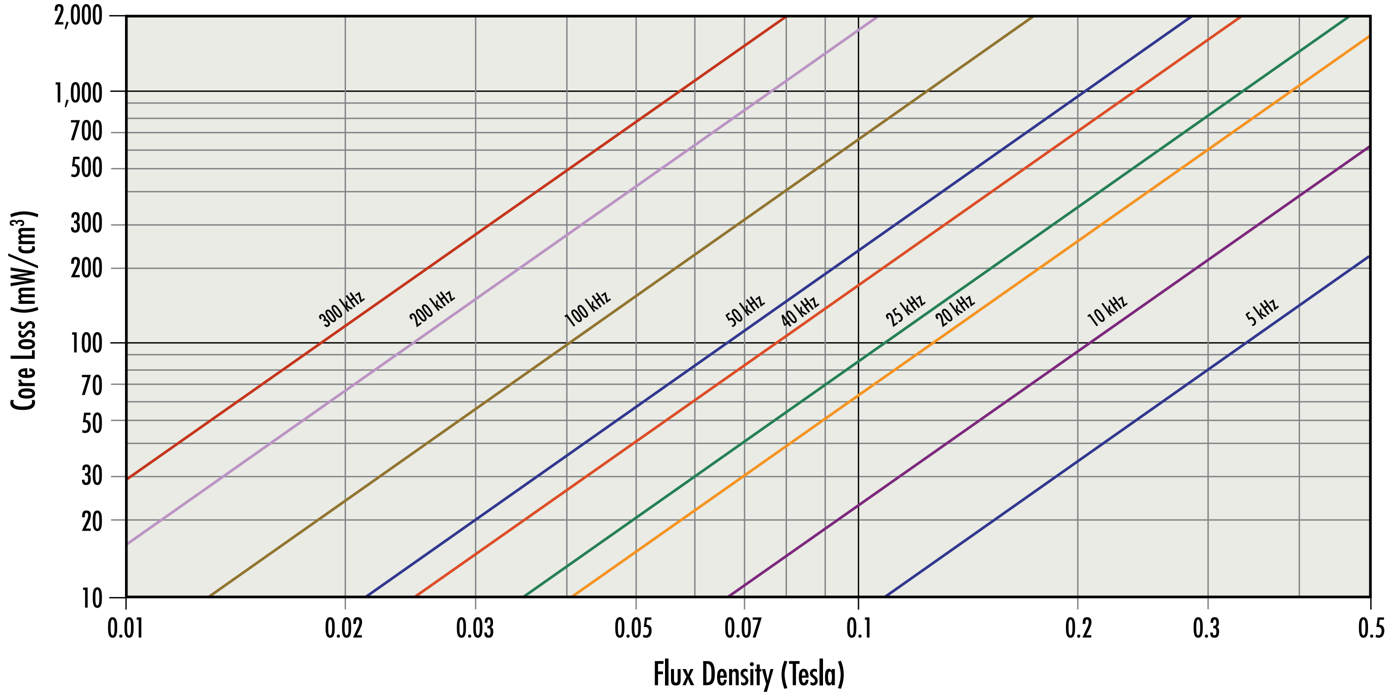


XFLUX® E Cores, U Cores & Blocks 60µ

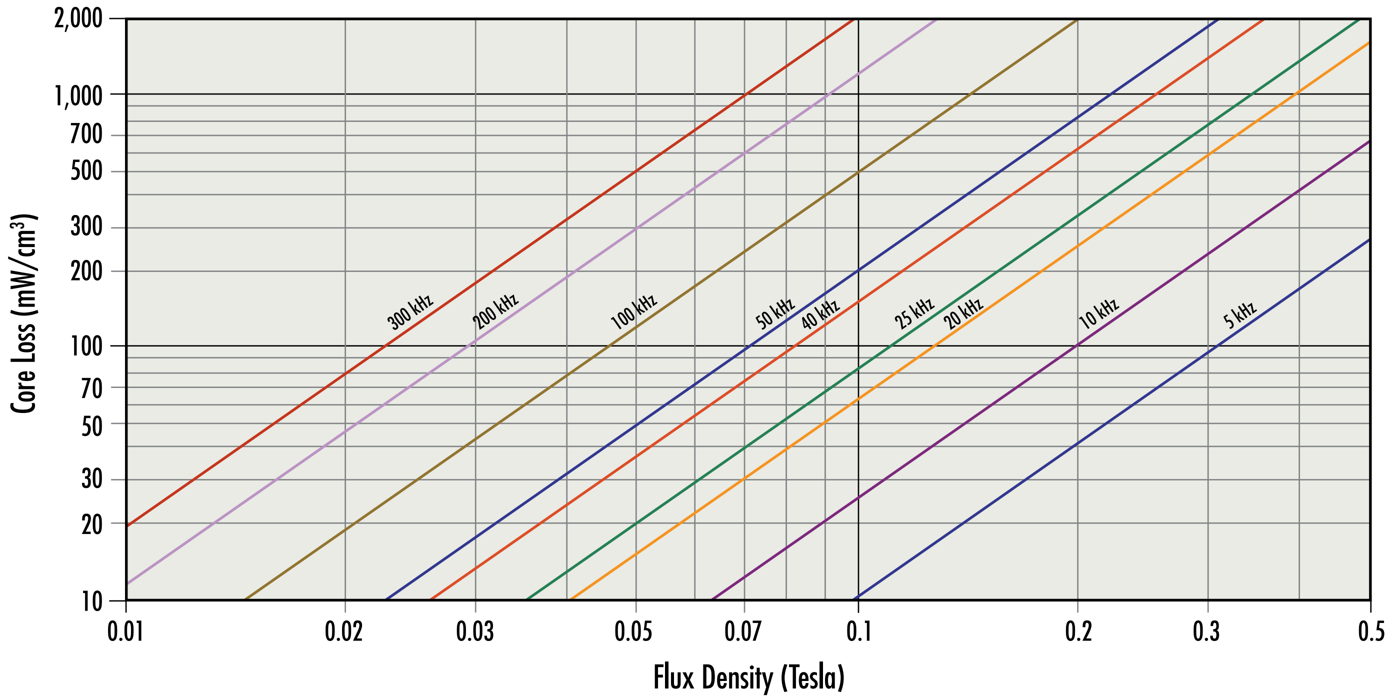


Core Loss Density Curves

Kool Mμ® EQ Cores 26μ

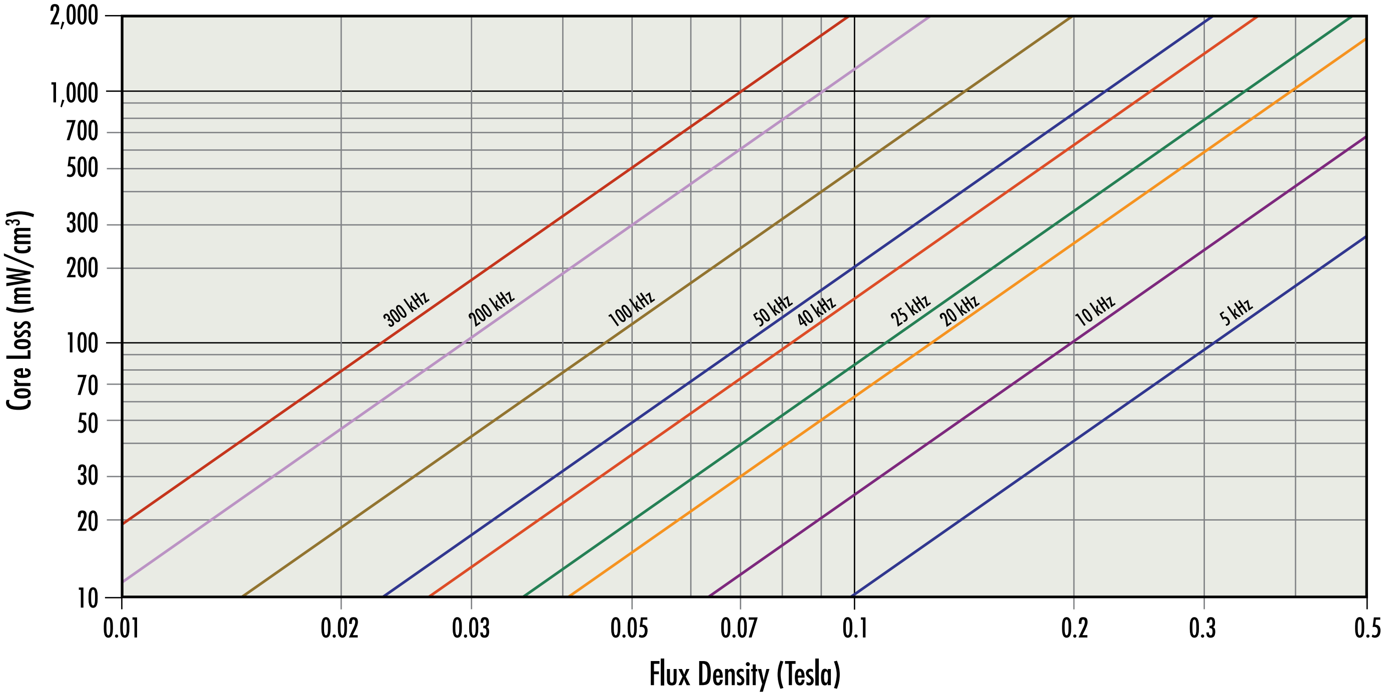


Kool Mμ® EQ Cores 40μ

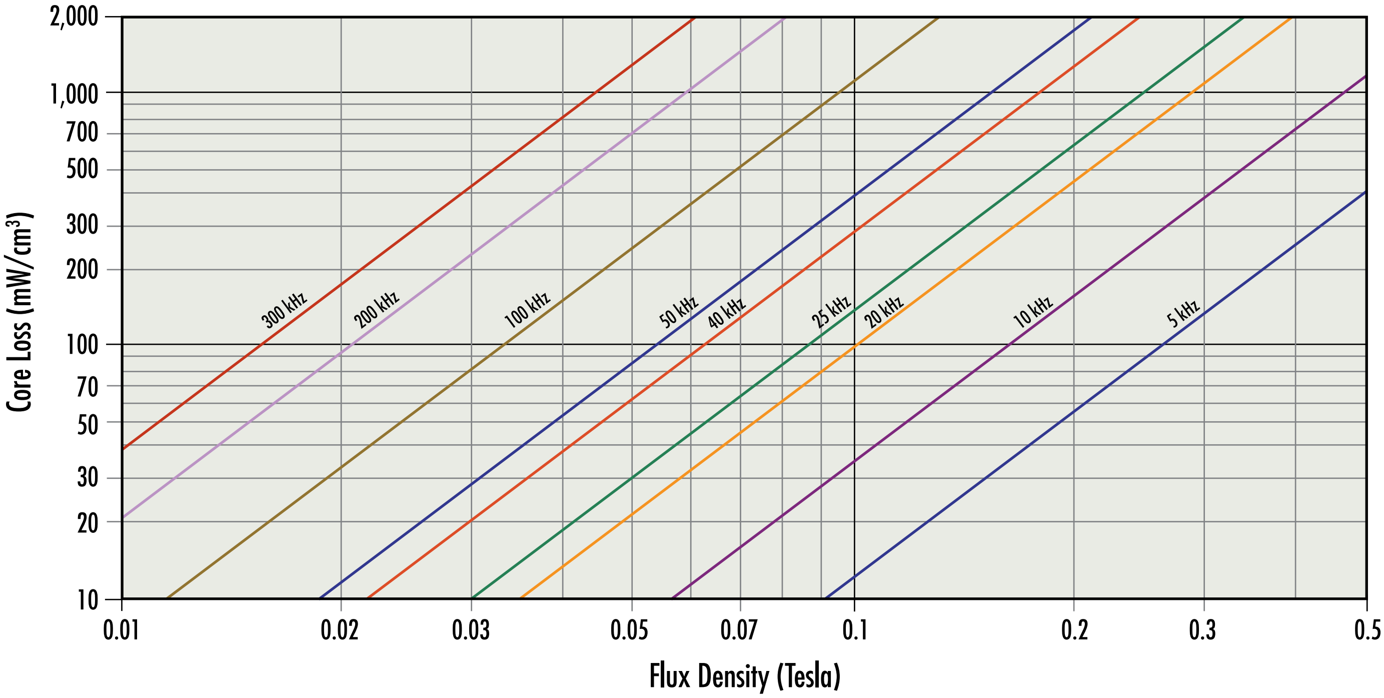


Core Loss Density Curves

Kool Mµ® EQ Cores 60µ

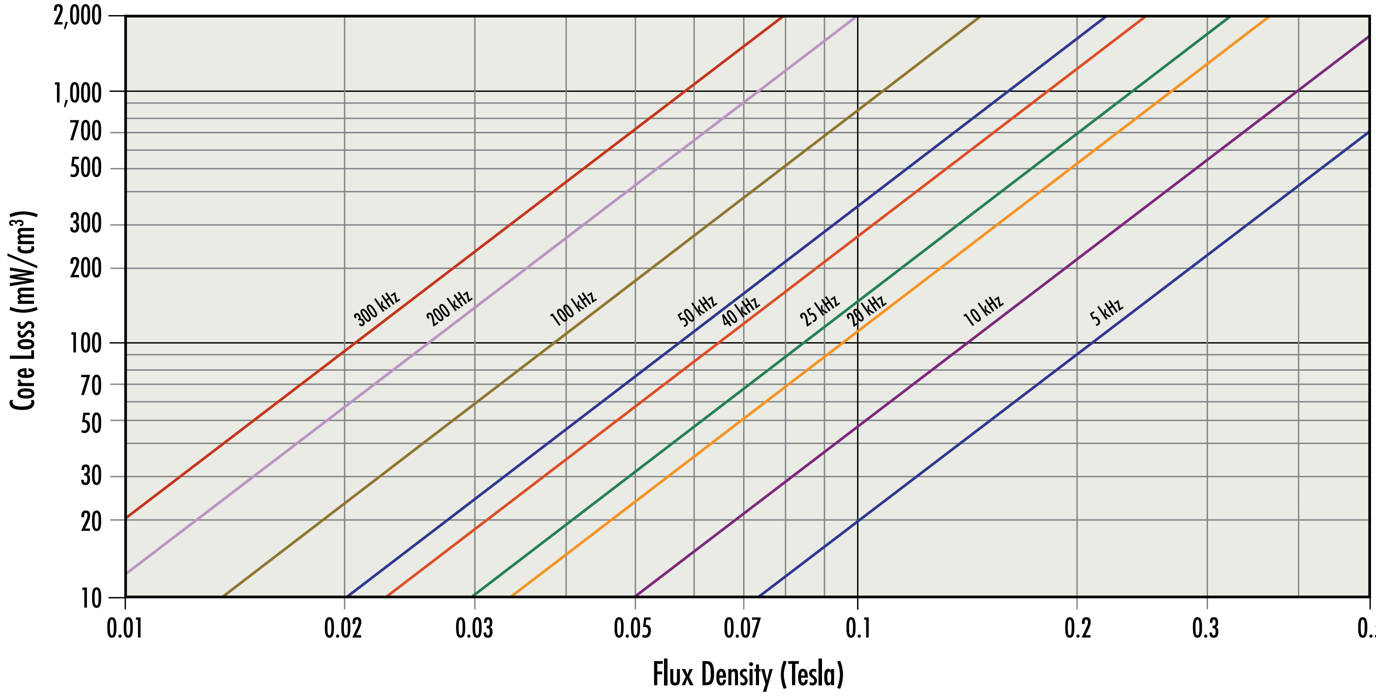


XFLUX® EQ Cores 26µ

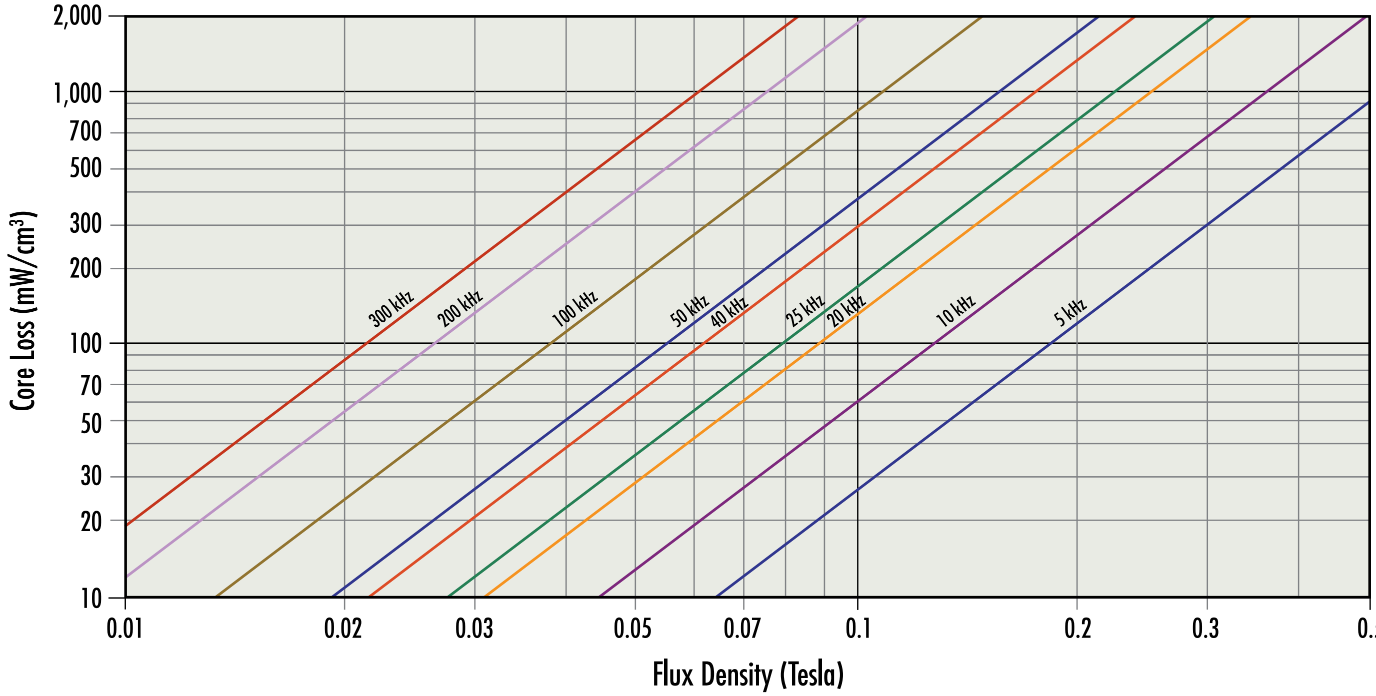


Core Loss Density Curves

XFLUX® EQ Cores 40µ

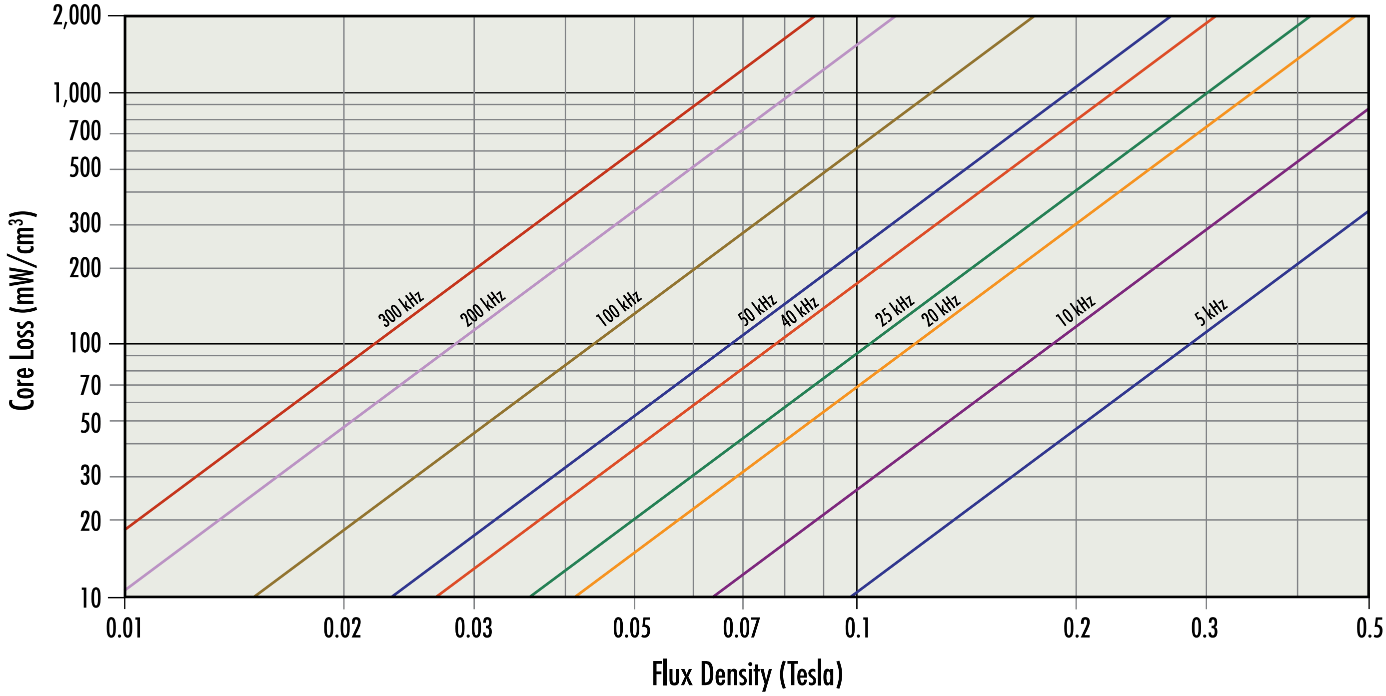


XFLUX® EQ Cores 60µ

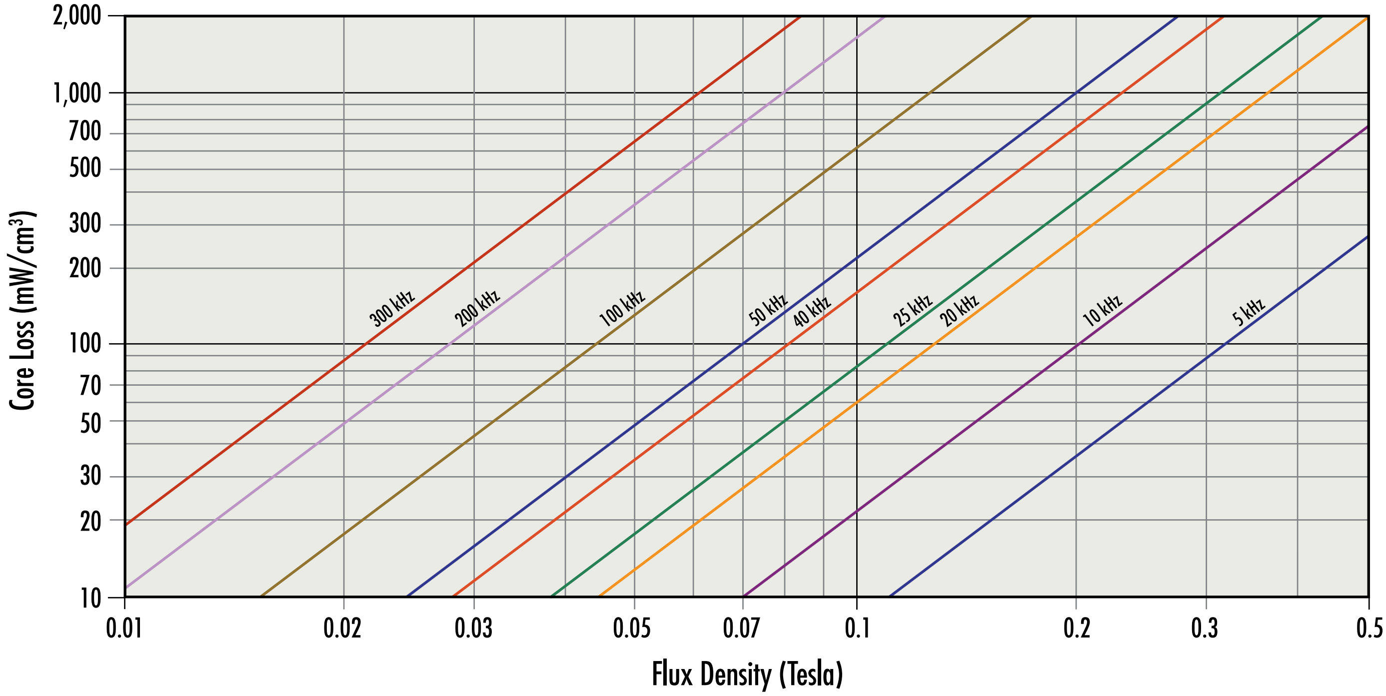


Core Loss Density Curves

High Flux EQ Cores 26µ

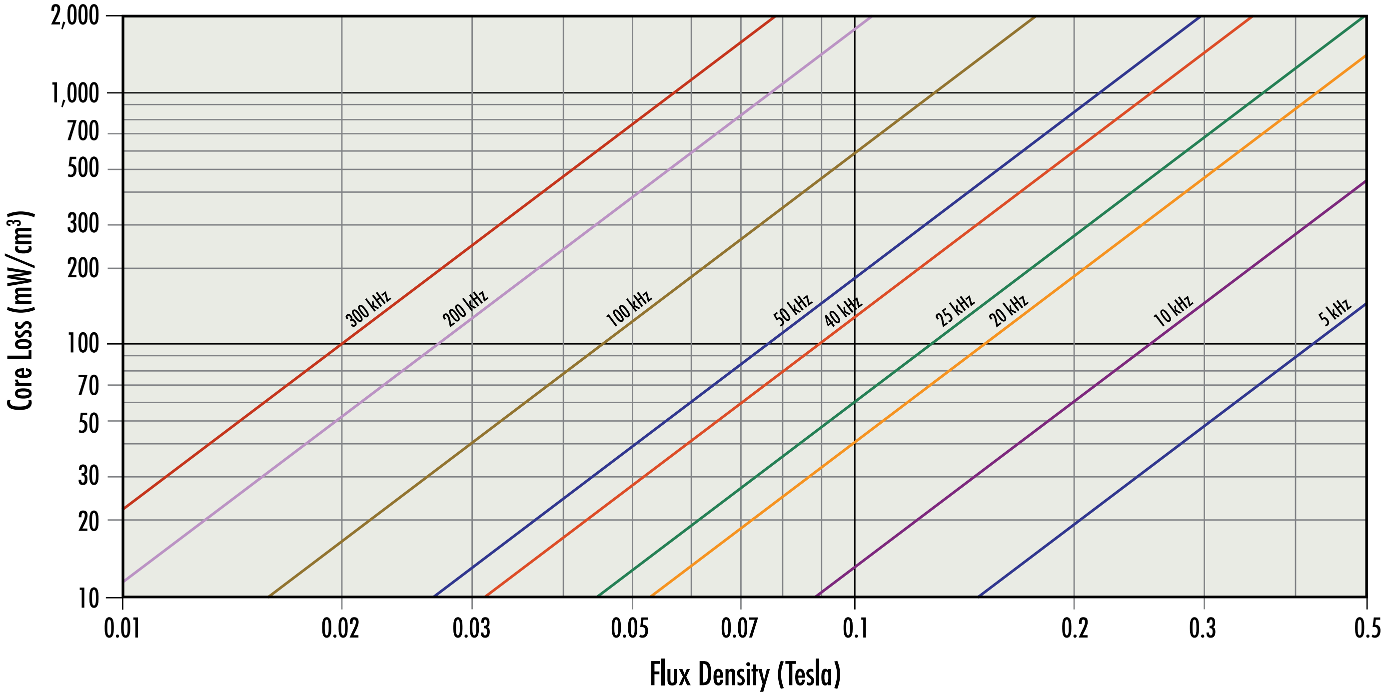


High Flux EQ Cores 40µ



Core Loss Density Curves

High Flux EQ Cores 60µ



Core Loss Density Curves

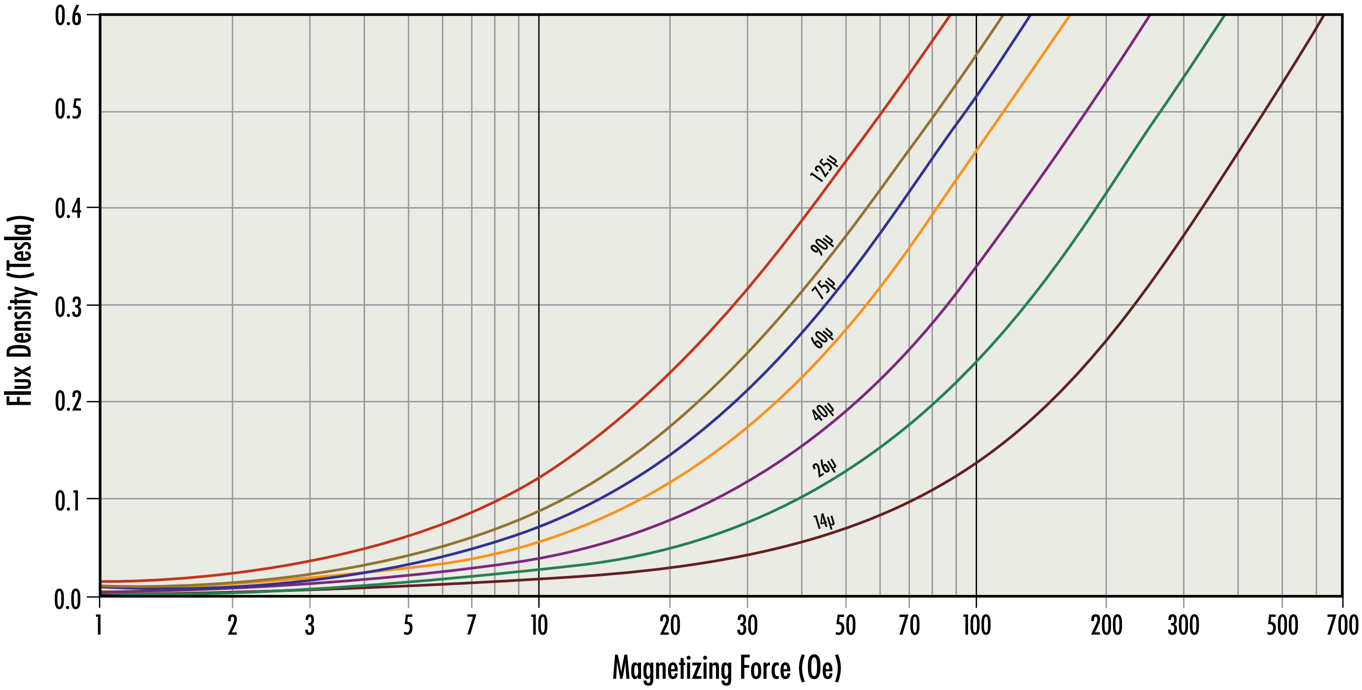
Fit Formula

$P = aB^b f^c$ where B = Tesla (T), f = kilohertz (kHz)

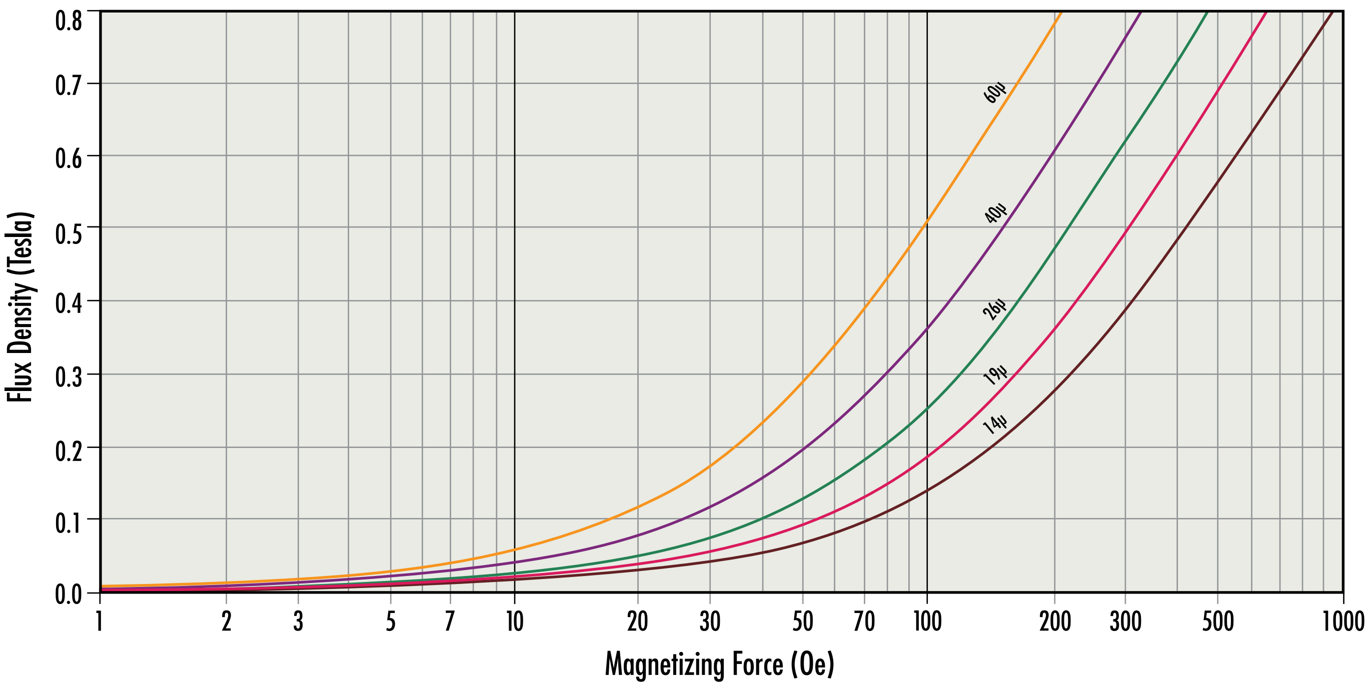
	Perm	a	b	c
Kool Mµ® Toroids	14µ	80.55	1.988	1.541
	26µ, 40µ	52.36	1.988	1.541
	60µ, 75µ, 90µ, 125µ	44.30	1.988	1.541
Kool Mµ® MAX Toroids	14µ	144.49	2.072	1.379
	19µ	128.84	2.072	1.379
	26µ, 40µ, 60µ	113.53	2.072	1.379
Kool Mµ® H*f* Toroids	26µ	32.22	1.988	1.541
	60µ	26.18	1.988	1.541
XFLUX® Toroids	19µ	509.27	2.015	1.194
	26µ, 40µ	581.54	2.015	1.194
	60µ, 75µ, 90µ, 125µ	542.77	2.015	1.194
High Flux Toroids	14µ	968.56	2.218	1.189
	26µ, 40µ	492.31	2.218	1.240
	60µ	246.54	2.218	1.311
	125µ	181.08	2.218	1.378
	147µ	405.59	2.218	1.393
	160µ	390.92	2.218	1.401
Edge™ Toroids	26µ	278.59	2.218	1.236
	60µ	181.15	2.218	1.267
MPP Toroids	14µ	266.22	2.103	1.316
	26µ	146.94	2.103	1.357
	60µ	72.15	2.103	1.449
	125µ	62.22	2.103	1.561
	147µ, 160µ, 173µ	56.51	2.103	1.598
	200µ, 300µ	53.71	2.103	1.624
	550µ	74.76	2.103	1.645
Kool Mµ® E Cores, U Cores & Blocks	14µ	29.3	1.988	1.541
	26µ	32.22	1.988	1.541
	40µ	34.23	1.988	1.541
	60µ	42.29	1.988	1.541
	90µ	46.32	1.988	1.541
XFLUX® E Cores, U Cores & Blocks	26µ	242.31	2.015	1.194
	40µ	387.69	2.015	1.194
	60µ	436.16	2.015	1.194
Kool Mµ® EQ Cores	26µ	90.40	2.044	1.451
	40µ	139.20	2.018	1.287
	60µ	137.60	2.032	1.296
XFLUX® EQ Cores	26µ	165.70	2.182	1.509
	40µ	425.80	2.209	1.250
	60µ	644.20	2.192	1.152
High Flux EQ Cores	26µ	169.80	2.165	1.357
	40µ	119.00	2.183	1.443
	60µ	47.80	2.201	1.640

DC Magnetization Curves

Kool Mµ® Toroids

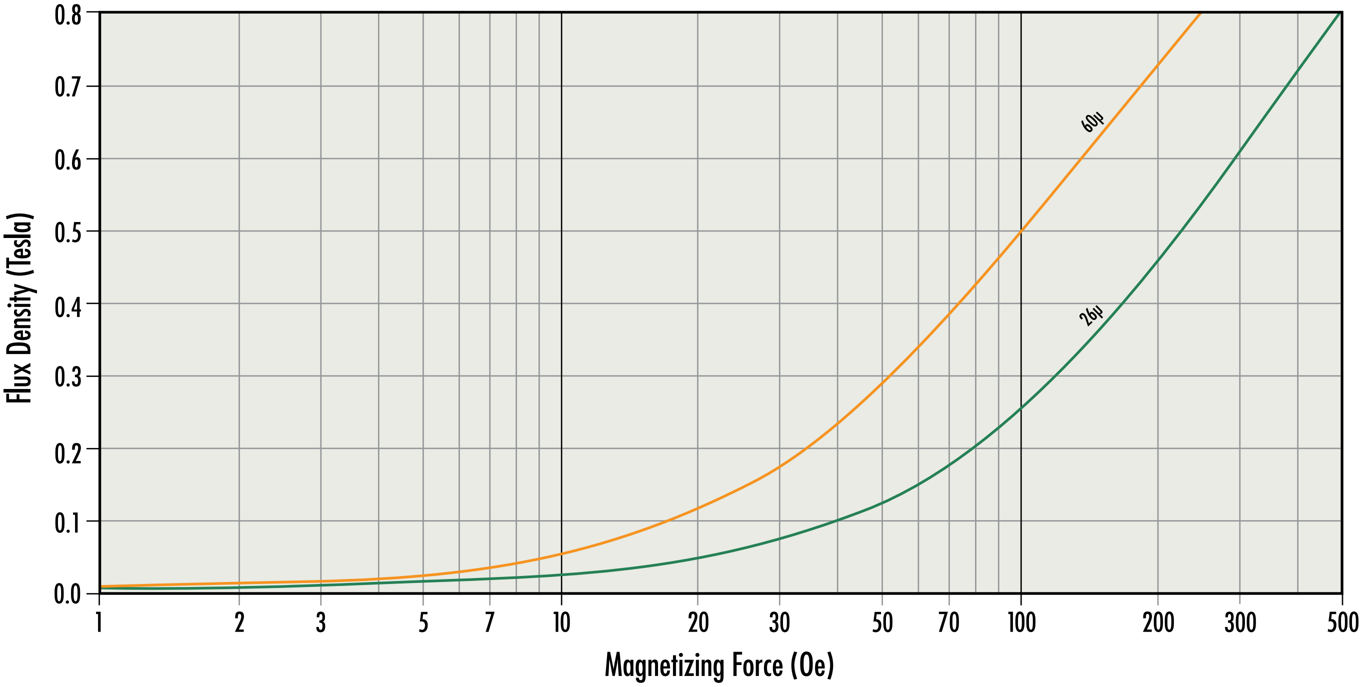


Kool Mµ® MAX Toroids

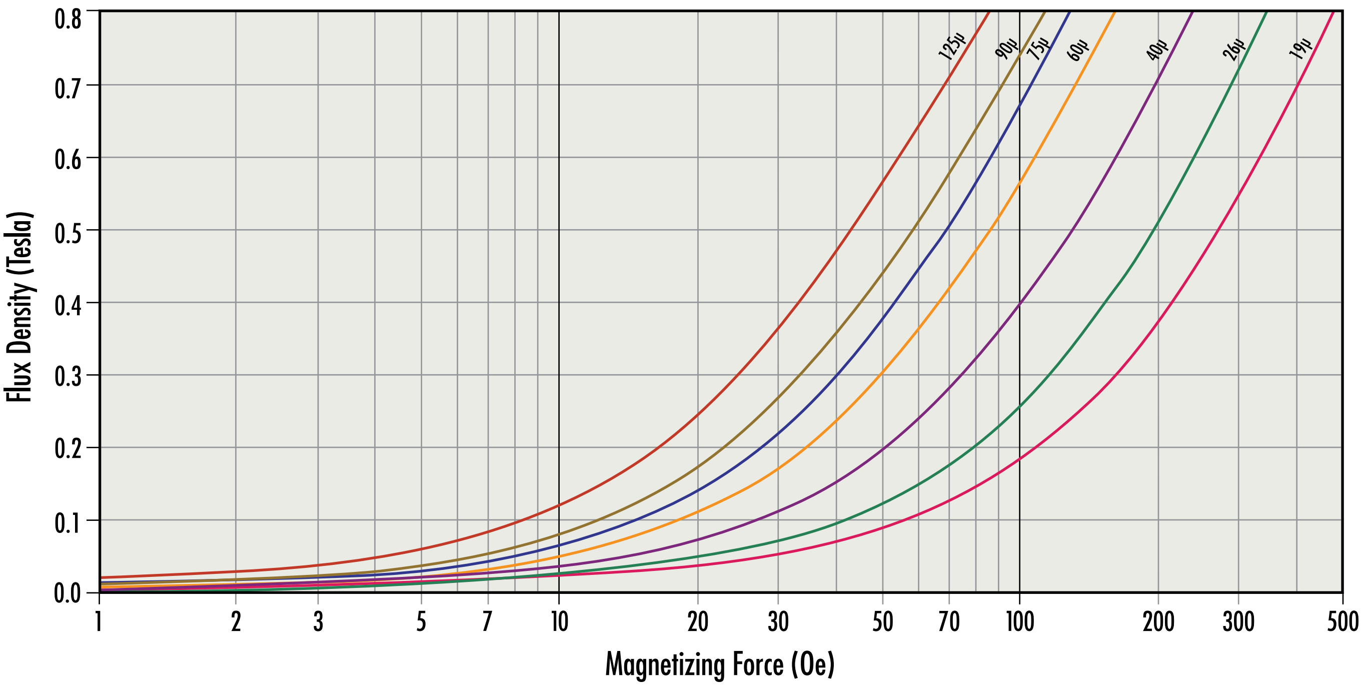


DC Magnetization Curves

Kool Mµ® H*ƒ* Toroids

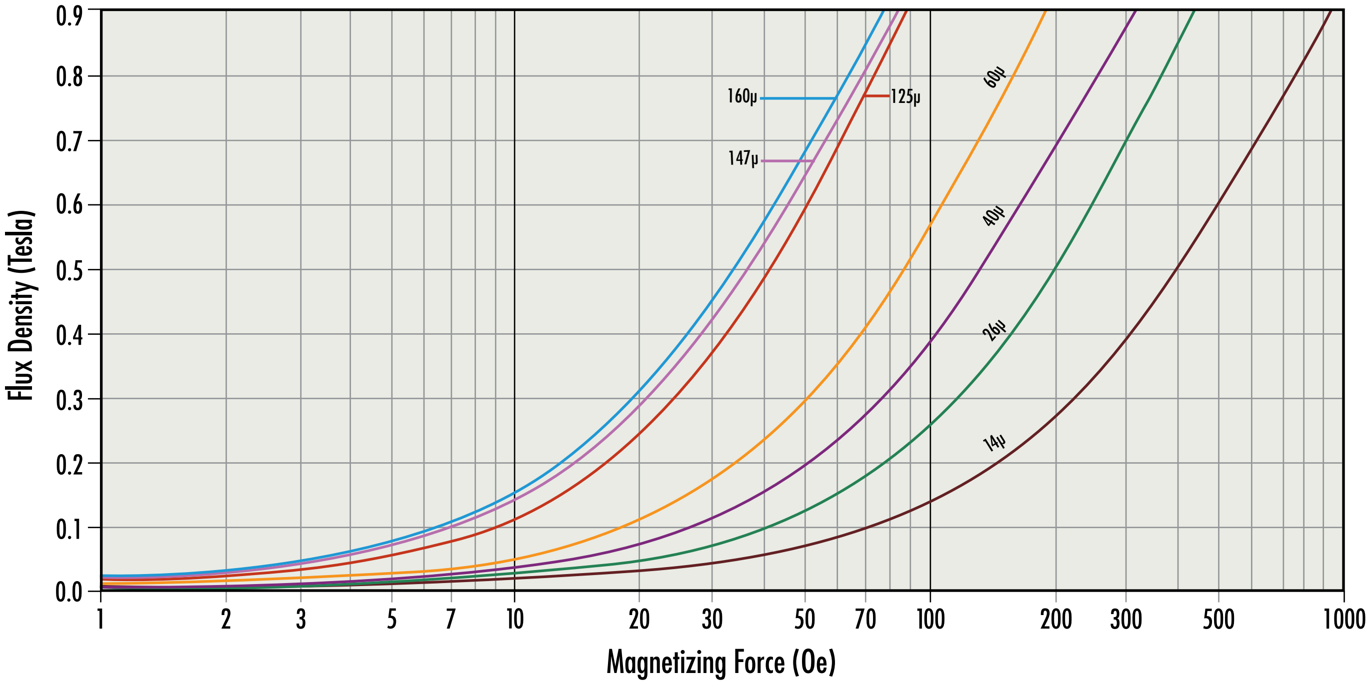


XFlux® Toroids

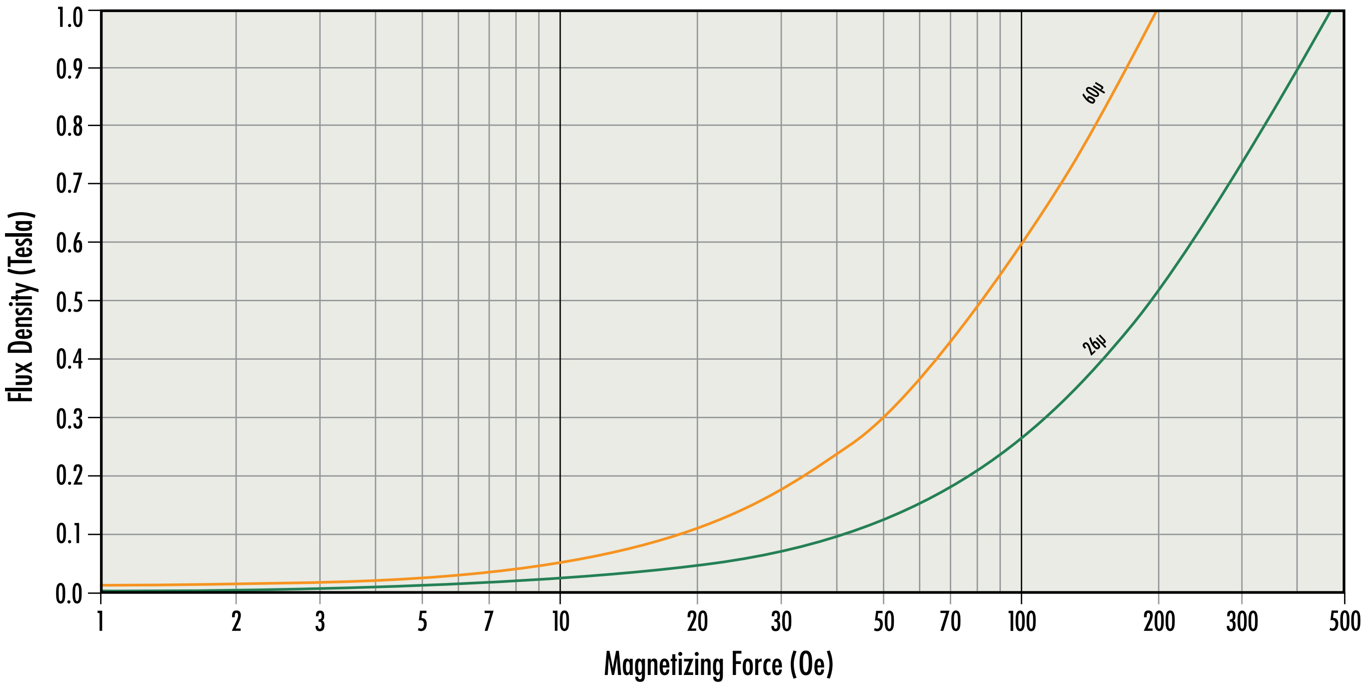


DC Magnetization Curves

High Flux Toroids

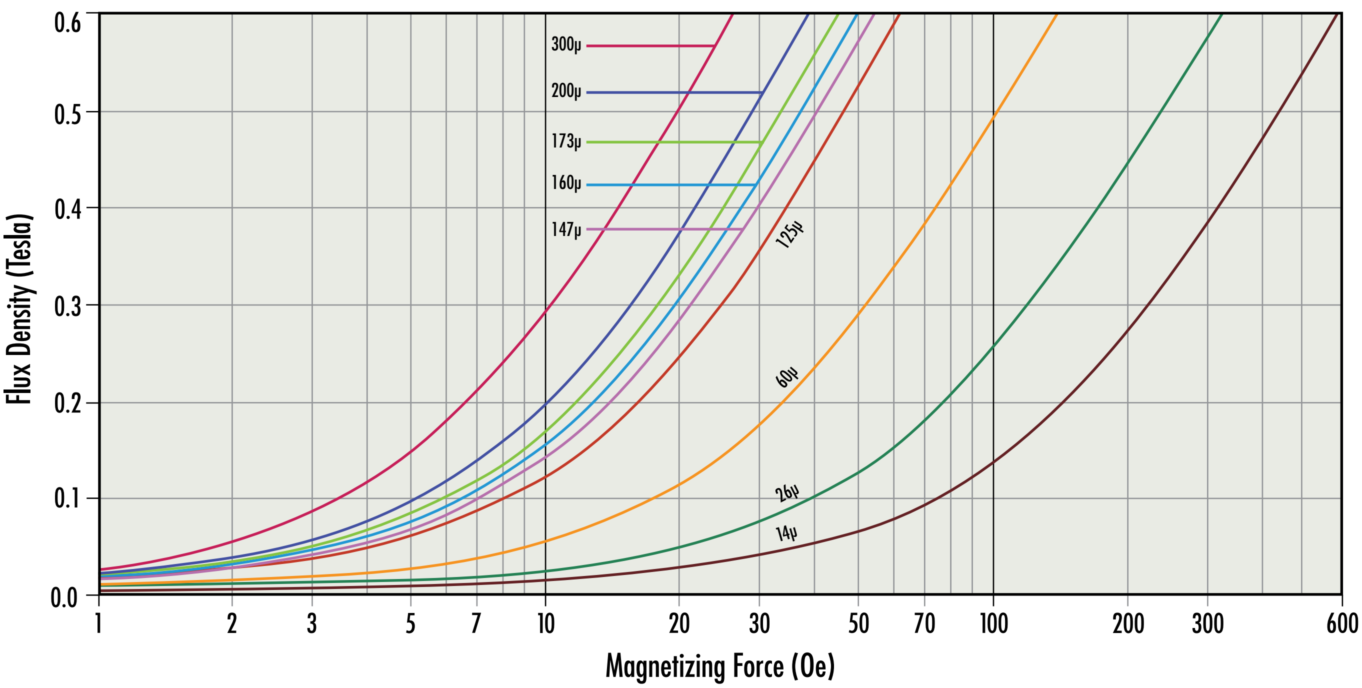


Edge™ Toroids

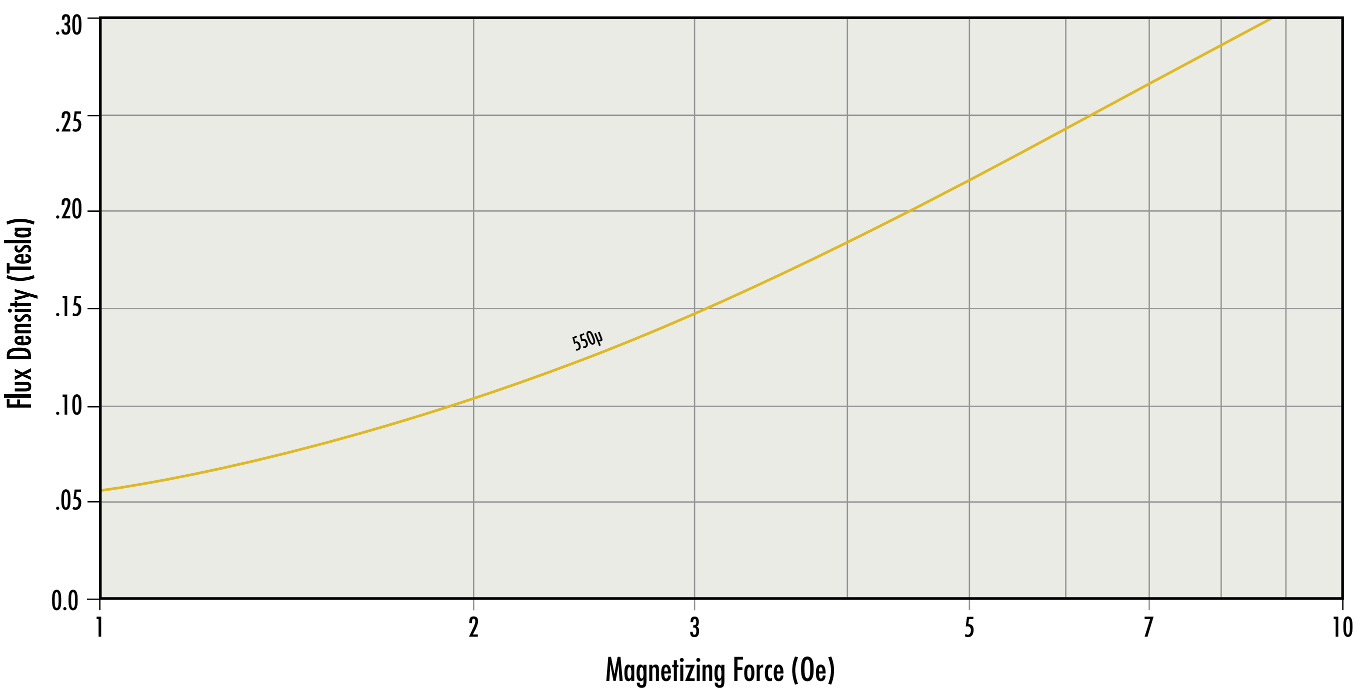


DC Magnetization Curves

MPP Toroids 14µ-300µ

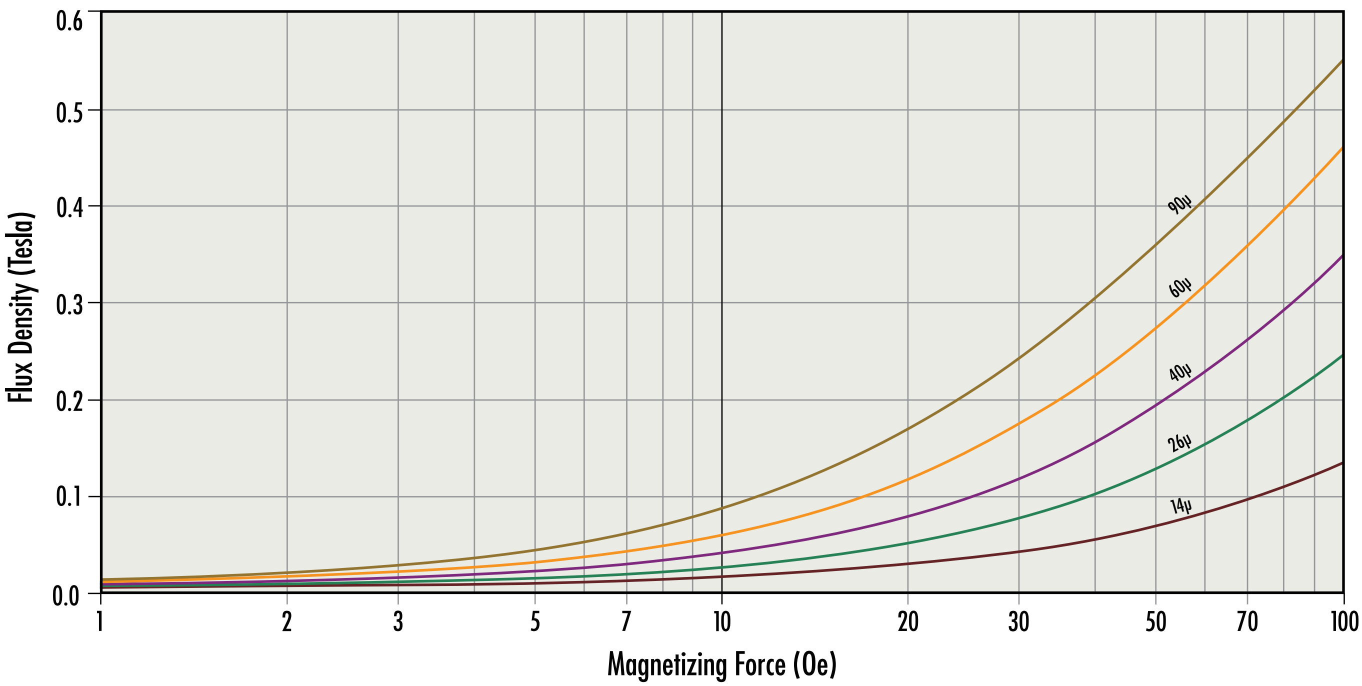


MPP Toroids 550µ

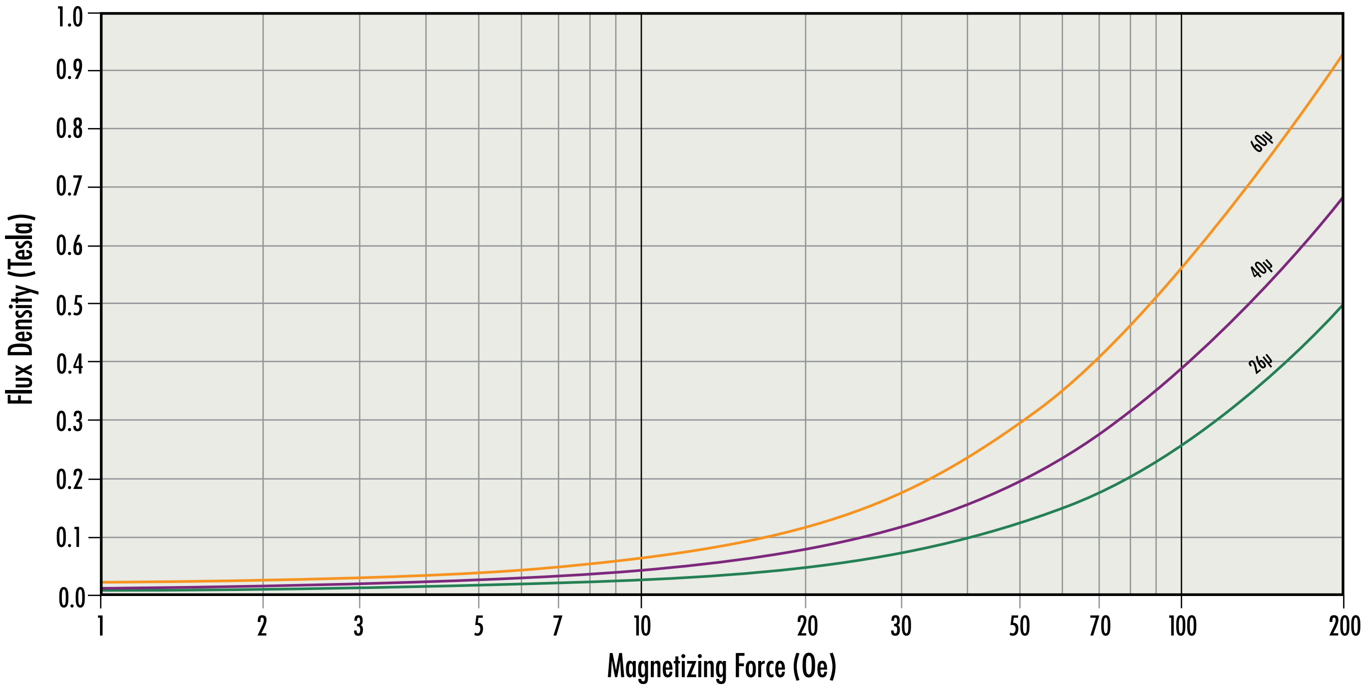


DC Magnetization Curves

Kool Mμ® E Cores, U Cores & Blocks

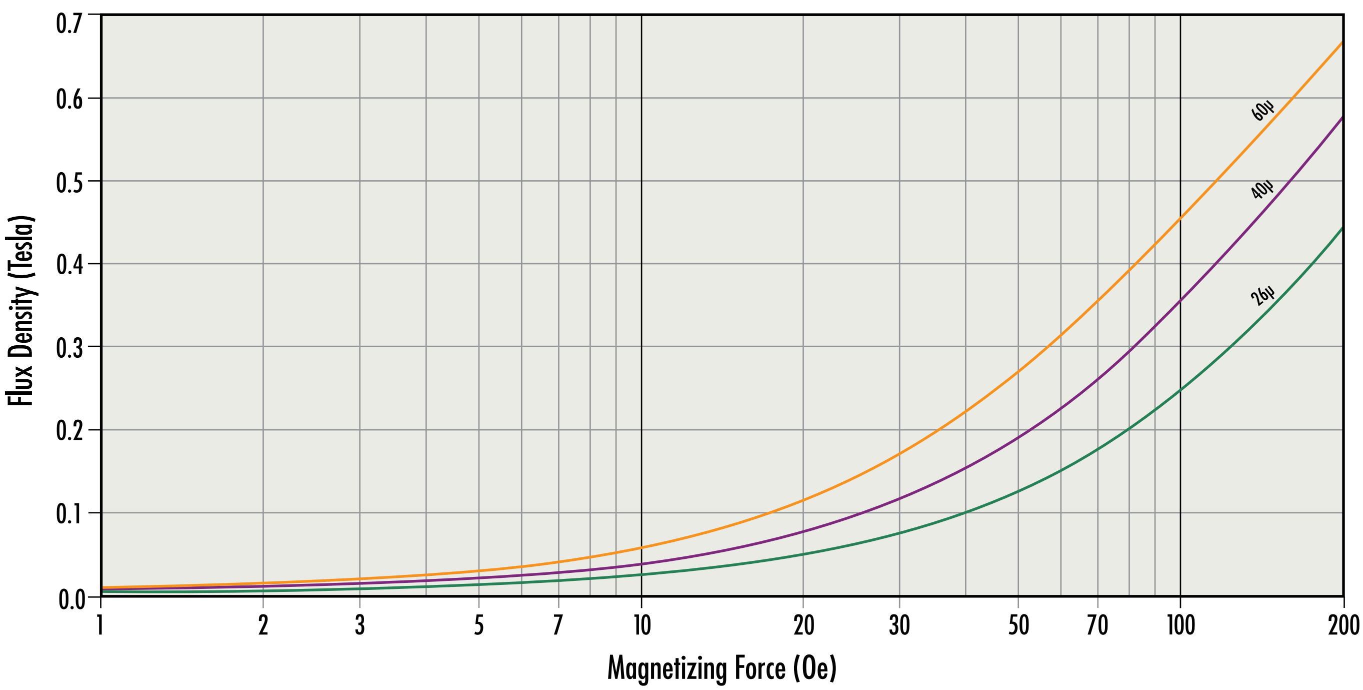


XFLUX® E Cores, U Cores & Blocks

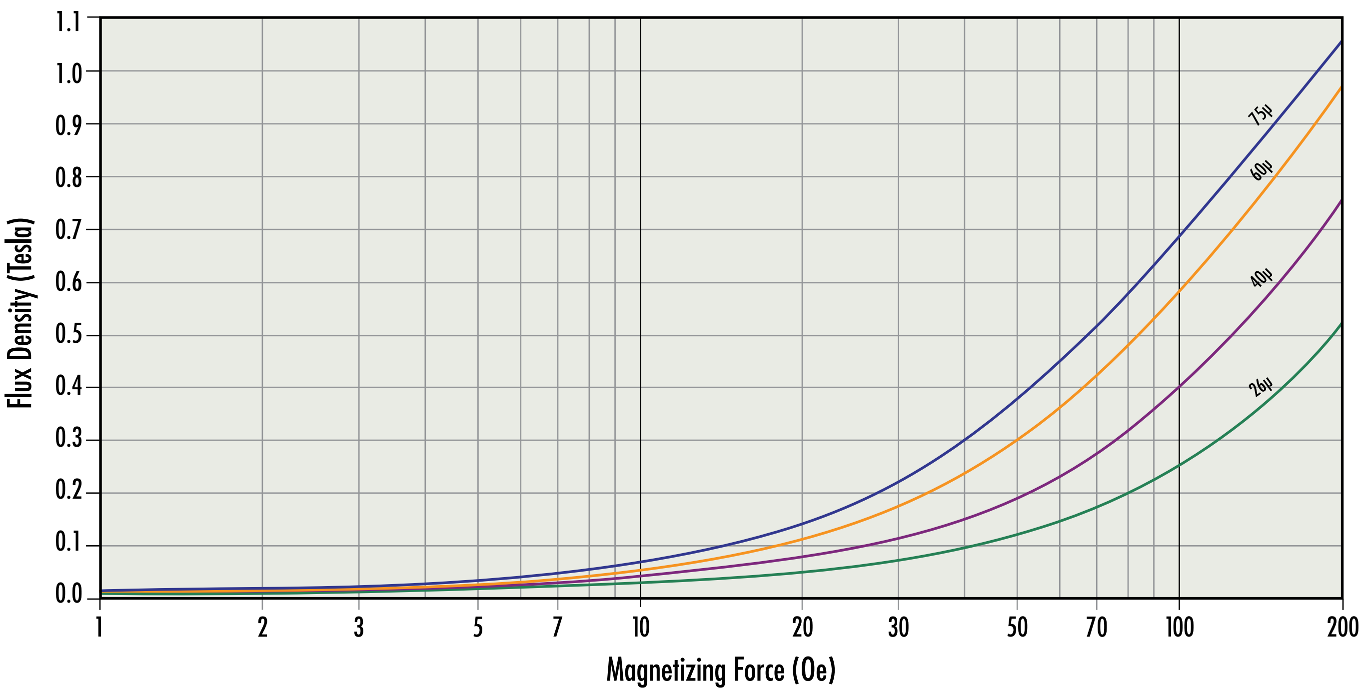


DC Magnetization Curves

Kool Mμ® EQ Cores

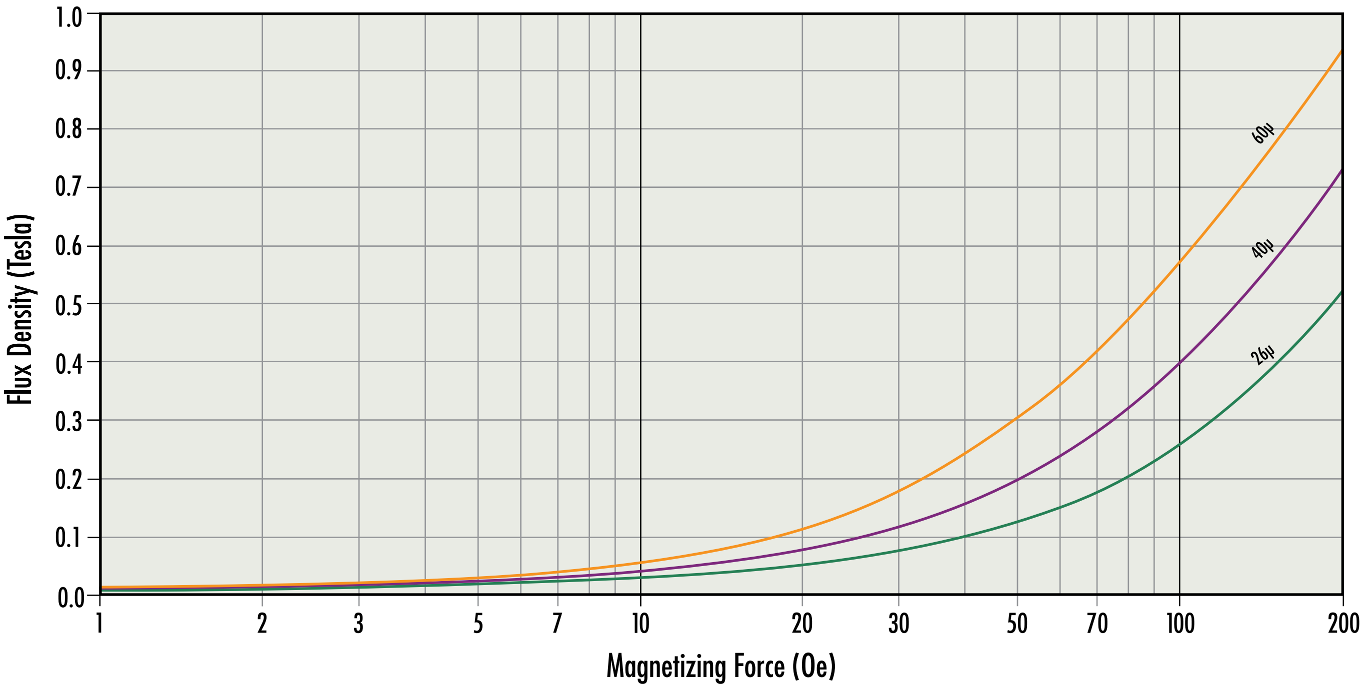


XFLUX® EQ Cores



DC Magnetization Curves

High Flux EQ Cores



DC Magnetization Curves

Fit Formula

$$B = \left[\frac{a + bH + cH^2}{1 + dH + eH^2} \right]^x$$ where B = Tesla (T), H = Oersteds (Oe)

	Perm	a	b	c	d	e	x
Kool Mμ® Toroids	14μ	3.918E-02	1.856E-02	4.812E-04	1.390E-01	4.478E-04	1.875
	26μ	3.763E-02	1.712E-02	5.155E-04	9.190E-02	4.909E-04	1.812
	40μ	3.789E-02	1.632E-02	5.355E-04	7.365E-02	5.110E-04	1.665
	60μ	3.601E-02	1.721E-02	5.401E-04	5.624E-02	5.156E-04	1.577
	75μ	3.111E-02	2.286E-02	5.343E-04	5.568E-02	4.982E-04	1.614
	90μ	2.965E-02	2.538E-02	5.142E-04	5.305E-02	4.867E-04	1.578
	125μ	2.730E-02	2.946E-02	5.038E-04	5.274E-02	4.639E-04	1.471
Kool Mμ® MAX Toroids	14μ	3.945E-02	1.922E-02	4.882E-04	1.430E-01	4.217E-04	1.895
	19μ	3.915E-02	1.866E-02	5.237E-04	1.225E-01	4.368E-04	1.859
	26μ	6.405E-02	1.572E-02	5.541E-04	9.685E-02	4.568E-04	1.813
	40μ	3.810E-02	1.720E-02	5.982E-04	8.225E-02	4.852E-04	1.684
	60μ	3.589E-02	1.862E-02	6.201E-04	6.341E-02	4.897E-04	1.630
Kool Mμ® Hƒ Toroids	26μ	5.241E-02	1.534E-02	5.564E-04	9.843E-02	4.635E-04	1.770
	60μ	3.621E-02	1.674E-02	5.950E-04	5.718E-02	5.134E-04	1.599
XFlux® Toroids	19μ	3.986E-02	2.164E-02	5.311E-04	1.504E-01	3.344E-04	1.783
	26μ	4.042E-02	2.042E-02	5.962E-04	1.164E-01	3.934E-04	1.872
	40μ	5.119E-02	1.602E-02	6.640E-04	9.034E-02	4.405E-04	1.679
	60μ	3.880E-02	1.648E-02	6.982E-04	6.611E-02	4.705E-04	1.623
	75μ	4.142E-02	1.414E-02	7.119E-04	5.584E-02	4.648E-04	1.461
	90μ	3.621E-02	1.987E-02	6.675E-04	4.921E-02	4.657E-04	1.542
	125μ	3.814E-02	1.729E-02	6.277E-04	3.363E-02	4.649E-04	1.307
High Flux Toroids	14μ	3.981E-02	2.174E-02	4.745E-04	1.733E-01	3.407E-04	1.749
	26μ	3.969E-02	1.964E-02	5.931E-04	1.163E-01	4.025E-04	1.828
	40μ	3.900E-02	1.717E-02	6.527E-04	8.595E-02	4.671E-04	1.725
	60μ	3.828E-02	1.800E-02	7.012E-04	7.063E-02	4.502E-04	1.630
	125μ	3.790E-02	2.126E-02	7.080E-04	4.139E-02	4.223E-04	1.433
	147μ	3.498E-02	2.404E-02	6.777E-04	3.915E-02	4.373E-04	1.366
	160μ	3.413E-02	2.449E-02	6.798E-04	3.699E-02	4.411E-04	1.326
Edge™ Toroids	26μ	4.247E-02	2.153E-02	6.192E-04	1.157E-01	4.154E-04	1.951
	60μ	4.753E-02	1.352E-02	7.586E-04	7.251E-02	4.368E-04	1.538
MPP Toroids	14μ	3.918E-02	1.824E-02	4.911E-04	1.331E-01	4.502E-04	1.938
	26μ	5.340E-02	1.144E-02	5.419E-04	8.772E-02	5.000E-04	1.699
	60μ	3.933E-02	1.371E-02	5.727E-04	5.100E-02	5.216E-04	1.528
	125μ	3.423E-02	2.092E-02	5.477E-04	3.371E-02	4.941E-04	1.364
	147μ	2.888E-02	2.651E-02	5.290E-04	3.462E-02	5.025E-04	1.396
	160μ	2.843E-02	2.738E-02	5.121E-04	3.243E-02	5.052E-04	1.365
	173μ	2.933E-02	2.707E-02	4.917E-04	2.795E-02	5.130E-04	1.325
	200μ	2.257E-02	3.252E-02	5.097E-04	3.170E-02	5.225E-04	1.316
	300μ	2.880E-03	5.179E-02	5.787E-04	4.904E-02	5.100E-04	1.254
	550μ	1.681E-03	7.555E-02	1.118E-10	9.743E-02	1.754E-03	1.100

DC Magnetization Curves

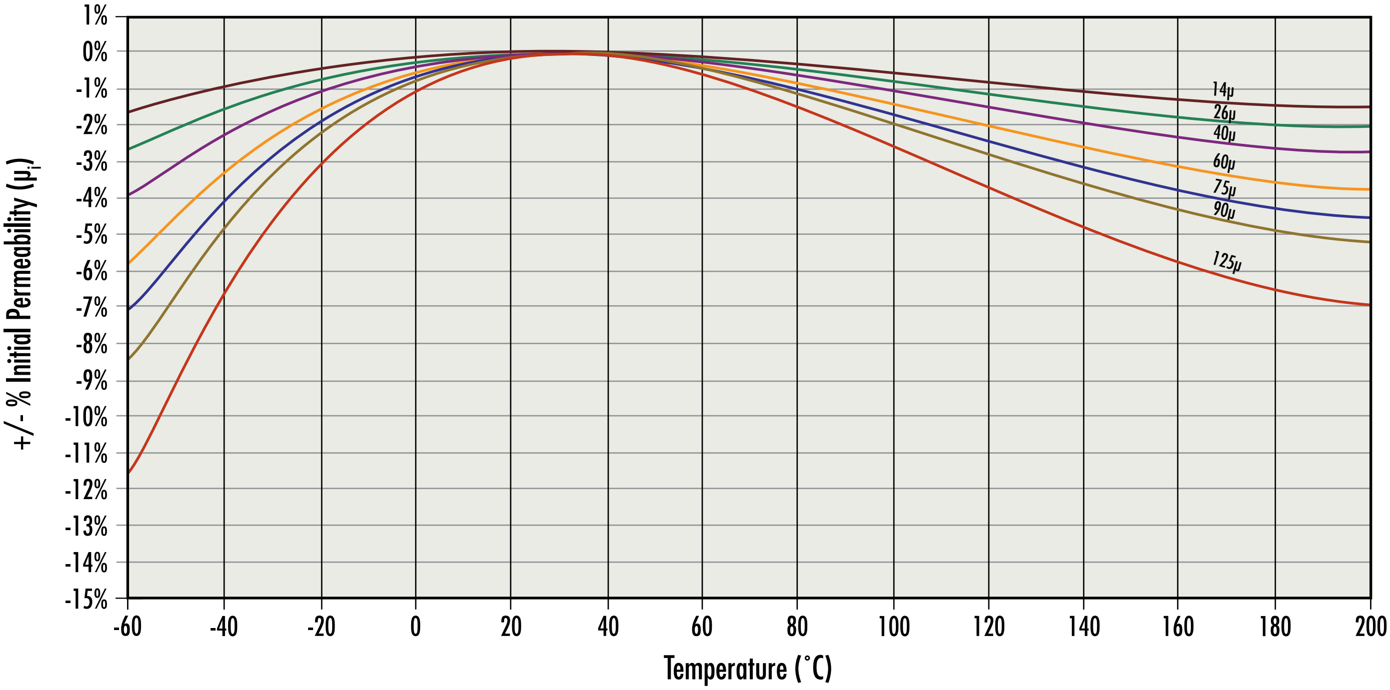
Fit Formula

$$B = \left[\frac{a + bH + cH^2}{1 + dH + eH^2}\right]^x$$ where B = Tesla (T), H = Oersteds (Oe)

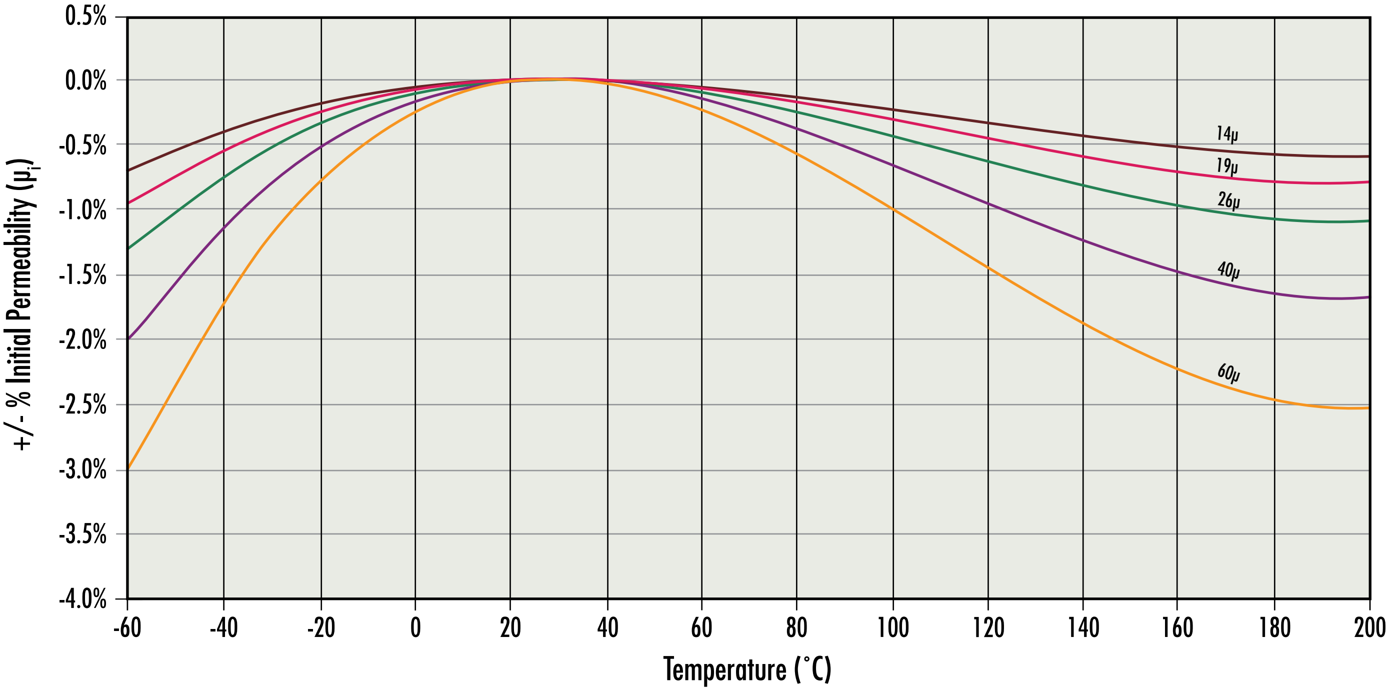
	Perm	a	b	c	d	e	x
Kool Mµ® E Cores, U Cores & Blocks	14µ	5.216E-02	1.507E-02	4.323E-04	1.036E-01	5.174E-04	1.952
	26µ	2.710E-02	9.151E-03	4.036E-04	7.636E-02	3.986E-04	1.515
	40µ	4.990E-02	1.537E-02	5.792E-04	7.263E-02	5.542E-04	1.689
	60µ	4.286E-02	1.787E-02	6.044E-04	6.335E-02	5.529E-04	1.586
	90µ	3.157E-02	2.186E-02	6.059E-04	5.720E-02	5.696E-04	1.476
XFlux® E Cores, U Cores & Blocks	26µ	1.126E-01	2.161E-02	4.759E-04	8.359E-02	3.582E-04	2.224
	40µ	1.318E-01	2.607E-02	7.203E-04	8.601E-02	5.547E-04	2.245
	60µ	9.021E-02	1.098E-02	5.520E-05	1.094E-02	3.781E-05	1.642
Kool Mµ® EQ Cores	26µ	4.488E-02	1.747E-02	5.106E-04	9.447E-02	4.342E-04	1.822
	40µ	4.831E-02	1.637E-02	5.832E-04	7.751E-02	5.059E-04	1.692
	60µ	4.286E-02	1.787E-02	6.044E-04	6.335E-02	5.529E-04	1.587
XFlux® EQ Cores	26µ	5.323E-02	1.676E-02	5.699E-04	1.331E-01	2.869E-04	1.643
	40µ	1.870E-01	4.023E-02	9.117E-04	1.125E-01	6.537E-04	2.685
	60µ	5.234E-02	1.533E-02	7.304E-04	7.100E-02	4.452E-04	1.583
	75µ	5.314E-02	1.469E-02	7.596E-04	5.794E-02	4.911E-04	1.518
High Flux EQ Cores	26µ	2.013E-01	5.554E-02	9.457E-04	1.485E-01	7.389E-04	3.207
	40µ	6.923E-02	1.711E-02	7.256E-04	9.873E-02	4.585E-04	1.722
	60µ	4.712E-02	1.715E-02	7.430E-04	7.138E-02	4.824E-04	1.631

Permeability versus Temperature Curves

Kool Mμ®

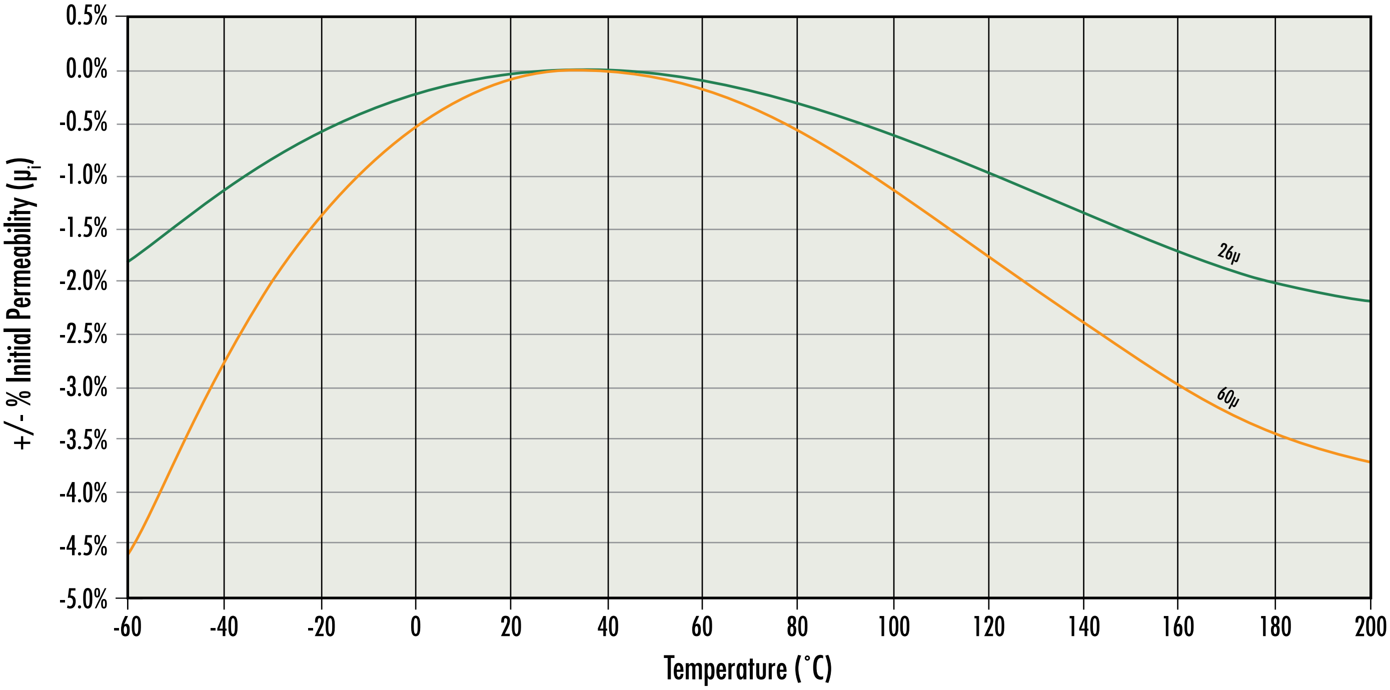


Kool Mμ® MAX

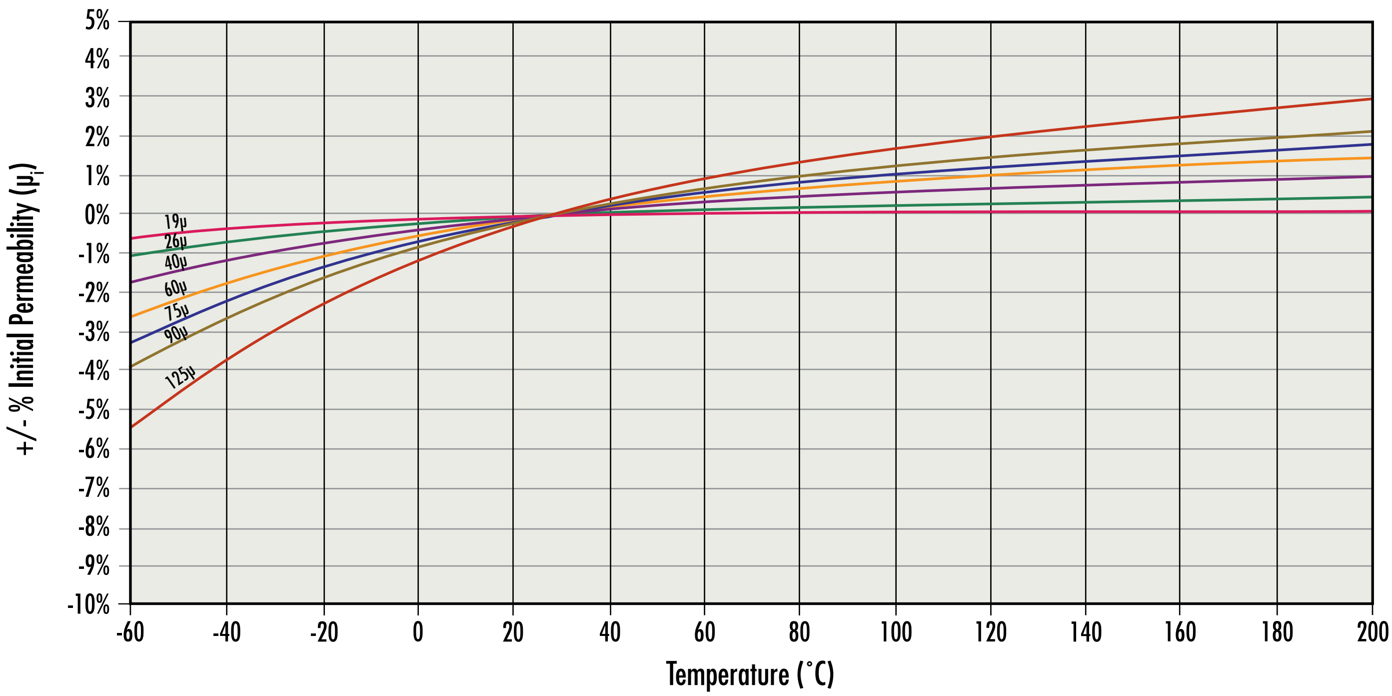


Permeability versus Temperature Curves

Kool Mµ® Hƒ

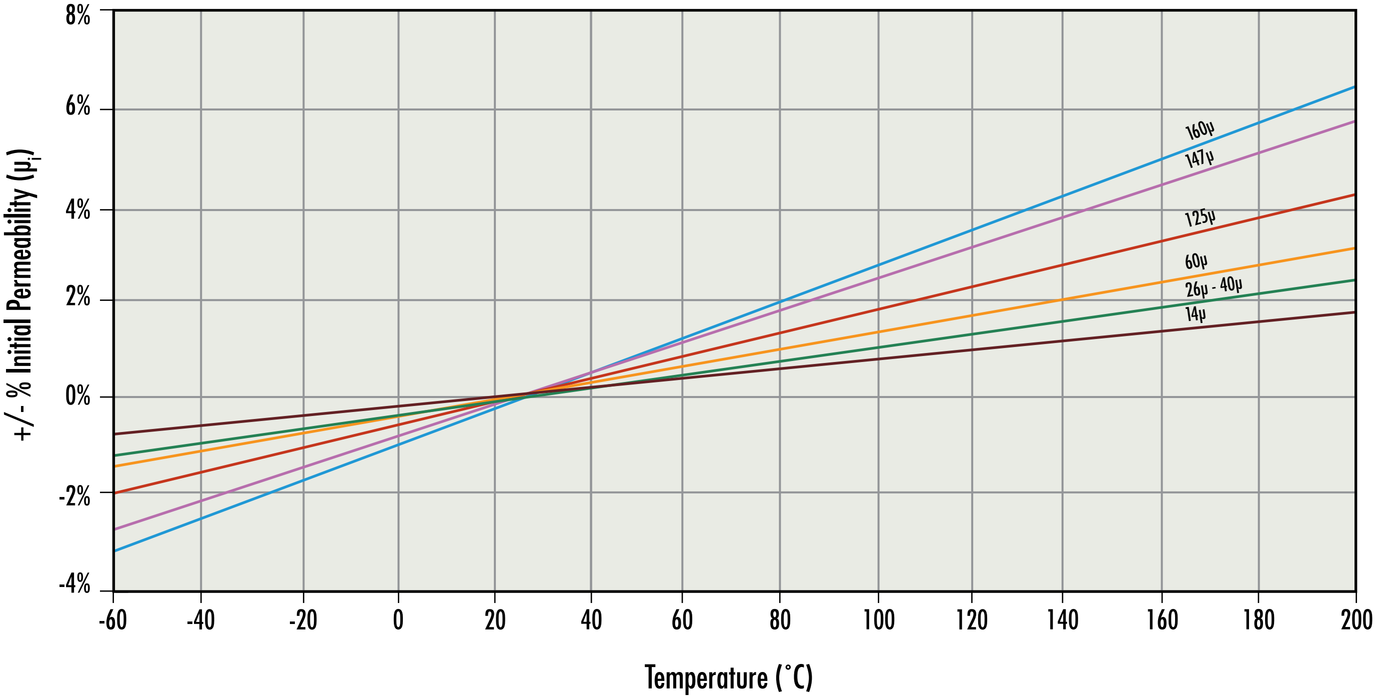


XFlux®

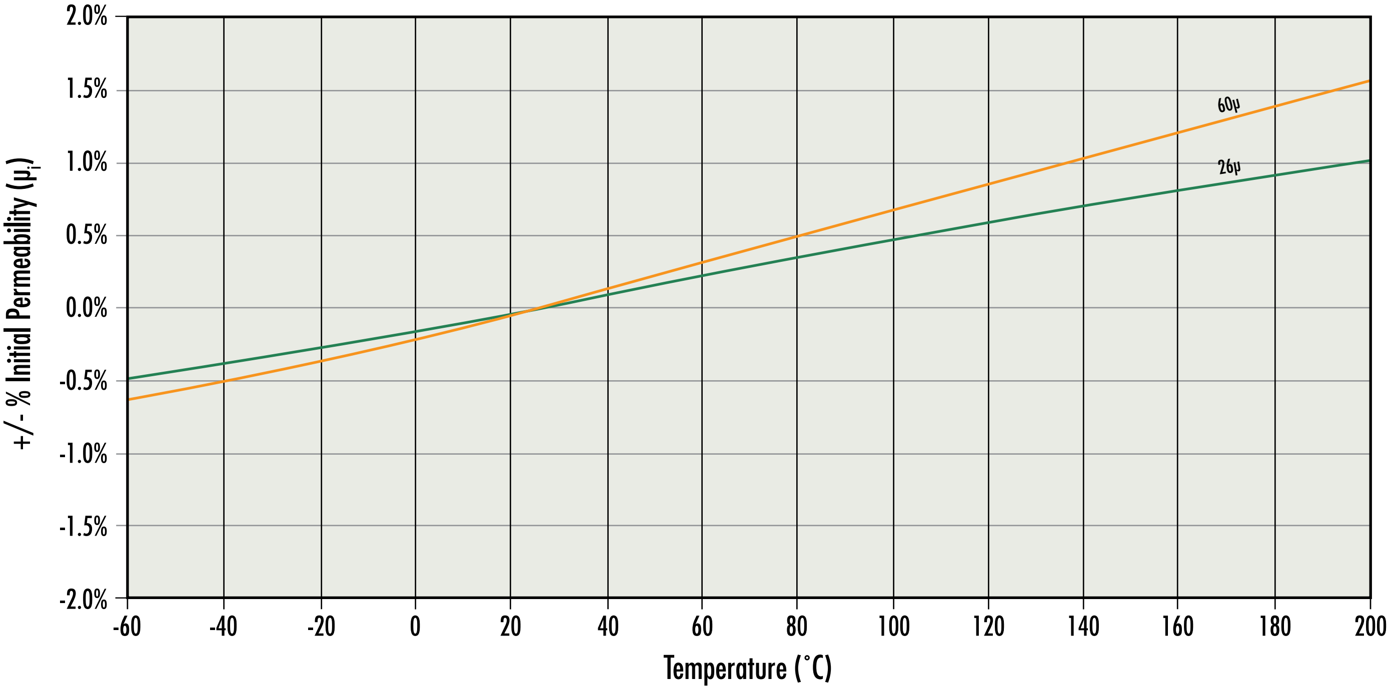


Permeability versus Temperature Curves

High Flux

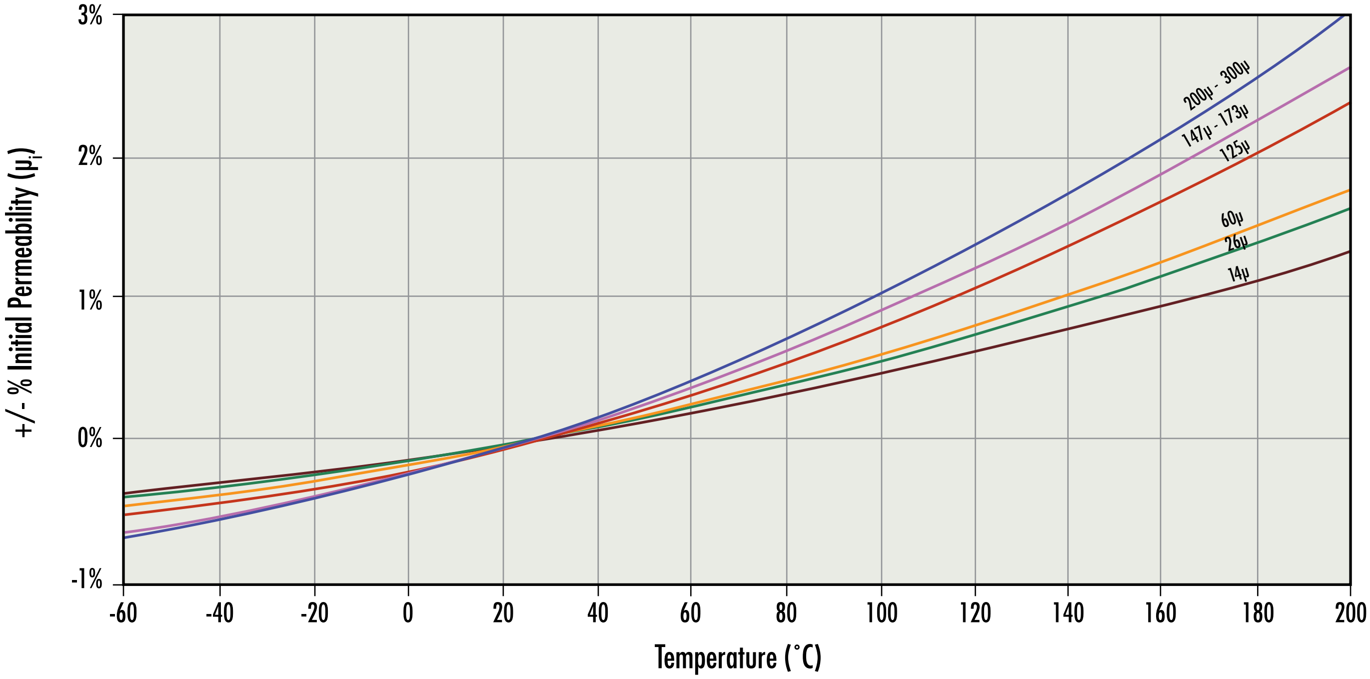


Edge™

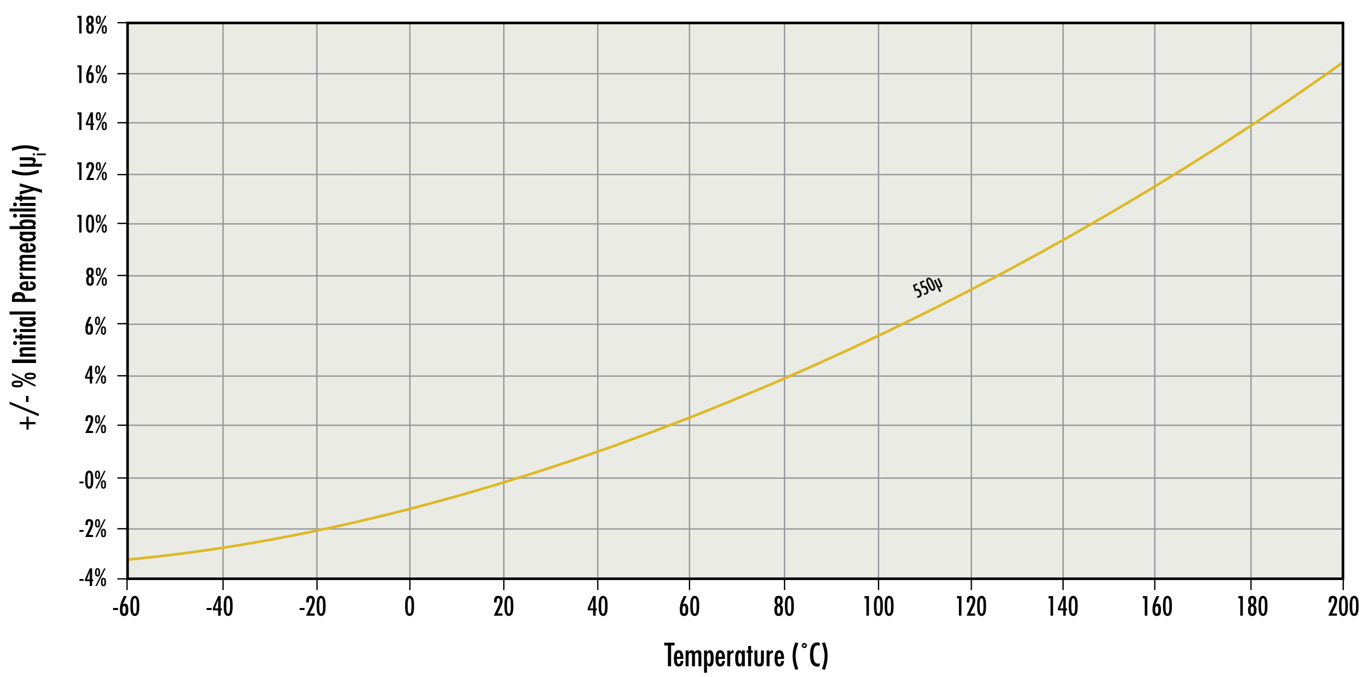


Permeability versus Temperature Curves

MPP 14μ-300μ



MPP 550μ



Permeability versus Temperature Curves

Fit Formula

Change compared with $\mu_{25^\circ C} = \frac{\mu_T - \mu_{25^\circ C}}{\mu_{25^\circ C}} = a + bT + cT^2 + dT^3 + eT^4$

	Perm	a	b	c	d	e
Kool Mμ®	14μ	-1.892E-03	9.866E-05	-1.966E-06	5.728E-09	-8.706E-14
	26μ	-2.857E-03	1.641E-04	-3.233E-06	1.147E-08	-8.391E-12
	40μ	-3.982E-03	2.404E-04	-4.711E-06	1.816E-08	-1.808E-11
	60μ	-5.590E-03	3.495E-04	-6.822E-06	2.772E-08	-3.192E-11
	75μ	-6.796E-03	4.313E-04	-8.406E-06	3.490E-08	-4.230E-11
	90μ	-8.002E-03	5.130E-04	-9.989E-06	4.207E-08	-5.268E-11
	125μ	-1.082E-02	7.039E-04	-1.368E-05	5.880E-08	-7.690E-11
Kool Mμ® MAX	14μ	-5.884E-04	4.384E-05	-8.804E-07	2.735E-09	-4.762E-13
	19μ	-7.985E-04	5.950E-05	-1.195E-06	3.711E-09	-6.463E-13
	26μ	-1.093E-03	8.142E-05	-1.635E-06	5.079E-09	-8.844E-13
	40μ	-1.681E-03	1.253E-04	-2.515E-06	7.813E-09	-1.361E-12
	60μ	-2.522E-03	1.879E-04	-3.773E-06	1.172E-08	-2.041E-12
Kool Mμ® H*f*	26μ	-2.268E-03	1.373E-04	-2.055E-06	1.755E-09	1.316E-11
	60μ	-5.441E-03	3.217E-04	-5.135E-06	1.320E-08	2.276E-12
XFlux®	19μ	-8.147E-04	4.387E-05	-5.911E-07	3.367E-09	-6.573E-12
	26μ	-2.000E-03	8.887E-05	-6.792E-07	2.949E-09	-4.823E-12
	40μ	-3.723E-03	1.578E-04	-9.501E-07	3.325E-09	-4.372E-12
	60μ	-5.585E-03	2.367E-04	-1.425E-06	4.988E-09	-6.558E-12
	75μ	-6.981E-03	2.959E-04	-1.781E-06	6.234E-09	-8.198E-12
	90μ	-8.377E-03	3.551E-04	-2.138E-06	7.481E-09	-9.837E-12
	125μ	-1.163E-02	4.931E-04	-2.969E-06	1.039E-08	-1.366E-11
Edge™	26μ	-1.532E-03	6.054E-05	7.220E-08	-6.624E-10	1.250E-12
	60μ	-2.134E-03	8.192E-05	1.643E-07	-1.242E-09	2.938E-12

Permeability versus Temperature Curves

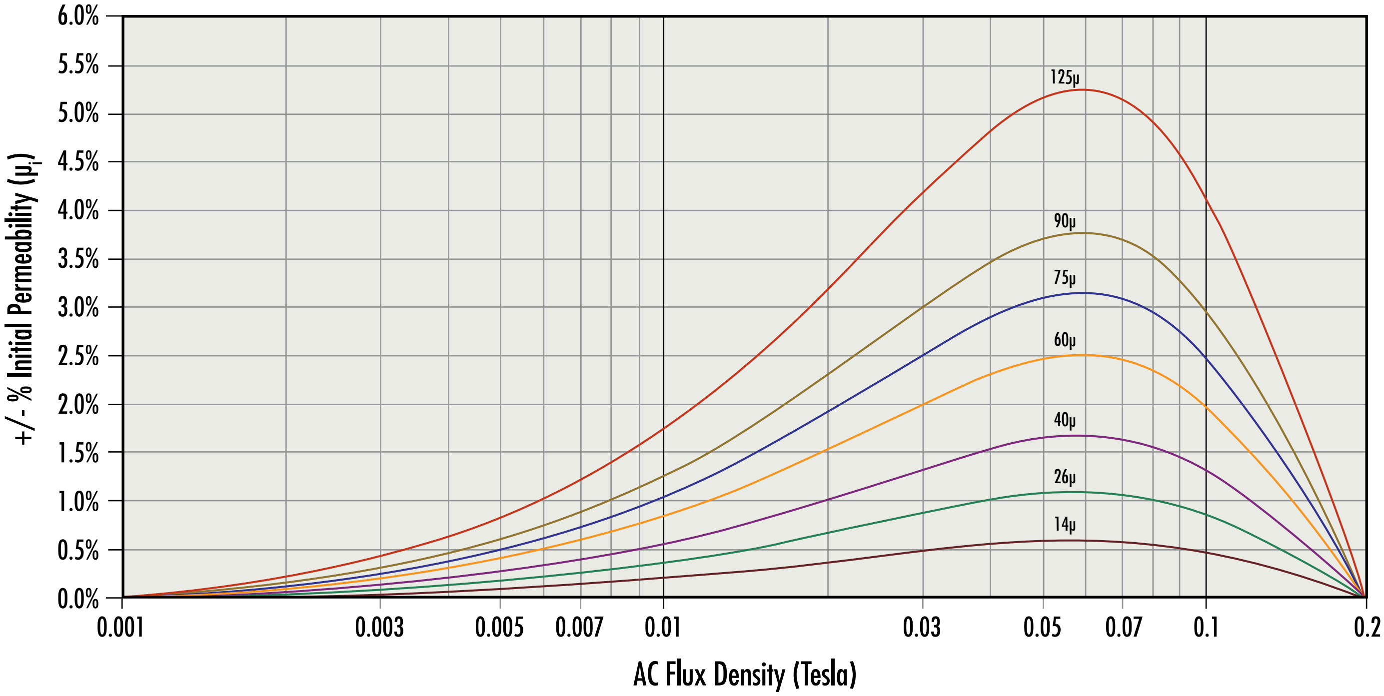
Fit Formula

Change compared with $\mu_{25^\circ C} = \dfrac{\mu_T - \mu_{25^\circ C}}{\mu_{25^\circ C}} = a + bT + cT^2$

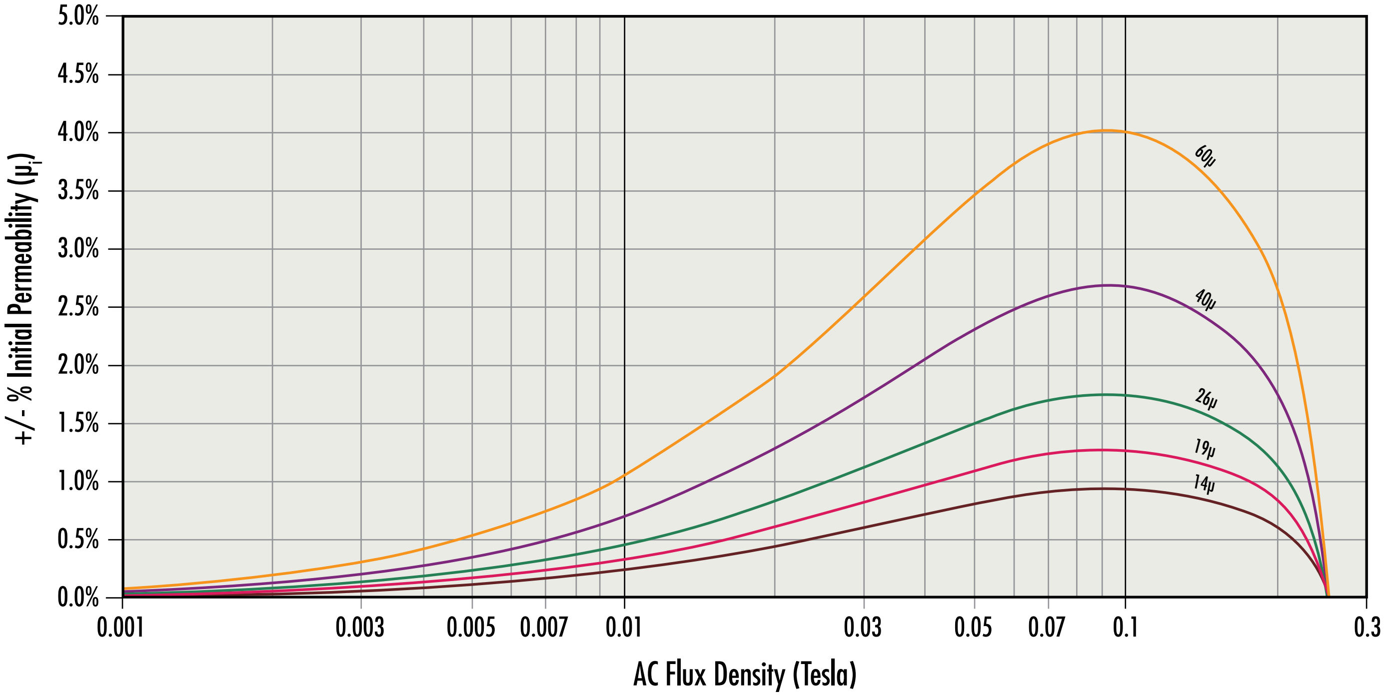
	Perm	a	b	c
High Flux	14µ	-2.500E-03	9.670E-05	5.560E-08
	26µ	-3.300E-03	1.290E-04	3.800E-08
	60µ	-4.400E-03	1.740E-04	4.090E-08
	125µ	-6.000E-03	2.400E-04	3.220E-08
	147µ	-7.900E-03	3.140E-04	7.310E-08
	160µ	-9.200E-03	3.670E-04	1.750E-08
MPP	14µ	-1.300E-03	4.750E-05	1.300E-07
	26µ	-1.431E-03	5.265E-05	1.837E-07
	60µ	-1.604E-03	5.945E-05	1.875E-07
	125µ	-1.939E-03	7.013E-05	2.967E-07
	147µ	-2.308E-03	8.497E-05	2.943E-07
	160µ	-2.308E-03	8.497E-05	2.943E-07
	173µ	-2.308E-03	8.497E-05	2.943E-07
	200µ	-2.528E-03	9.211E-05	3.601E-07
	300µ	-2.528E-03	9.211E-05	3.601E-07
	550µ	-1.309E-02	4.716E-04	2.086E-06

Permeability versus AC Flux Curves

Kool Mμ®

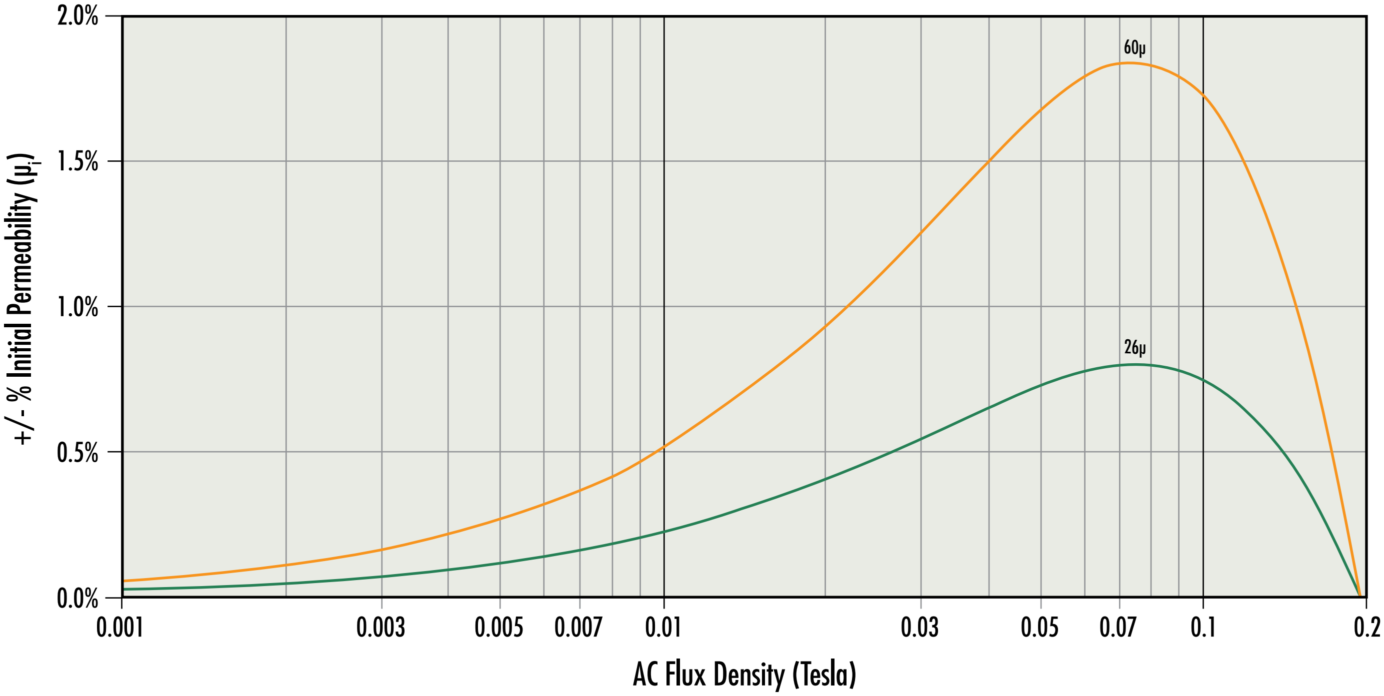


Kool Mμ® MAX

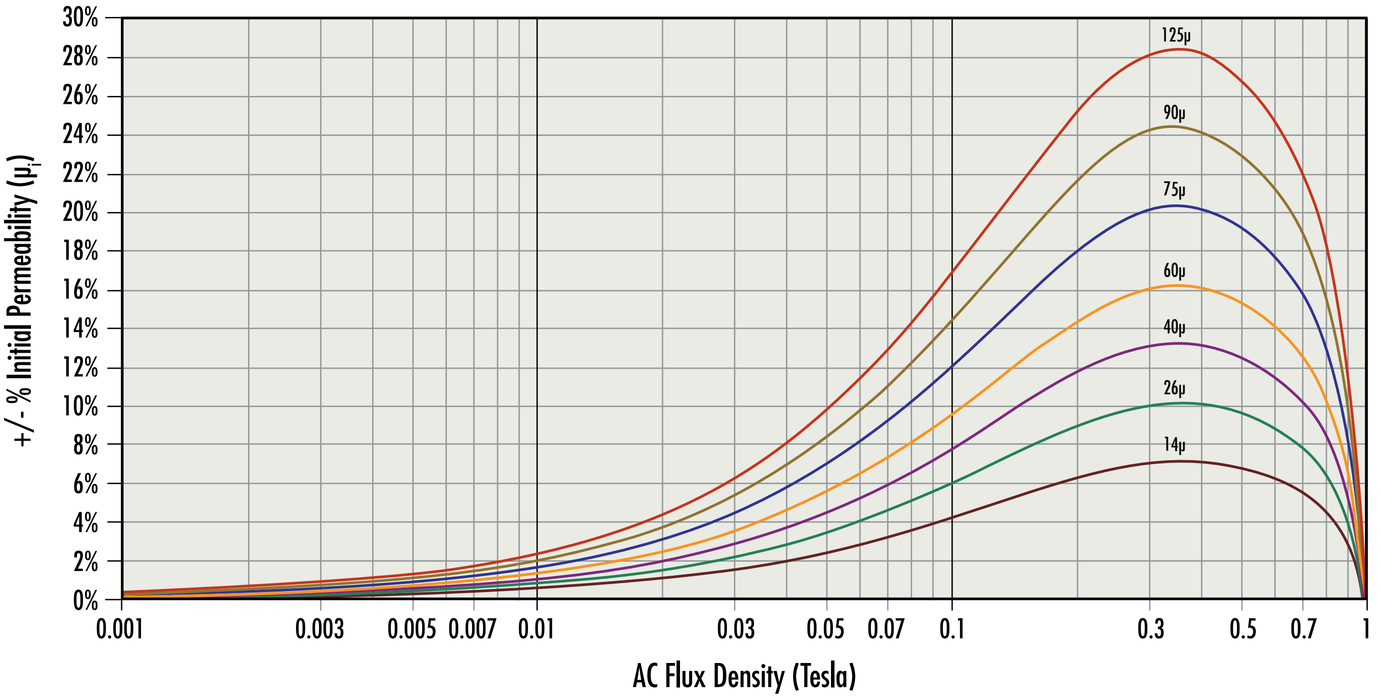


Permeability versus AC Flux Curves

Kool Mµ® Hƒ

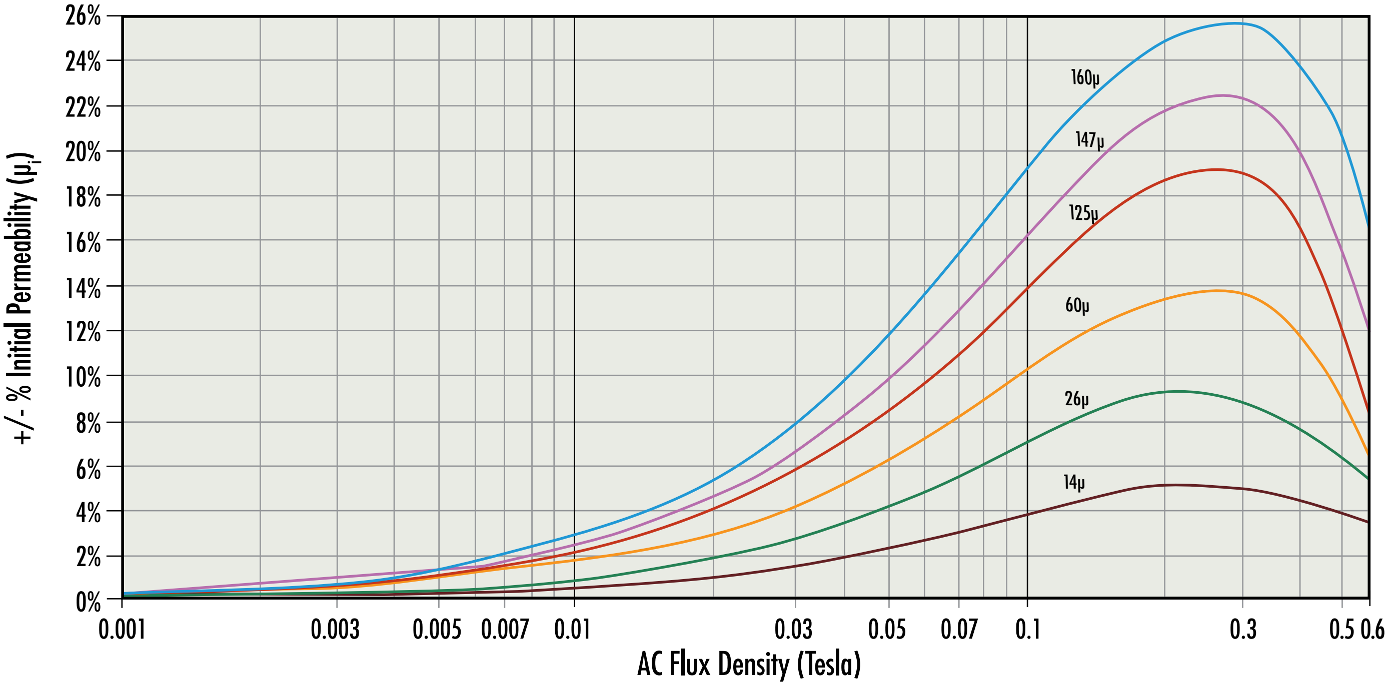


XFLUX®

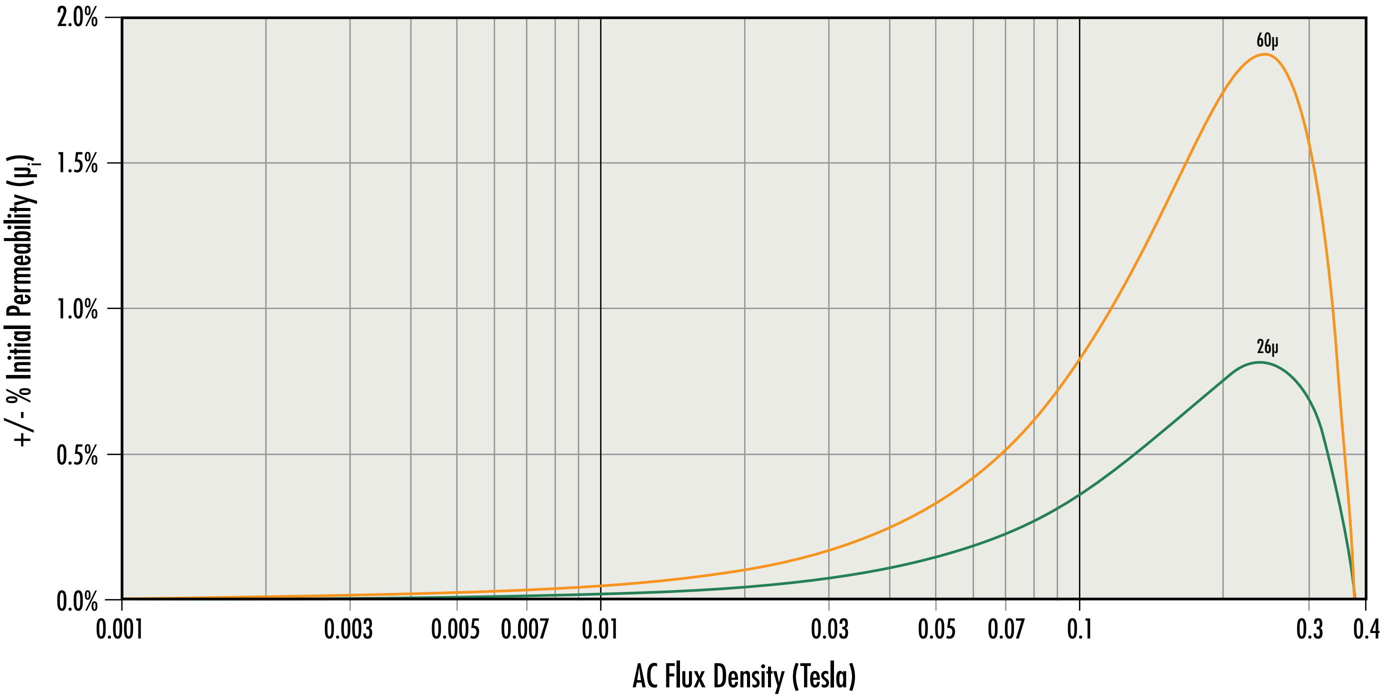


Permeability versus AC Flux Curves

High Flux

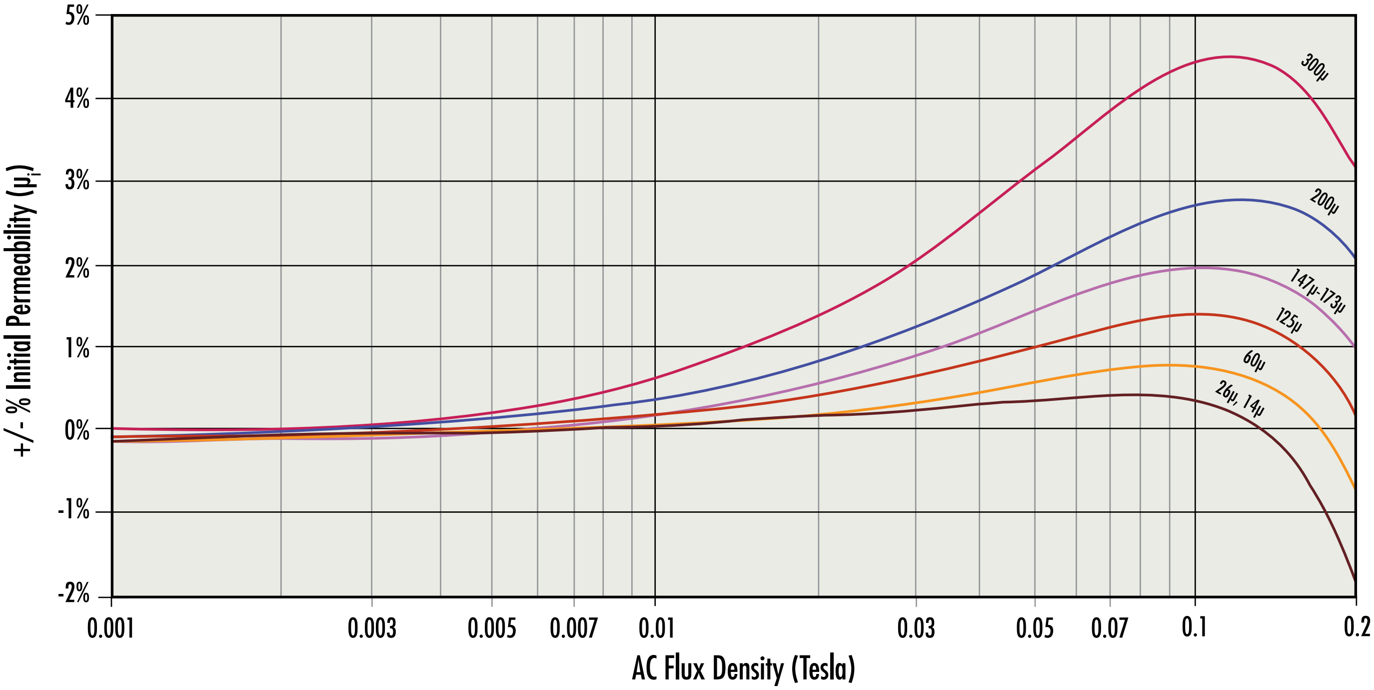


Edge™

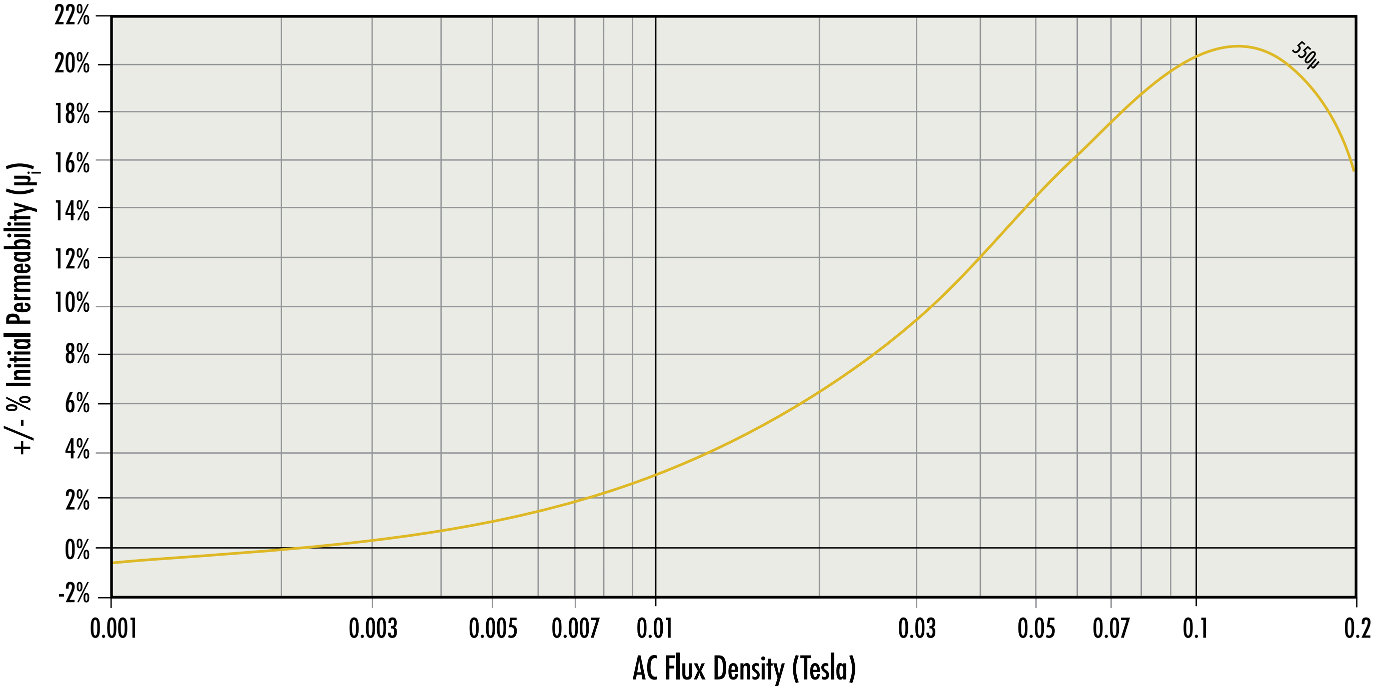


Permeability versus AC Flux Curves

MPP 14µ-300µ



MPP 550µ



Permeability versus AC Flux Curves

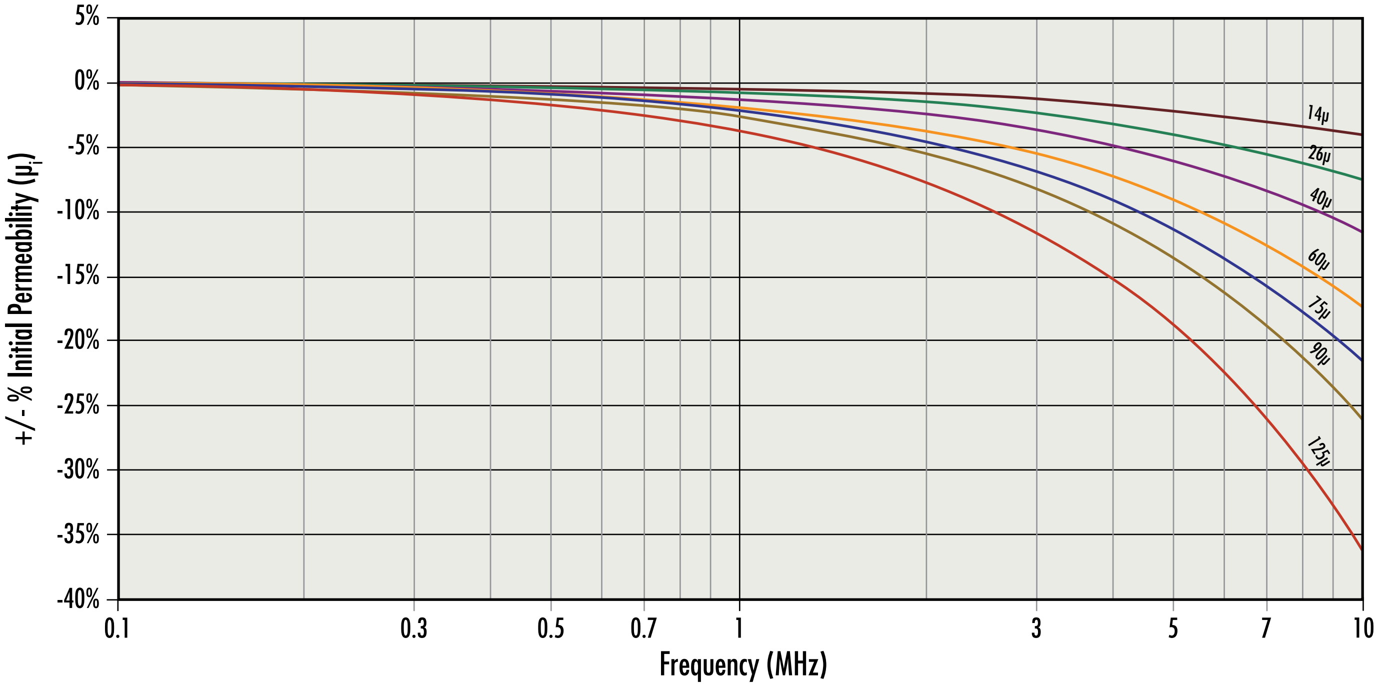
Fit Formula

$\pm \%\mu_i = (a + bB + cB^2 + dB^3 + eB^4)$ where B is Tesla

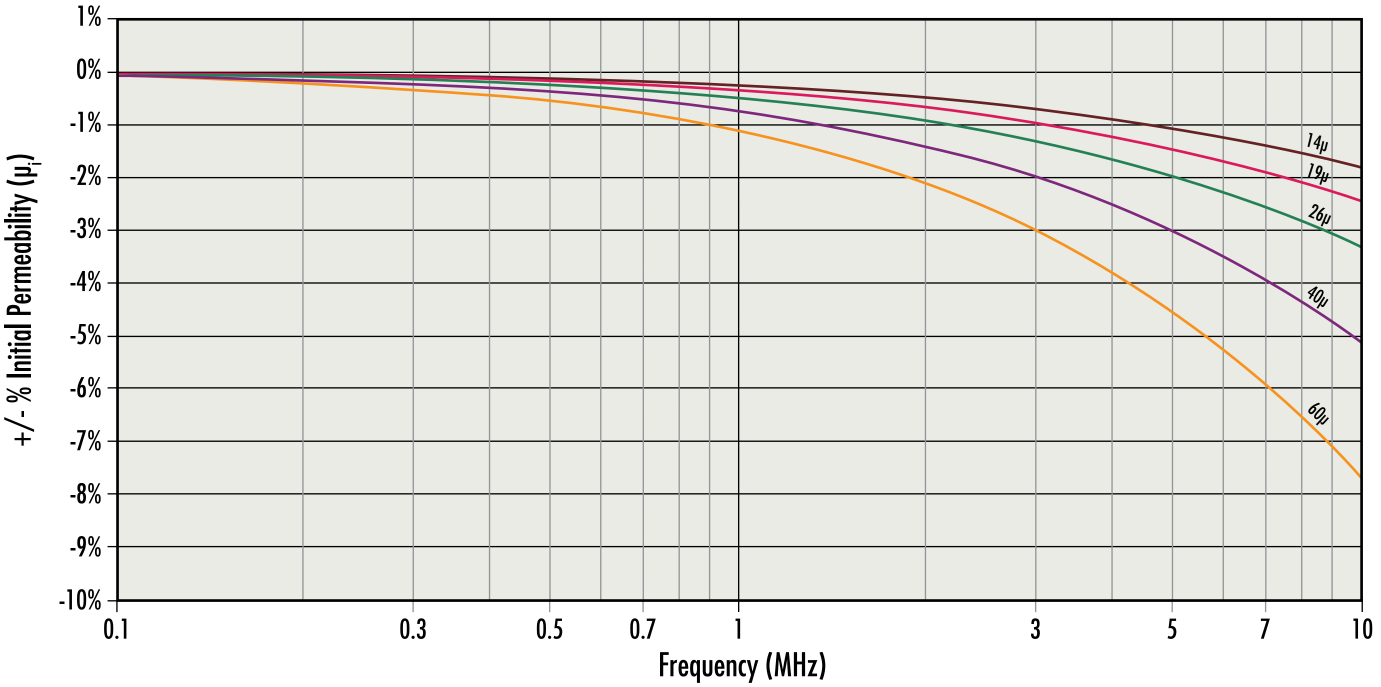
	Perm	a	b	c	d	e
Kool Mμ®	14μ	-2.478E-04	2.512E-01	-3.347E+00	1.599E+01	-2.766E+01
	26μ	-4.602E-04	4.664E-01	-6.215E+00	2.969E+01	-5.136E+01
	40μ	-7.081E-04	7.176E-01	-9.562E+00	4.568E+01	-7.902E+01
	60μ	-1.062E-03	1.076E+00	-1.434E+01	6.852E+01	-1.185E+02
	75μ	-1.328E-03	1.345E+00	-1.793E+01	8.565E+01	-1.482E+02
	90μ	-1.593E-03	1.615E+00	-2.151E+01	1.028E+02	-1.778E+02
	125μ	-2.213E-03	2.242E+00	-2.988E+01	1.427E+02	-2.469E+02
Kool Mμ® MAX	14μ	-9.942E-05	2.814E-01	-2.949E+00	1.308E+01	-2.288E+01
	19μ	-1.349E-04	3.819E-01	-4.003E+00	1.775E+01	-3.105E+01
	26μ	-1.846E-04	5.226E-01	-5.477E+00	2.429E+01	-4.249E+01
	40μ	-2.841E-04	8.040E-01	-8.427E+00	3.737E+01	-6.537E+01
	60μ	-4.261E-04	1.206E+00	-1.264E+01	5.606E+01	-9.806E+01
Kool Mμ® Hƒ	26μ	0	2.464E-01	-2.368E+00	7.404E+00	-8.877E+00
	60μ	0	5.686E-01	-5.465E+00	1.709E+01	-2.049E+01
XFLUX®	19μ	4.533E-04	5.521E-01	-1.516E+00	1.750E+00	-7.866E-01
	26μ	6.475E-04	7.888E-01	-2.166E+00	2.499E+00	-1.124E+00
	40μ	8.418E-04	1.025E+00	-2.816E+00	3.249E+00	-1.461E+00
	60μ	1.036E-03	1.262E+00	-3.466E+00	3.999E+00	-1.798E+00
	75μ	1.295E-03	1.578E+00	-4.333E+00	4.999E+00	-2.248E+00
	90μ	1.554E-03	1.893E+00	-5.199E+00	5.999E+00	-2.697E+00
	125μ	1.813E-03	2.209E+00	-6.066E+00	6.998E+00	-3.147E+00
Edge™	26μ	0	1.647E-02	2.767E-01	-8.511E-01	9.325E-08
	60μ	0	3.801E-02	6.385E-01	-1.964E+00	2.152E-07
High Flux	14μ	-1.000E-03	5.458E-01	-1.930E+00	2.598E+00	-1.228E+00
	26μ	-2.000E-03	1.020E+00	-3.696E+00	5.099E+00	-2.529E+00
	60μ	0	1.476E+00	-5.695E+00	9.395E+00	-6.182E+00
	125μ	0	1.934E+00	-6.792E+00	1.014E+01	-6.347E+00
	147μ	0	2.350E+00	-8.895E+00	1.465E+01	-9.716E+00
	160μ	-2.000E-03	2.910E+00	-1.224E+01	2.263E+01	-1.590E+01
MPP	14μ	-5.000E-04	1.186E-01	-5.096E-01	-2.727E+00	0
	26μ	-5.000E-04	1.186E-01	-5.096E-01	-2.727E+00	0
	60μ	-1.000E-03	1.708E-01	-6.675E-01	-1.792E+00	0
	125μ	-1.000E-03	2.960E-01	-1.561E+00	8.254E-01	0
	147μ	-2.000E-03	4.393E-01	-2.591E+00	3.446E+00	0
	160μ	-2.000E-03	4.393E-01	-2.591E+00	3.446E+00	0
	173μ	-2.000E-03	4.393E-01	-2.591E+00	3.446E+00	0
	200μ	-1.000E-03	5.145E-01	-2.688E+00	3.308E+00	0
	300μ	-2.000E-03	9.038E-01	-5.112E+00	7.055E+00	0
	550μ	-9.000E-03	4.042E+00	-2.240E+01	3.123E+01	0

Permeability versus Frequency Curves

Kool Mμ®

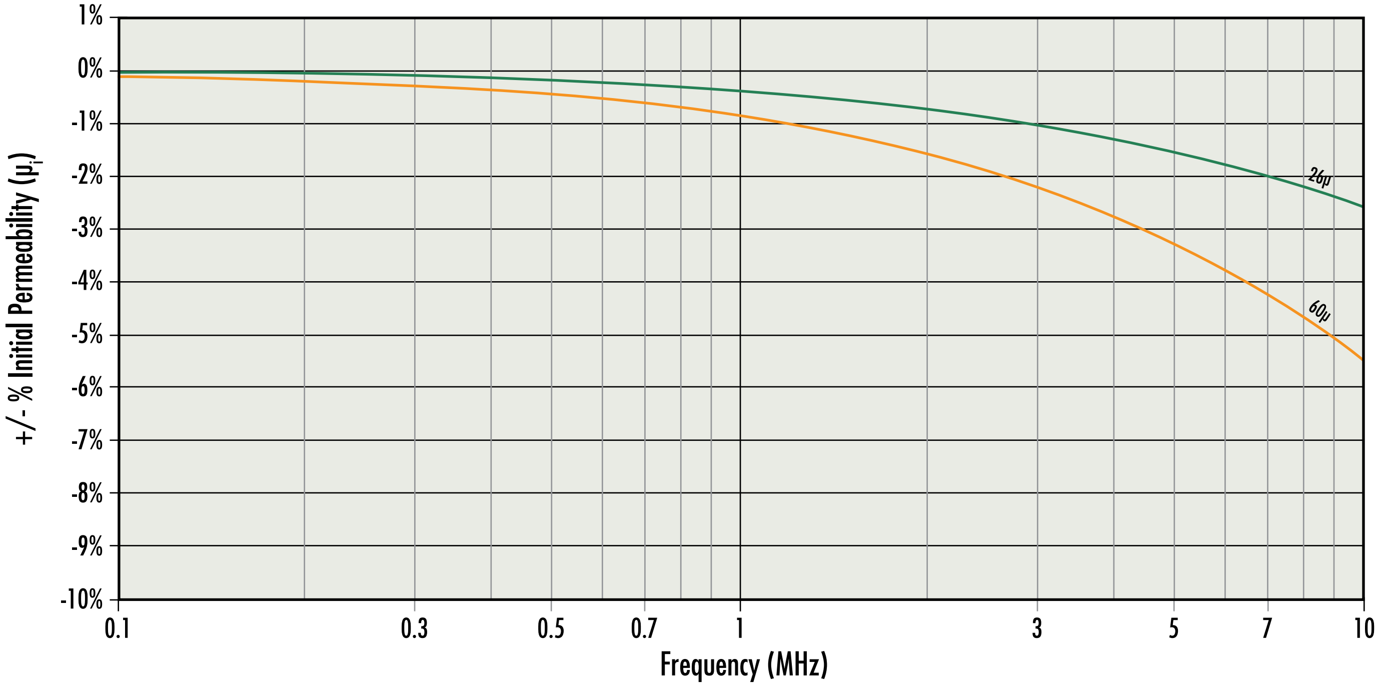


Kool Mμ® MAX

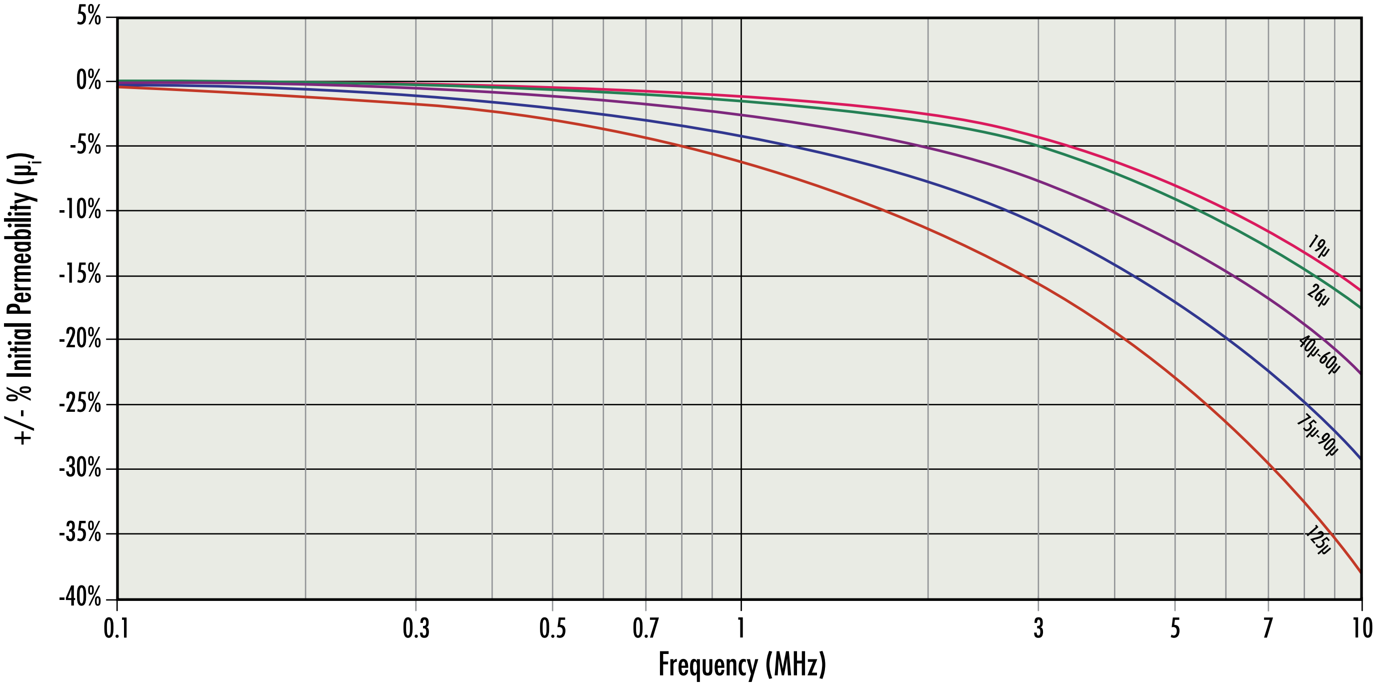


Permeability versus Frequency Curves

Kool Mμ® H*ƒ*

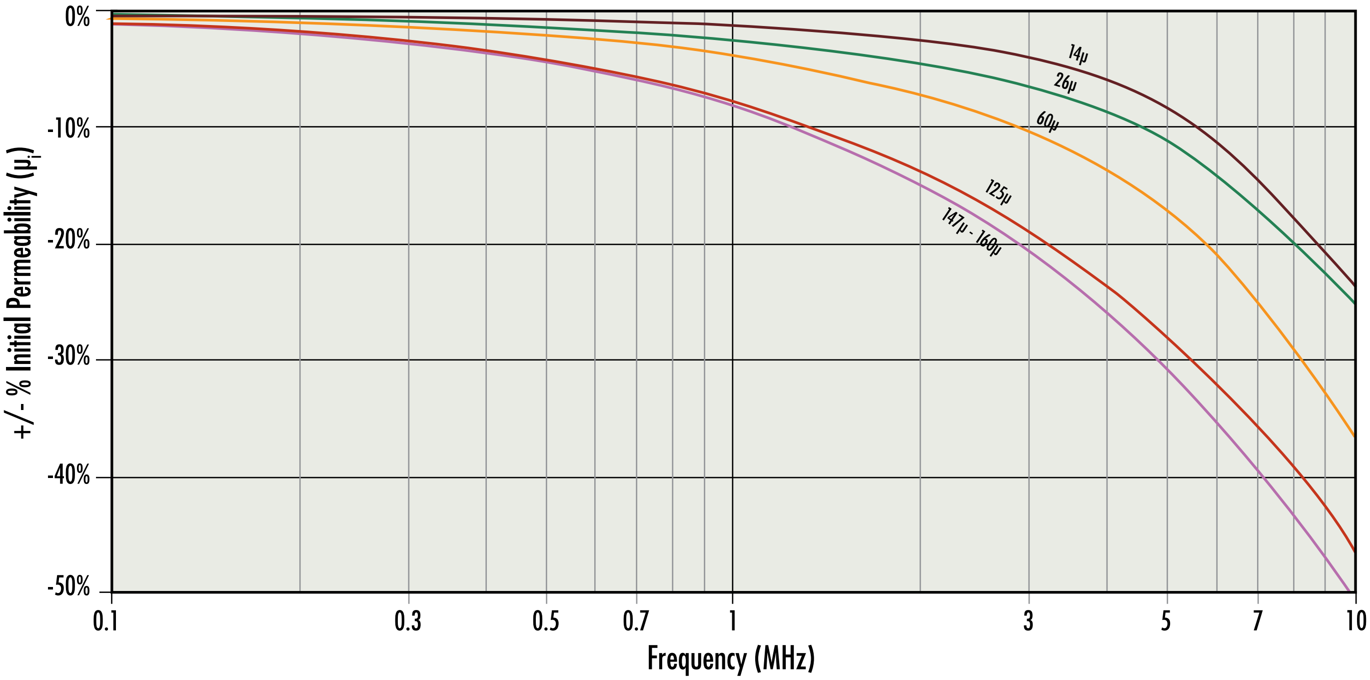


XFlux®

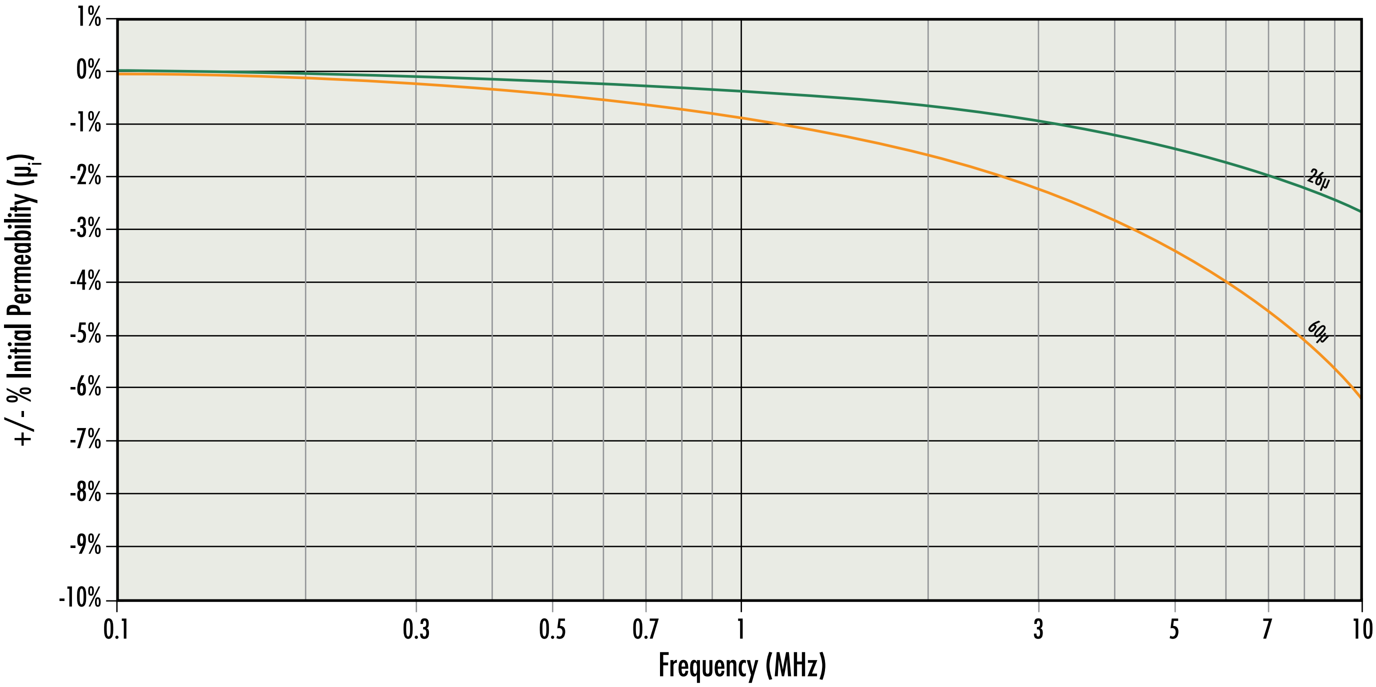


Permeability versus Frequency Curves

High Flux

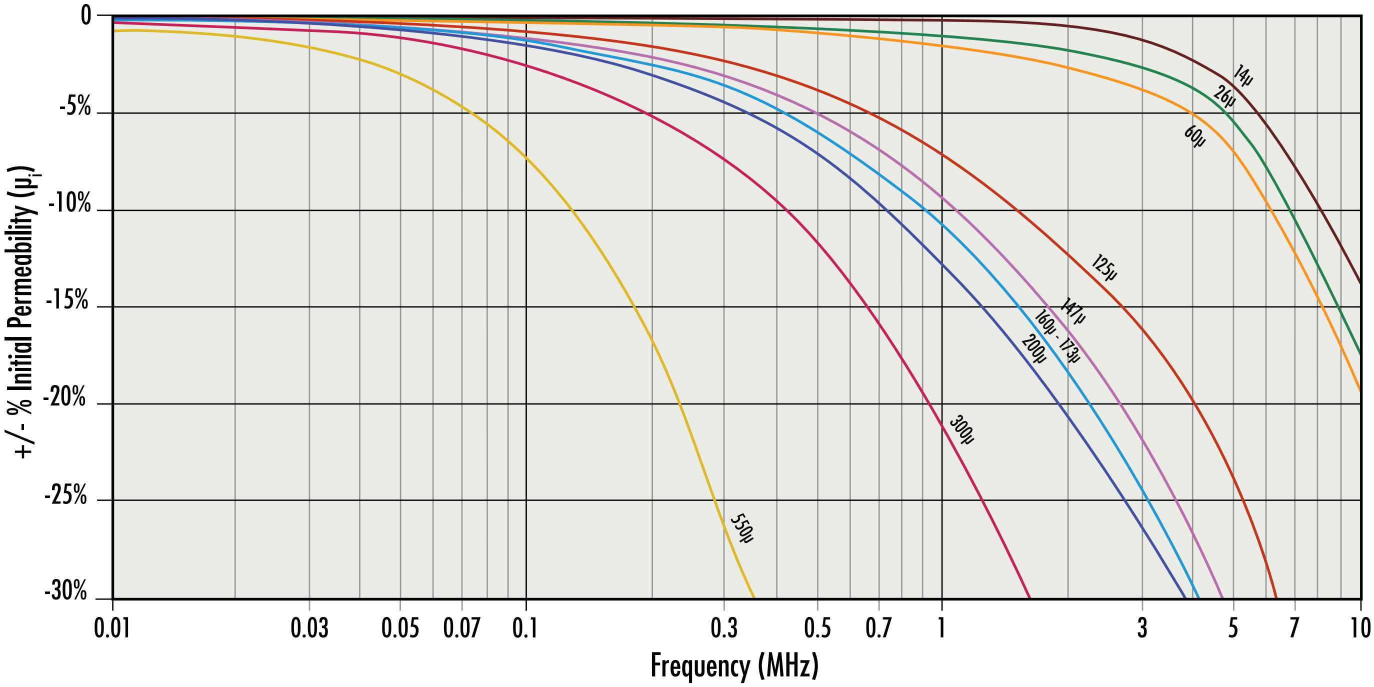


Edge™



Permeability versus Frequency Curves

MPP



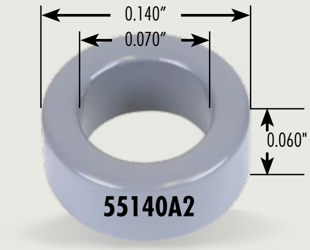
Permeability versus Frequency Curves

Fit Formula

$\pm \%\mu_i = a + bf + cf^2 + df^3 + ef^4$ where f = megahertz (MHz)

	Perm	a	b	c	d	e
Kool Mµ®	14µ	1.911E-04	-4.298E-03	-5.002E-05	1.373E-05	-6.261E-07
	26µ	3.550E-04	-7.982E-03	-9.290E-05	2.551E-05	-1.163E-06
	40µ	5.461E-04	-1.228E-02	-1.429E-04	3.924E-05	-1.789E-06
	60µ	8.191E-04	-1.842E-02	-2.144E-04	5.886E-05	-2.683E-06
	75µ	1.024E-03	-2.303E-02	-2.680E-04	7.358E-05	-3.354E-06
	90µ	1.229E-03	-2.763E-02	-3.216E-04	8.829E-05	-4.025E-06
	125µ	1.707E-03	-3.838E-02	-4.466E-04	1.226E-04	-5.590E-06
Kool Mµ® MAX	14µ	8.465E-05	-1.904E-03	-2.216E-05	6.083E-06	-2.773E-07
	19µ	1.149E-04	-2.583E-03	-3.007E-05	8.255E-06	-3.763E-07
	26µ	1.572E-04	-3.535E-03	-4.115E-05	1.130E-05	-5.149E-07
	40µ	2.418E-04	-5.439E-03	-6.330E-05	1.738E-05	-7.922E-07
	60µ	3.628E-04	-8.158E-03	-9.496E-05	2.607E-05	-1.188E-06
Kool Mµ® H*f*	26µ	0	-4.371E-03	3.095E-04	-1.344E-05	0
	60µ	0	-9.179E-03	6.500E-04	-2.822E-05	0
XFLUX®	19µ	4.454E-04	-7.911E-03	-3.405E-03	4.290E-04	-1.724E-05
	26µ	6.652E-04	-1.222E-02	-2.602E-03	3.447E-04	-1.399E-05
	40-60µ	1.419E-03	-2.699E-02	1.514E-04	5.563E-05	-2.844E-06
	75-90µ	2.440E-03	-4.699E-02	3.880E-03	-3.358E-04	1.225E-05
	125µ	3.775E-03	-7.315E-02	8.755E-03	-8.477E-04	3.199E-05
Edge™	26µ	0	-4.484E-03	3.175E-04	-1.379E-05	0
	60µ	0	-1.035E-02	7.327E-04	-3.182E-05	0
High Flux	14µ	0	-1.070E-02	5.960E-04	-4.920E-04	3.070E-05
	26µ	0	-2.560E-02	3.430E-03	-7.340E-04	3.990E-05
	60µ	0	-3.870E-02	3.050E-03	-5.490E-04	2.690E-05
	125µ	0	-8.600E-02	1.140E-02	-1.370E-03	6.050E-05
	147µ	0	-8.170E-02	7.330E-03	-6.400E-04	2.390E-05
	160µ	0	-8.590E-02	7.220E-03	-5.530E-04	1.880E-05
MPP	14µ	0	-2.320E-03	7.630E-04	-5.070E-04	3.170E-05
	26µ	0	-1.560E-02	5.190E-03	-1.160E-03	6.230E-05
	60µ	0	-1.820E-02	4.320E-03	-9.780E-04	5.360E-05
	125µ	0	-8.430E-02	1.590E-02	-2.270E-03	1.080E-04
	147µ	0	-1.110E-01	2.040E-02	-2.810E-03	1.300E-04
	160µ	0	-1.290E-01	2.390E-02	-3.080E-03	1.410E-04
	173µ	0	-1.290E-01	2.390E-02	-3.080E-03	1.410E-04
	200µ	0	-1.610E-01	3.820E-02	-5.170E-03	2.160E-04
	300µ	0	-2.590E-01	5.570E-02	-6.530E-03	2.780E-04
	550µ	0	-4.590E-01	-3.300E+00	8.140E+00	5.730E+00

3.56 mm OD



Core Dimensions	OD	ID	HT
Before Finish (nominal)	3.56 mm/0.140 in	1.78 mm/0.070 in	1.52 mm/0.060 in
After Finish (limits)	4.19 mm/0.165 in	1.27 mm/0.050 in	2.16 mm/0.085 in

Permeability (μ)	A_L ± 8% Kool Mμ A_L ± 15%	Part Number						
		Kool Mμ®	Kool Mμ® MAX	Kool Mμ® Hƒ	XFlux®	High Flux	Edge™	MPP
60	13	77141	-	-	-	-	-	-
75	16	77445	-	-	-	-	-	-
90	19	77444	-	-	-	-	-	-
125	26	77140	-	-	-	-	-	55140
147	31	-	-	-	-	-	-	55139
160	33	-	-	-	-	-	-	55138
173	36	-	-	-	-	-	-	55134
200	42	-	-	-	-	-	-	55137
300	62	-	-	-	-	-	-	55135

Physical and Magnetic Parameters	
Window Area	1.27 mm^2
Cross Section (A_e)	1.30 mm^2
Path Length (L_e)	8.06 mm
Effective Volume (V_e)	10.5 mm^3
Area Product	1.65 mm^4

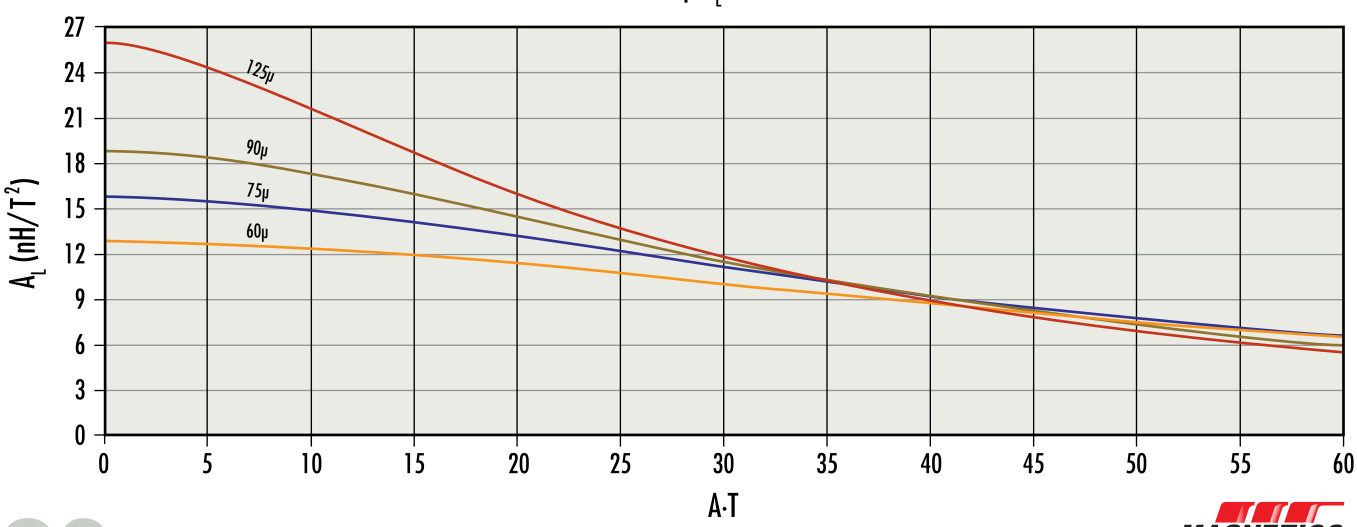
Wound Coil Dimensions*		
40% Winding Factor	OD	4.30 mm
	HT	2.56 mm
Completely Full Window	Max OD	4.95 mm
	Max HT	2.74 mm

Surface Area*	
Unwound Core	60 mm^2
40% Winding Factor	70 mm^2

Winding Turn Length*	
Winding Factor	Length/Turn (mm)
0%	7.24
20%	7.56
25%	7.65
30%	7.70
35%	7.81
40%	7.89
45%	7.98
50%	8.08
60%	8.27
70%	8.48

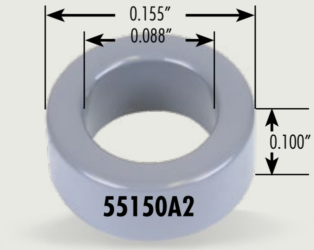
* See Toroid Winding pg. 19

Kool Mμ A_L vs. DC Bias



3.94 mm OD

Core Dimensions	OD	ID	HT
Before Finish (nominal)	3.94 mm/0.155 in	2.24 mm/0.088 in	2.54 mm/0.100 in
After Finish (limits)	4.57 mm/0.180 in	1.73 mm/0.068 in	3.18 mm/0.125 in



Permeability (µ)	A_L ± 8% Kool Mµ A_L ± 15%	Part Number						
		Kool Mµ®	Kool Mµ® MAX	Kool Mµ® H*f*	XFLUX®	High Flux	Edge™	MPP
60	17	77151	-	-	-	-	-	-
75	21	77155	-	-	-	-	-	-
90	25	77154	-	-	-	-	-	-
125	35	77150	-	-	-	-	-	55150
147	41	-	-	-	-	-	-	55149
160	45	-	-	-	-	-	-	55148
173	48	-	-	-	-	-	-	55144
200	56	-	-	-	-	-	-	55147
300	84	-	-	-	-	-	-	55145

Physical and Magnetic Parameters	
Window Area	2.32 mm^2
Cross Section (A_e)	2.11 mm^2
Path Length (L_e)	9.42 mm
Effective Volume (V_e)	19.9 mm^3
Area Product	4.90 mm^4

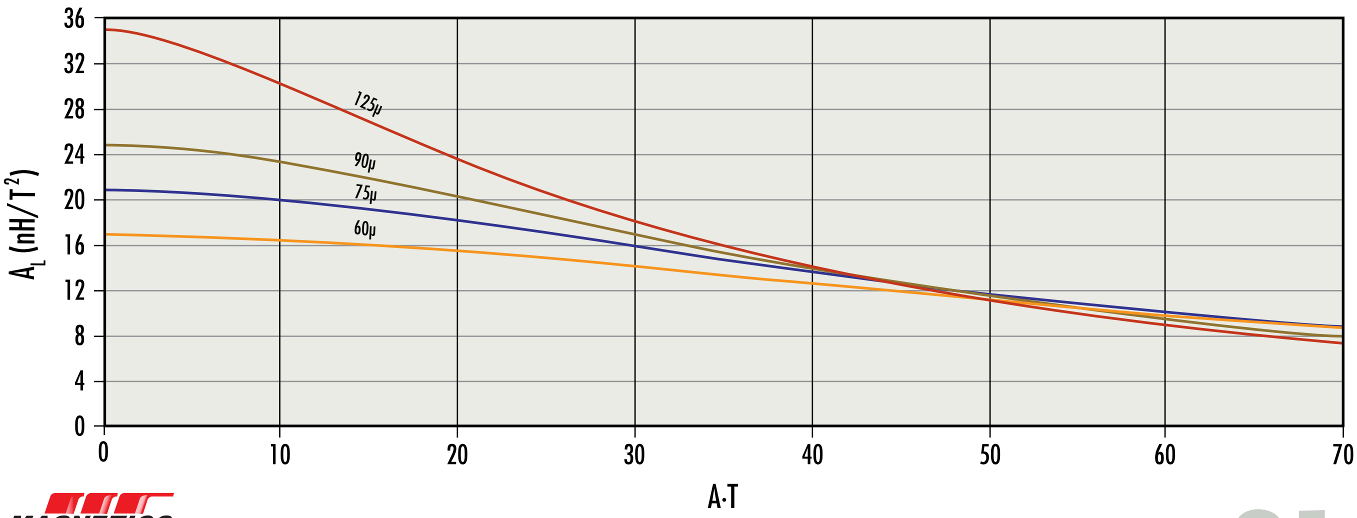
Wound Coil Dimensions*		
40% Winding Factor	OD	4.85 mm
	HT	3.73 mm
Completely Full Window	Max OD	5.77 mm
	Max HT	4.75 mm

Surface Area*	
Unwound Core	90 mm^2
40% Winding Factor	110 mm^2

Winding Turn Length*	
Winding Factor	Length/Turn (mm)
0%	9.20
20%	9.64
25%	9.76
30%	9.84
35%	9.98
40%	10.1
45%	10.2
50%	10.3
60%	10.6
70%	10.9

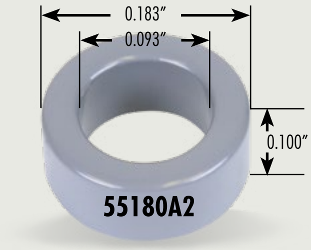
** See Toroid Winding pg. 19*

Kool Mµ A_L vs. DC Bias



4.65 mm OD

Core Dimensions	OD	ID	HT
Before Finish (nominal)	4.65 mm/0.183 in	2.36 mm/0.093 in	2.54 mm/0.100 in
After Finish (limits)	5.28 mm/0.208 in	1.85 mm/0.073 in	3.18 mm/0.125 in



Permeability (µ)	A_L ± 8% Kool Mµ A_L ± 15%	Part Number						
		Kool Mµ®	Kool Mµ® MAX	Kool Mµ® H*f*	XFlux®	High Flux	Edge™	MPP
60	20	77181	-	-	-	-	-	55181
75	25	77185	-	-	-	-	-	-
90	30	77184	-	-	-	-	-	-
125	42	77180	-	-	-	-	-	55180
147	49	-	-	-	-	-	-	55179
160	53	-	-	-	-	-	-	55178
173	57	-	-	-	-	-	-	55174
200	67	-	-	-	-	-	-	55177
300	99	-	-	-	-	-	-	55175

Physical and Magnetic Parameters	
Window Area	2.69 mm^2
Cross Section (A_e)	2.85 mm^2
Path Length (L_e)	10.6 mm
Effective Volume (V_e)	30.3 mm^3
Area Product	7.66 mm^4

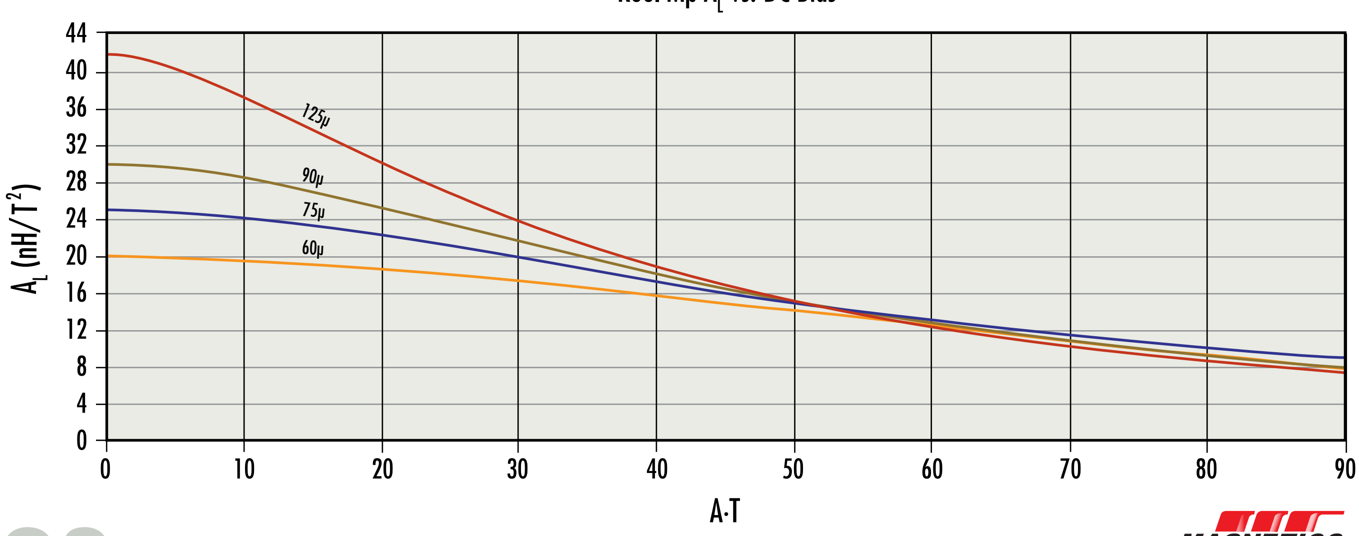
Wound Coil Dimensions*		
40% Winding Factor	OD	5.56 mm
	HT	3.73 mm
Completely Full Window	Max OD	6.65 mm
	Max HT	4.94 mm

Surface Area*	
Unwound Core	110 mm^2
40% Winding Factor	130 mm^2

Winding Turn Length*	
Winding Factor	Length/Turn (mm)
0%	9.79
20%	10.3
25%	10.4
30%	10.5
35%	10.6
40%	10.7
45%	10.9
50%	11.0
60%	11.3
70%	11.6

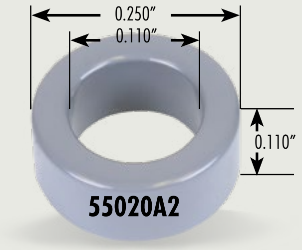
*See Toroid Winding pg. 19

Kool Mµ A_L vs. DC Bias



6.35 mm OD

Core Dimensions	OD	ID	HT
Before Finish (nominal)	6.35 mm/0.250 in	2.79 mm/0.110 in	2.79 mm/0.110 in
After Finish (limits)	6.99 mm/0.275 in	2.29 mm/0.090 in	3.43 mm/0.135 in



Permeability (μ)	A_L ± 8% Kool Mμ A_L ± 12%	Part Number						
		Kool Mμ®	Kool Mμ® MAX	Kool Mμ® H*f*	XFLUX®	High Flux	Edge™	MPP
14	6	77023	-	-	-	58023	-	55023
26	10	77022	-	-	-	58022	-	55022
60	24	77021	-	-	-	58021	-	55021
75	30	77825	-	-	-	-	-	-
90	36	77824	-	-	-	-	-	-
125	50	77020	-	-	-	58020	-	55020
147	59	-	-	-	-	58019	-	55019
160	64	-	-	-	-	58018	-	55018
173	69	-	-	-	-	-	-	55014
200	80	-	-	-	-	-	-	55017
300	120	-	-	-	-	-	-	55015
550	220	-	-	-	-	-	-	55016

Physical and Magnetic Parameters	
Window Area	4.08 mm^2
Cross Section (A_e)	4.70 mm^2
Path Length (L_e)	13.6 mm
Effective Volume (V_e)	64.0 mm^3
Area Product	19.2 mm^4

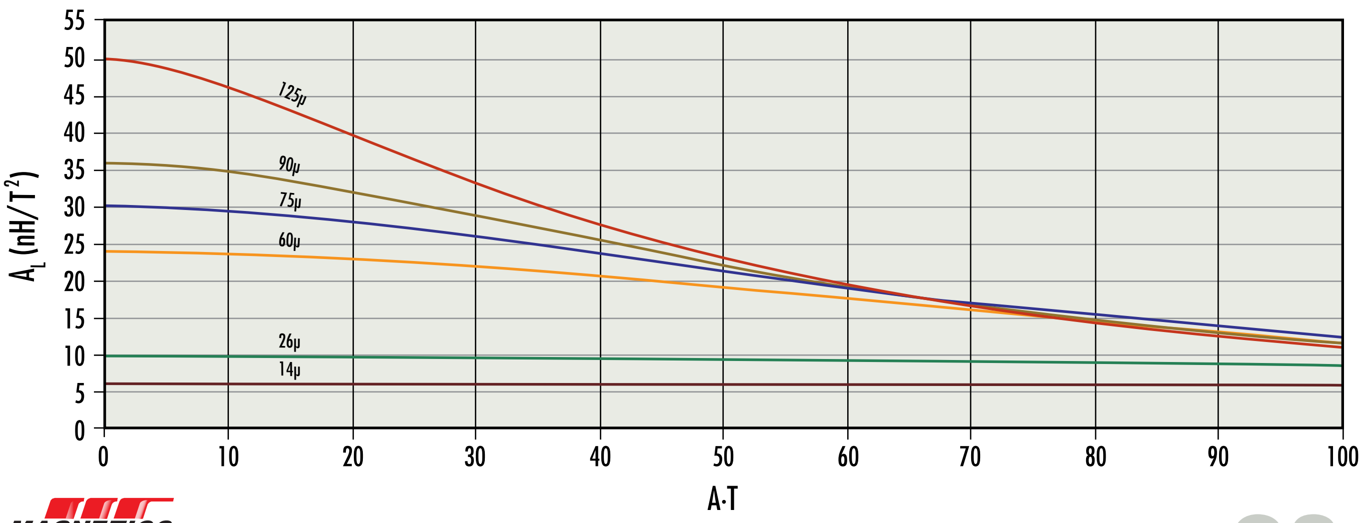
Wound Coil Dimensions*		
40% Winding Factor	OD	7.34 mm
	HT	4.12 mm
Completely Full Window	Max OD	8.81 mm
	Max HT	5.38 mm

Surface Area*	
Unwound Core	170 mm^2
40% Winding Factor	200 mm^2

Winding Turn Length*	
Winding Factor	Length/Turn (mm)
0%	11.6
20%	12.2
25%	12.3
30%	12.4
35%	12.6
40%	12.8
45%	12.9
50%	13.1
60%	13.4
70%	13.9

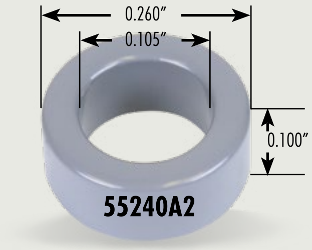
* *See Toroid Winding pg. 19*

Kool Mμ A_L vs. DC Bias



6.60 mm OD

Core Dimensions	OD	ID	HT
Before Finish (nominal)	6.60 mm/0.260 in	2.67 mm/0.105 in	2.54 mm/0.100 in
After Finish (limits)	7.24 mm/0.285 in	2.16 mm/0.085 in	3.18 mm/0.125 in



Permeability (μ)	A_L ± 8% Kool Mμ A_L ± 12%	Part Number						
		Kool Mμ®	Kool Mμ® MAX	Kool Mμ® Hƒ	XFlux®	High Flux	Edge™	MPP
14	6	77243	-	-	-	58243	-	55243
26	11	77242	-	-	-	58242	-	55242
60	26	77241	-	-	-	58241	-	55241
75	32	77245	-	-	-	-	-	-
90	39	77244	-	-	-	-	-	-
125	54	77240	-	-	-	58240	-	55240
147	64	-	-	-	-	58239	-	55239
160	69	-	-	-	-	58238	-	55238
173	75	-	-	-	-	-	-	55234
200	86	-	-	-	-	-	-	55237
300	130	-	-	-	-	-	-	55235
550	242	-	-	-	-	-	-	55236

Physical and Magnetic Parameters	
Window Area	3.63 mm²
Cross Section (A_e)	4.76 mm²
Path Length (L_e)	13.6 mm
Effective Volume (V_e)	64.9 mm³
Area Product	17.3 mm⁴

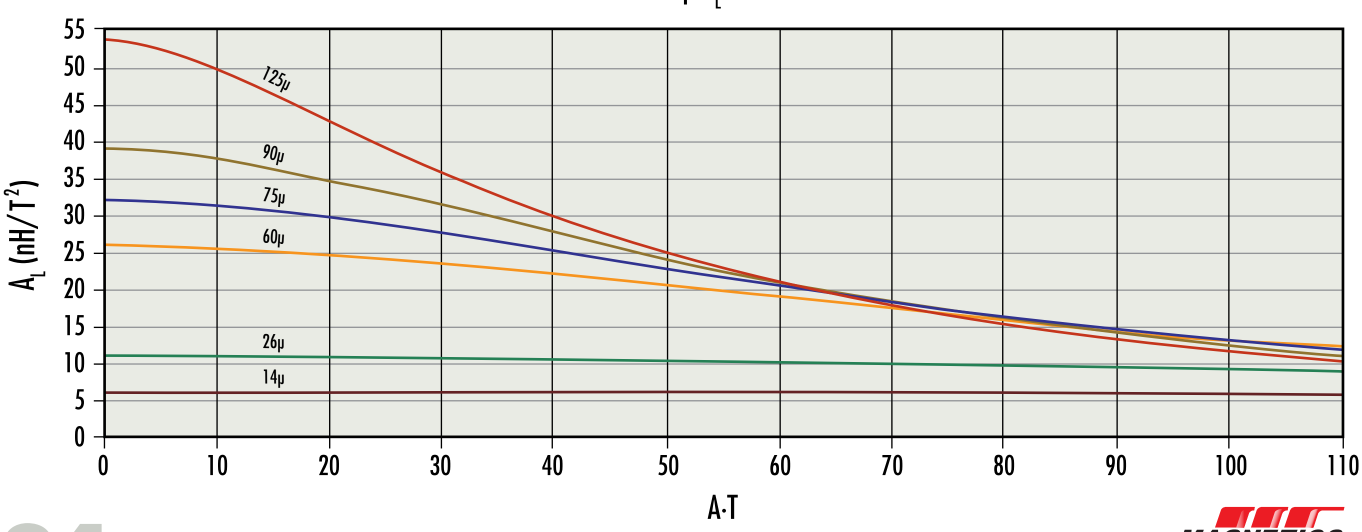
Wound Coil Dimensions*		
40% Winding Factor	OD	7.41 mm
	HT	3.87 mm
Completely Full Window	Max OD	9.12 mm
	Max HT	5.13 mm

Surface Area*	
Unwound Core	170 mm²
40% Winding Factor	190 mm²

Winding Turn Length*	
Winding Factor	Length/Turn (mm)
0%	11.4
20%	12.0
25%	12.2
30%	12.3
35%	12.4
40%	12.6
45%	12.7
50%	12.9
60%	13.2
70%	13.6

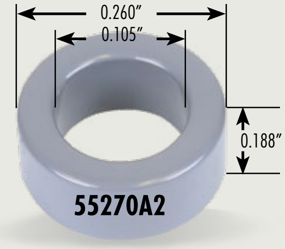
See Toroid Winding pg. 19

Kool Mμ A_L vs. DC Bias



6.60 mm OD

Core Dimensions	OD	ID	HT
Before Finish (nominal)	6.60 mm/0.260 in	2.67 mm/0.105 in	4.78 mm/0.188 in
After Finish (limits)	7.24 mm/0.285 in	2.16 mm/0.085 in	5.41 mm/0.213 in



Permeability (μ)	A_L ± 8% Kool Mμ A_L ± 12%	Part Number						
		Kool Mμ®	Kool Mμ® MAX	Kool Mμ® H*f*	XFLUX®	High Flux	Edge™	MPP
14	12	77273	-	-	-	58273	-	55273
26	21	77272	-	-	-	58272	-	55272
60	50	77271	-	-	-	58271	-	55271
75	62	77875	-	-	-	-	-	-
90	74	77874	-	-	-	-	-	-
125	103	77270	-	-	-	58270	-	55270
147	122	-	-	-	-	58269	-	55269
160	132	-	-	-	-	58268	-	55268
173	144	-	-	-	-	-	-	55264
200	165	-	-	-	-	-	-	55267
300	247	-	-	-	-	-	-	55265
550	466	-	-	-	-	-	-	55266

Physical and Magnetic Parameters	
Window Area	3.63 mm^2
Cross Section (A_e)	9.20 mm^2
Path Length (L_e)	13.6 mm
Effective Volume (V_e)	125 mm^3
Area Product	33.4 mm^4

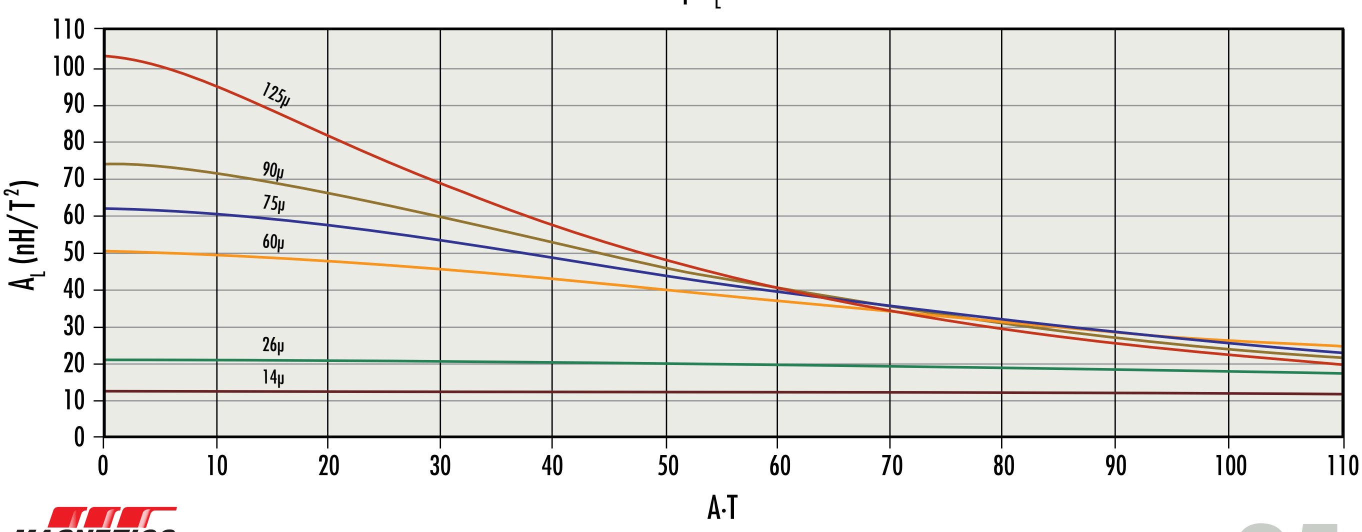
Wound Coil Dimensions*		
40% Winding Factor	OD	7.41 mm
	HT	6.11 mm
Completely Full Window	Max OD	9.17 mm
	Max HT	7.42 mm

Surface Area*	
Unwound Core	230 mm^2
40% Winding Factor	260 mm^2

Winding Turn Length*	
Winding Factor	Length/Turn (mm)
0%	15.9
20%	16.4
25%	16.6
30%	16.7
35%	16.9
40%	17.0
45%	17.2
50%	17.3
60%	17.7
70%	18.0

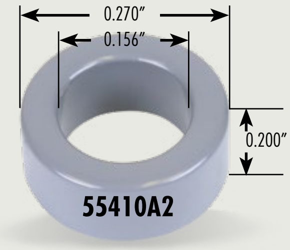
* *See Toroid Winding pg. 19*

Kool Mμ A_L vs. DC Bias



6.86 mm OD

Core Dimensions	OD	ID	HT
Before Finish (nominal)	6.86 mm/0.270 in	3.96 mm/0.156 in	5.08 mm/0.200 in
After Finish (limits)	7.49 mm/0.295 in	3.45 mm/0.136 in	5.72 mm/0.225 in



Permeability (µ)	A_L ± 8% Kool Mµ A_L ± 12%	Part Number						
		Kool Mµ®	Kool Mµ® MAX	Kool Mµ® Hƒ	XFLUX®	High Flux	Edge™	MPP
14	8	77413	-	-	-	58413	-	55413
26	14	77412	-	-	-	58412	-	55412
60	33	77411	-	-	-	58411	-	55411
75	42	77415	-	-	-	-	-	-
90	50	77414	-	-	-	-	-	-
125	70	77410	-	-	-	58410	-	55410
147	81	-	-	-	-	58409	-	55409
160	89	-	-	-	-	58408	-	55408
173	95	-	-	-	-	-	-	55404
200	112	-	-	-	-	-	-	55407
300	166	-	-	-	-	-	-	55405

Physical and Magnetic Parameters	
Window Area	9.35 mm²
Cross Section (A_e)	7.25 mm²
Path Length (L_e)	16.5 mm
Effective Volume (V_e)	120 mm³
Area Product	67.8 mm⁴

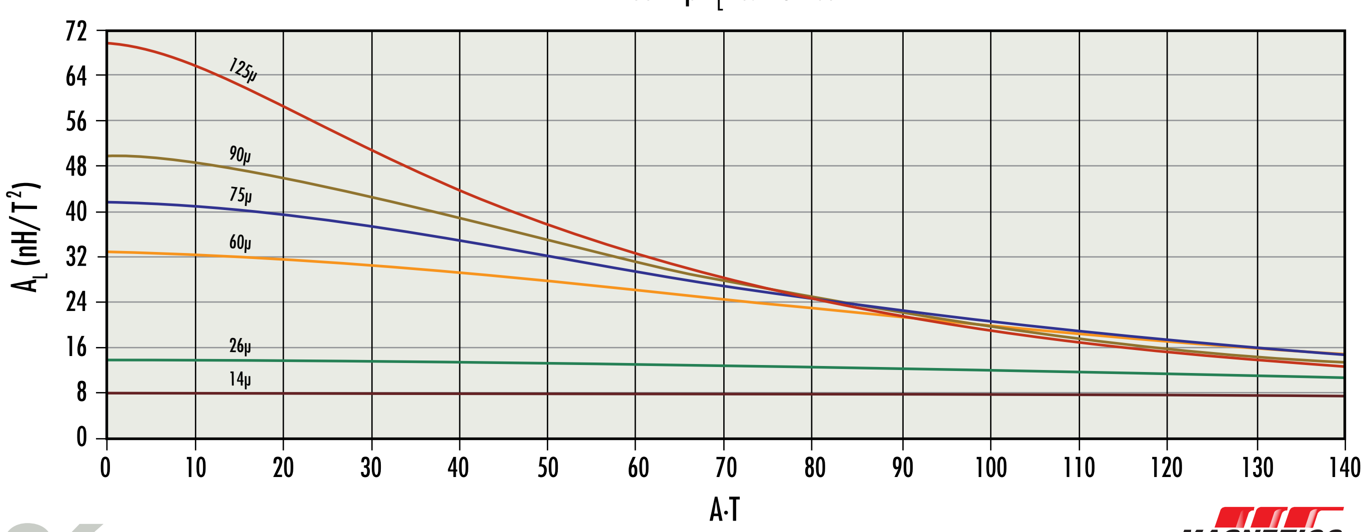
Winding Turn Length*	
Winding Factor	Length/Turn (mm)
0%	15.5
20%	16.4
25%	16.6
30%	16.8
35%	17.0
40%	17.3
45%	17.5
50%	17.8
60%	18.3
70%	18.9

** See Toroid Winding pg. 19*

Wound Coil Dimensions*		
40% Winding Factor	OD	8.06 mm
	HT	6.84 mm
Completely Full Window	Max OD	9.60 mm
	Max HT	10.0 mm

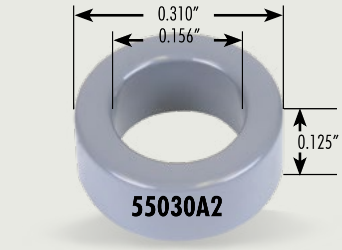
Surface Area*	
Unwound Core	260 mm²
40% Winding Factor	330 mm²

Kool Mµ A_L vs. DC Bias



7.87 mm OD

Core Dimensions	OD	ID	HT
Before Finish (nominal)	7.87 mm/0.310 in	3.96 mm/0.156 in	3.18 mm/0.125 in
After Finish (limits)	8.51 mm/0.335 in	3.45 mm/0.136 in	3.81 mm/0.150 in



Permeability (μ)	A_L ± 8% Kool Mμ A_L ± 12%	Part Number						
		Kool Mμ®	Kool Mμ® MAX	Kool Mμ® Hƒ	XFLUX®	High Flux	Edge™	MPP
14	6	77033	-	-	-	58033	-	55033
26	11	77032	-	-	-	58032	-	55032
60	25	77031	-	-	-	58031	-	55031
75	31	77835	-	-	-	-	-	-
90	37	77834	-	-	-	-	-	-
125	52	77030	-	-	-	58030	-	55030
147	62	-	-	-	-	58029	-	55029
160	66	-	-	-	-	58028	-	55028
173	73	-	-	-	-	-	-	55024
200	83	-	-	-	-	-	-	55027
300	124	-	-	-	-	-	-	55025
550	229	-	-	-	-	-	-	55026

Physical and Magnetic Parameters	
Window Area	9.35 mm²
Cross Section (A_e)	5.99 mm²
Path Length (L_e)	17.9 mm
Effective Volume (V_e)	107 mm³
Area Product	56.0 mm⁴

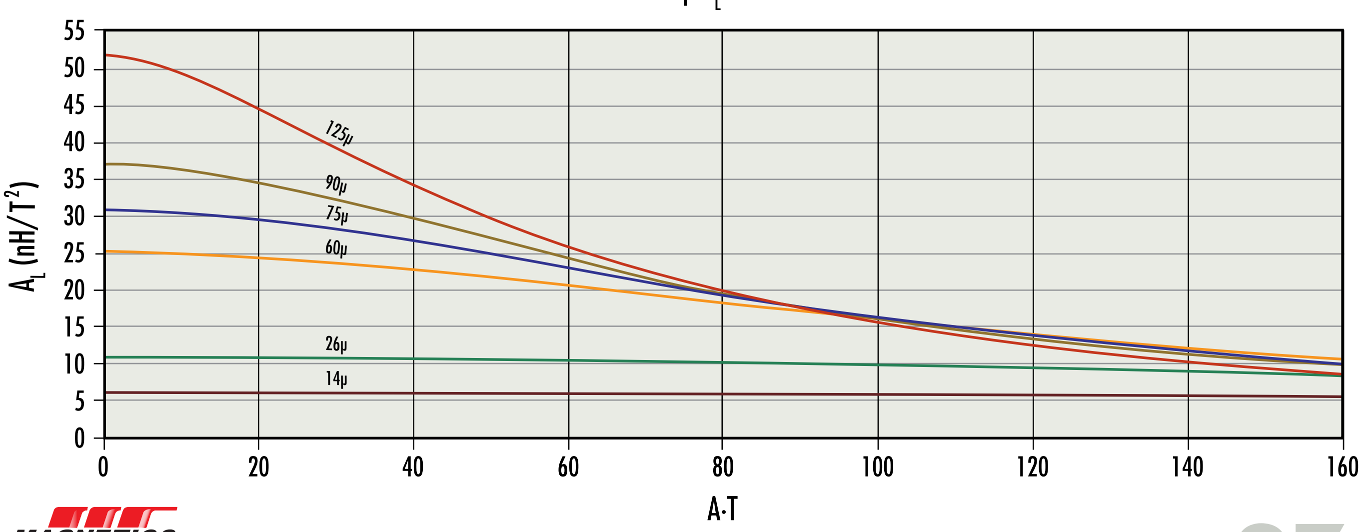
Wound Coil Dimensions*		
40% Winding Factor	OD	9.07 mm
	HT	4.93 mm
Completely Full Window	Max OD	11.0 mm
	Max HT	6.73 mm

Surface Area*	
Unwound Core	240 mm²
40% Winding Factor	310 mm²

Winding Turn Length*	
Winding Factor	Length/Turn (mm)
0%	12.7
20%	13.6
25%	13.8
30%	14.0
35%	14.3
40%	14.5
45%	14.7
50%	15.0
60%	15.5
70%	16.1

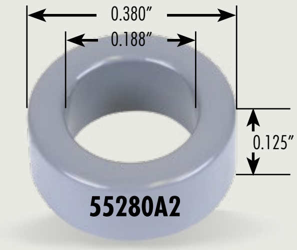
** See Toroid Winding pg. 19*

Kool Mμ A_L vs. DC Bias



9.65 mm OD

Core Dimensions	OD	ID	HT
Before Finish (nominal)	9.65 mm/0.380 in	4.78 mm/0.188 in	3.18 mm/0.125 in
After Finish (limits)	10.29 mm/0.405 in	4.27 mm/0.168 in	3.81 mm/0.150 in



Permeability (µ)	A_L ± 8% Kool Mµ A_L ± 12%	Part Number						
		Kool Mµ®	Kool Mµ® MAX	Kool Mµ® Hƒ	XFLUX®	High Flux	Edge™	MPP
14	6	77283	-	-	-	58283	-	55283
26	11	77282	-	-	-	58282	-	55282
60	25	77281	-	-	-	58281	-	55281
75	32	77885	-	-	-	-	-	-
90	38	77884	-	-	-	-	-	-
125	53	77280	-	-	-	58280	-	55280
147	63	-	-	-	-	58279	-	55279
160	68	-	-	-	-	58278	-	55278
173	74	-	-	-	-	-	-	55274
200	84	-	-	-	-	-	-	55277
300	128	-	-	-	-	-	-	55275
550	232	-	-	-	-	-	-	55276

Physical and Magnetic Parameters	
Window Area	14.3 mm^2
Cross Section (A_e)	7.52 mm^2
Path Length (L_e)	21.8 mm
Effective Volume (V_e)	164 mm^3
Area Product	107 mm^4

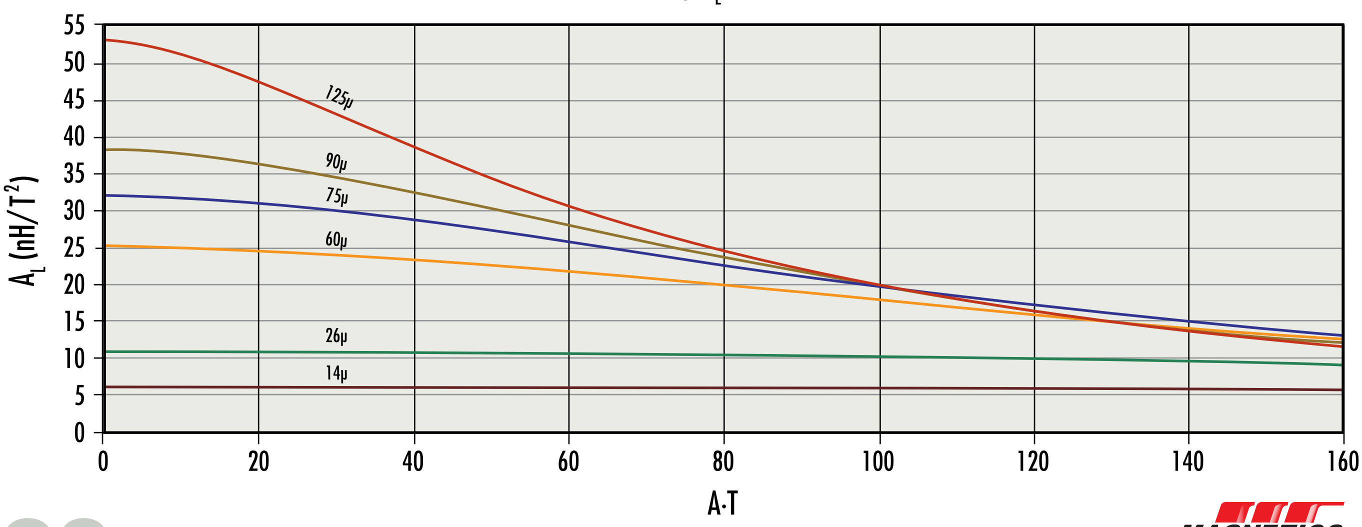
Winding Turn Length*	
Winding Factor	Length/Turn (mm)
0%	13.6
20%	14.7
25%	15.0
30%	15.3
35%	15.6
40%	15.9
45%	16.2
50%	16.5
60%	17.2
70%	17.9

Wound Coil Dimensions*		
40% Winding Factor	OD	11.0 mm
	HT	5.17 mm
Completely Full Window	Max OD	13.4 mm
	Max HT	7.44 mm

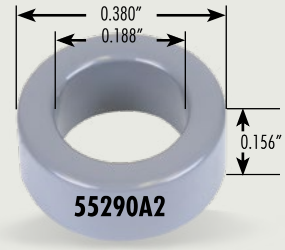
* See Toroid Winding pg. 19

Surface Area*	
Unwound Core	310 mm^2
40% Winding Factor	410 mm^2

Kool Mµ A_L vs. DC Bias



9.65 mm OD



Core Dimensions	OD	ID	HT
Before Finish (nominal)	9.65 mm/0.380 in	4.78 mm/0.188 in	3.96 mm/0.156 in
After Finish (limits)	10.29 mm/0.405 in	4.27 mm/0.168 in	4.60 mm/0.181 in

Permeability (µ)	A_L ± 8% Kool Mµ A_L ± 12%	Part Number						
		Kool Mµ®	Kool Mµ® MAX	Kool Mµ® H*f*	XFLUX®	High Flux	Edge™	MPP
14	7	77293	-	-	-	58293	-	55293
26	14	77292	-	-	-	58292	-	55292
60	32	77291	-	-	-	58291	-	55291
75	40	77295	-	-	-	-	-	-
90	48	77294	-	-	-	-	-	-
125	66	77290	-	-	-	58290	-	55290
147	78	-	-	-	-	58289	-	55289
160	84	-	-	-	-	58288	-	55288
173	92	-	-	-	-	-	-	55284
200	105	-	-	-	-	-	-	55287
300	159	-	-	-	-	-	-	55285
550	290	-	-	-	-	-	-	55286

Physical and Magnetic Parameters	
Window Area	14.3 mm^2
Cross Section (A_e)	9.45 mm^2
Path Length (L_e)	21.8 mm
Effective Volume (V_e)	206 mm^3
Area Product	135 mm^4

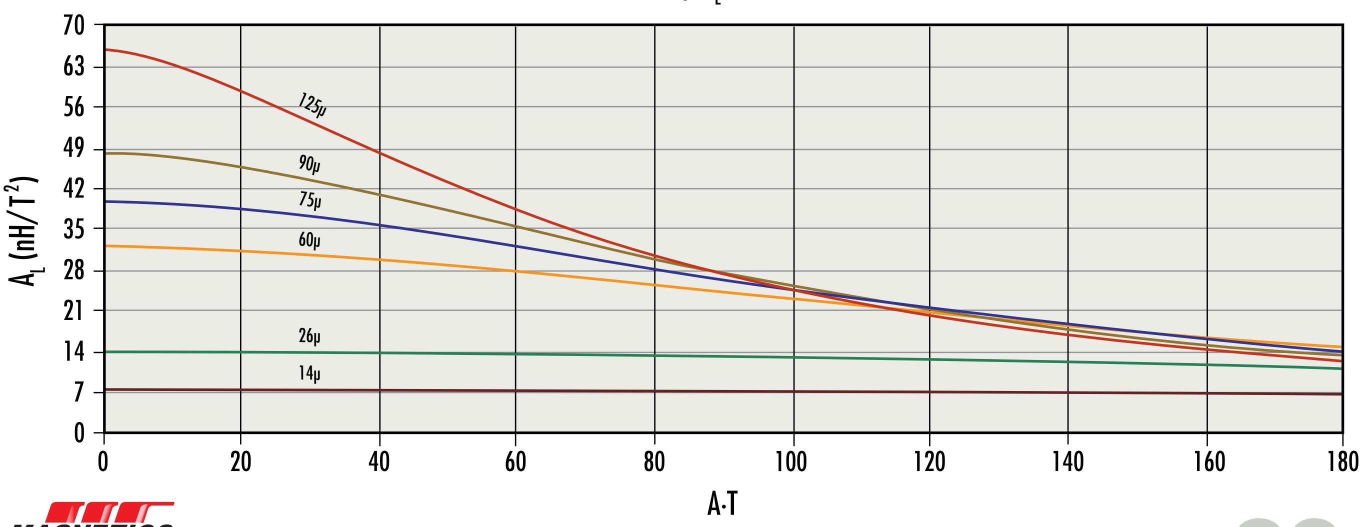
Wound Coil Dimensions*		
40% Winding Factor	OD	11.0 mm
	HT	5.96 mm
Completely Full Window	Max OD	13.4 mm
	Max HT	8.20 mm

Surface Area*	
Unwound Core	350 mm^2
40% Winding Factor	450 mm^2

Winding Turn Length*	
Winding Factor	Length/Turn (mm)
0%	15.2
20%	16.4
25%	16.6
30%	16.9
35%	17.2
40%	17.4
45%	17.8
50%	18.1
60%	18.7
70%	19.5

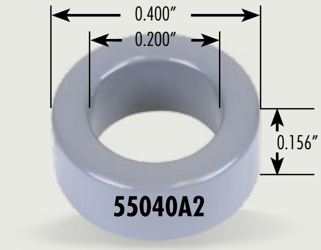
* See Toroid Winding pg.19

Kool Mµ A_L vs. DC Bias



10.2 mm OD

Core Dimensions	OD	ID	HT
Before Finish (nominal)	10.16 mm/0.400 in	5.08 mm/0.200 in	3.96 mm/0.156 in
After Finish (limits)	10.80 mm/0.425 in	4.57 mm/0.180 in	4.60 mm/0.181 in



Permeability (μ)	A_L ± 8% Kool Mμ A_L ± 12%	Part Number						
		Kool Mμ®	Kool Mμ® MAX	Kool Mμ® Hƒ	XFlux®	High Flux	Edge™	MPP
14	7	77043	-	-	-	58043	-	55043
26	14	77042	-	-	-	58042	-	55042
60	32	77041	-	-	-	58041	-	55041
75	40	77845	-	-	-	-	-	-
90	48	77844	-	-	-	-	-	-
125	66	77040	-	-	-	58040	-	55040
147	78	-	-	-	-	58039	-	55039
160	84	-	-	-	-	58038	-	55038
173	92	-	-	-	-	-	-	55034
200	105	-	-	-	-	-	-	55037
300	159	-	-	-	-	-	-	55035
550	290	-	-	-	-	-	-	55036

Physical and Magnetic Parameters	
Window Area	16.4 mm^2
Cross Section (A_e)	9.57 mm^2
Path Length (L_e)	23.0 mm
Effective Volume (V_e)	220 mm^3
Area Product	156 mm^4

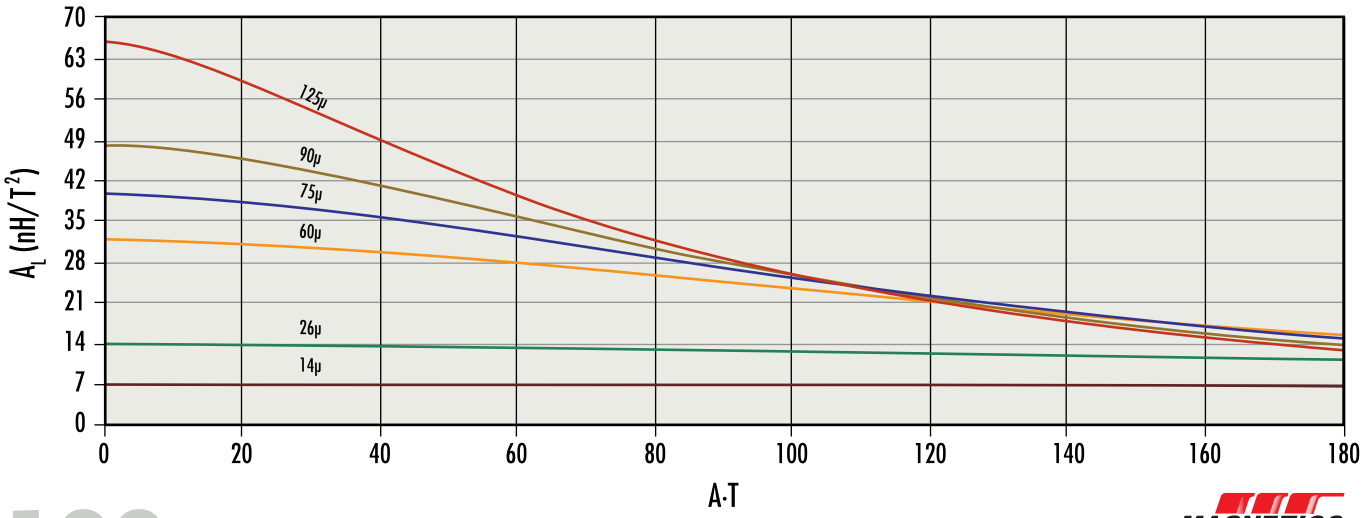
Wound Coil Dimensions*		
40% Winding Factor	OD	11.5 mm
	HT	5.96 mm
Completely Full Window	Max OD	14.1 mm
	Max HT	8.46 mm

Surface Area*	
Unwound Core	370 mm^2
40% Winding Factor	480 mm^2

Winding Turn Length*	
Winding Factor	Length/Turn (mm)
0%	15.4
20%	16.6
25%	16.9
30%	17.1
35%	17.5
40%	17.8
45%	18.1
50%	18.4
60%	19.2
70%	20.0

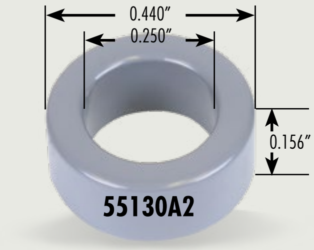
* See Toroid Winding pg. 19

Kool Mμ A_L vs. DC Bias



11.2 mm OD

Core Dimensions	OD	ID	HT
Before Finish (nominal)	11.18 mm/0.440 in	6.35 mm/0.250 in	3.96 mm/0.156 in
After Finish (limits)	11.81 mm/0.465 in	5.84 mm/0.230 in	4.60 mm/0.181 in



Permeability (µ)	A_L ± 8% Kool Mµ A_L ± 12%	Part Number						
		Kool Mµ®	Kool Mµ® MAX	Kool Mµ® Hƒ	XFlux®	High Flux	Edge™	MPP
14	6	77133	-	-	-	58133	-	55133
26	11	77132	-	-	-	58132	-	55132
60	26	77131	-	-	-	58131	-	55131
75	32	77335	-	-	-	-	-	-
90	38	77334	-	-	-	-	-	-
125	53	77130	-	-	-	58130	-	55130
147	63	-	-	-	-	58129	-	55129
160	68	-	-	-	-	58128	-	55128
173	74	-	-	-	-	-	-	55124
200	85	-	-	-	-	-	-	55127
300	127	-	-	-	-	-	-	55125

Physical and Magnetic Parameters	
Window Area	26.8 mm²
Cross Section (A_e)	9.06 mm²
Path Length (L_e)	26.9 mm
Effective Volume (V_e)	244 mm³
Area Product	243 mm⁴

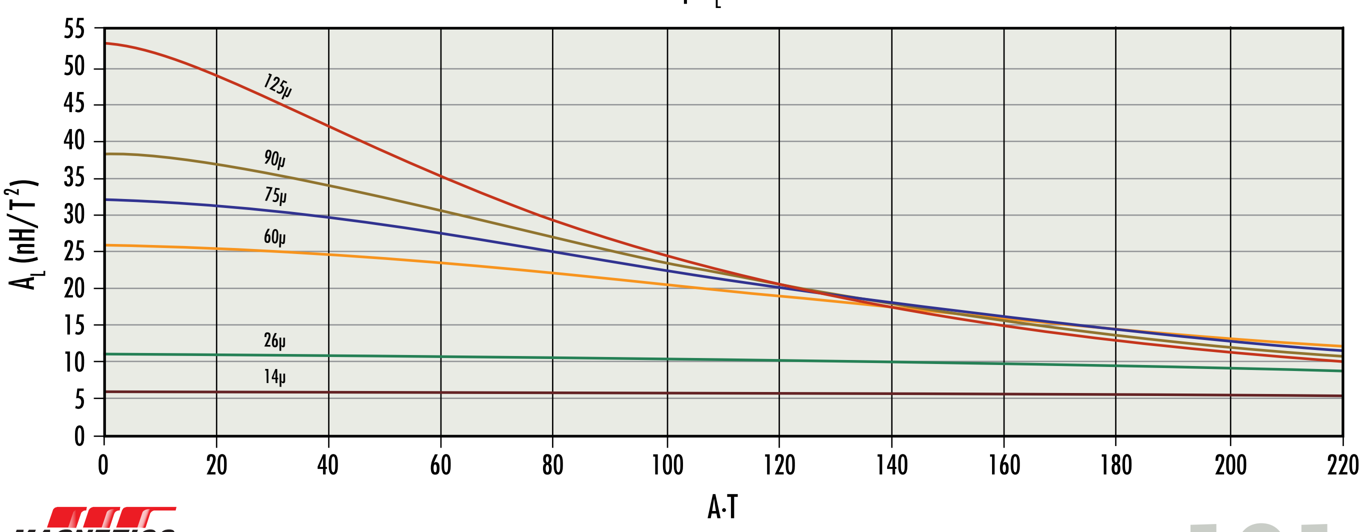
Wound Coil Dimensions*		
40% Winding Factor	OD	12.9 mm
	HT	6.53 mm
Completely Full Window	Max OD	15.7 mm
	Max HT	8.97 mm

Surface Area*	
Unwound Core	420 mm²
40% Winding Factor	600 mm²

Winding Turn Length*	
Winding Factor	Length/Turn (mm)
0%	15.2
20%	16.7
25%	17.0
30%	17.4
35%	17.8
40%	18.1
45%	18.6
50%	19.0
60%	19.9
70%	20.9

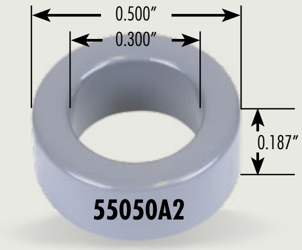
** See Toroid Winding pg. 19*

Kool Mµ A_L vs. DC Bias



12.7 mm OD

Core Dimensions	OD	ID	HT
Before Finish (nominal)	12.70 mm/0.500 in	7.62 mm/0.300 in	4.75 mm/0.187 in
After Finish (limits)	13.46 mm/0.530 in	6.99 mm/0.275 in	5.51 mm/0.217 in



Permeability (µ)	A_L ± 8%	Part Number						
		Kool Mµ®	Kool Mµ® MAX	Kool Mµ® Hƒ	XFLUX®	High Flux	Edge™	MPP
14	6.4	77053	-	-	-	58053	-	55053
19	9	-	79057	-	78057	-	-	
26	12	77052	79052	76052	78052	58052	59052	55052
40	18	77056	79056	-	78056	-	-	-
60	27	77051	79051	76051	78051	58051	59051	55051
75	34	77055	-	-	78055	-	-	-
90	40	77054	-	-	78054	-	-	-
125	56	77050	-	-	78050	58050	-	55050
147	67	-	-	-	-	58049	-	55049
160	72	-	-	-	-	58048	-	55048
173	79	-	-	-	-	-	-	55044
200	90	-	-	-	-	-	-	55047
300	134	-	-	-	-	-	-	55045
550	255	-	-	-	-	-	-	55046

Physical and Magnetic Parameters	
Window Area	38.3 mm^2
Cross Section (A_e)	10.9 mm^2
Path Length (L_e)	31.2 mm
Effective Volume (V_e)	340 mm^3
Area Product	417 mm^4

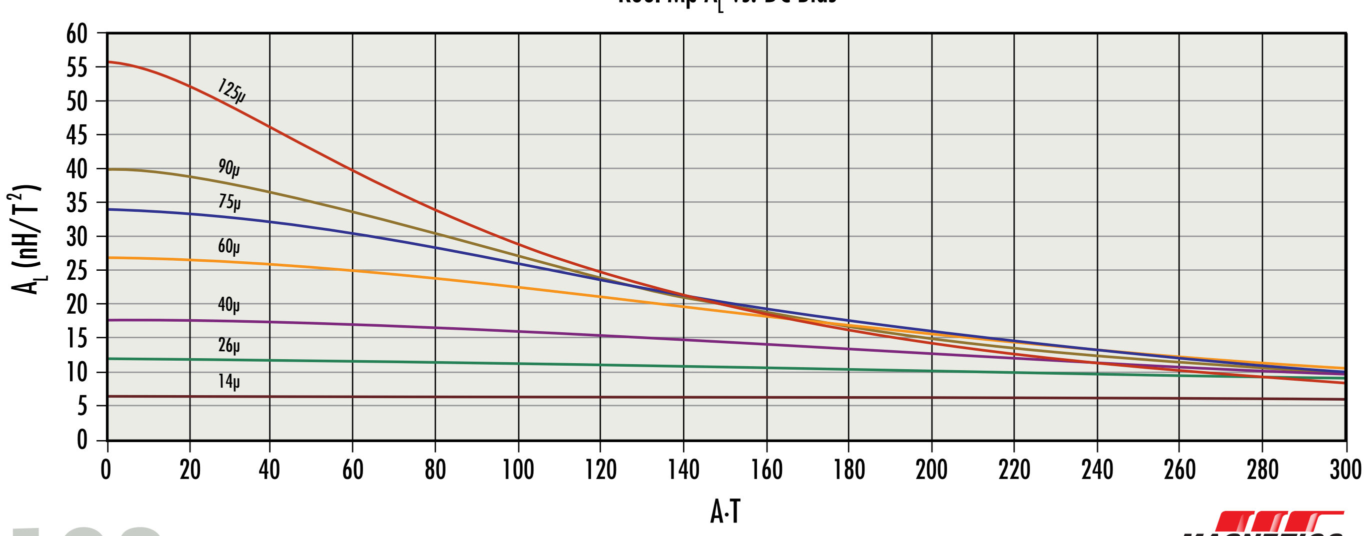
Wound Coil Dimensions*		
40% Winding Factor	OD	14.6 mm
	HT	7.66 mm
Completely Full Window	Max OD	18.2 mm
	Max HT	11.5 mm

Surface Area*	
Unwound Core	560 mm^2
40% Winding Factor	800 mm^2

Winding Turn Length*	
Winding Factor	Length/Turn (mm)
0%	17.5
20%	19.3
25%	19.8
30%	20.1
35%	20.7
40%	21.1
45%	21.7
50%	22.1
60%	23.2
70%	24.5

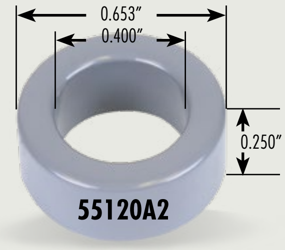
** See Toroid Winding pg. 19*

Kool Mµ A_L vs. DC Bias



16.6 mm OD

Core Dimensions	OD	ID	HT
Before Finish (nominal)	16.59 mm/0.653 in	10.16 mm/0.400 in	6.35 mm/0.250 in
After Finish (limits)	17.27 mm/0.680 in	9.53 mm/0.375 in	7.11 mm/0.280 in



Permeability (μ)	A_L ± 8%	Part Number						
		Kool Mμ®	Kool Mμ® MAX	Kool Mμ® *Hf*	XFLUX®	High Flux	Edge™	MPP
14	8	77123	-	-	-	58123	-	55123
19	11	-	79226	-	78226	-	-	
26	15	77122	79122	76122	78122	58122	59122	55122
40	24	77113	79113	-	78113	-	-	-
60	35	77121	79121	76121	78121	58121	59121	55121
75	43	77225	-	-	78225	-	-	-
90	52	77224	-	-	78224	-	-	-
125	72	77120	-	-	78120	58120	-	55120
147	88	-	-	-	-	58119	-	55119
160	92	-	-	-	-	58118	-	55118
173	104	-	-	-	-	-	-	55114
200	115	-	-	-	-	-	-	55117
300	173	-	-	-	-	-	-	55115
550	317	-	-	-	-	-	-	55116

Physical and Magnetic Parameters	
Window Area	71.2 mm^2
Cross Section (A_e)	19.2 mm^2
Path Length (L_e)	41.2 mm
Effective Volume (V_e)	791 mm^3
Area Product	1,370 mm^4

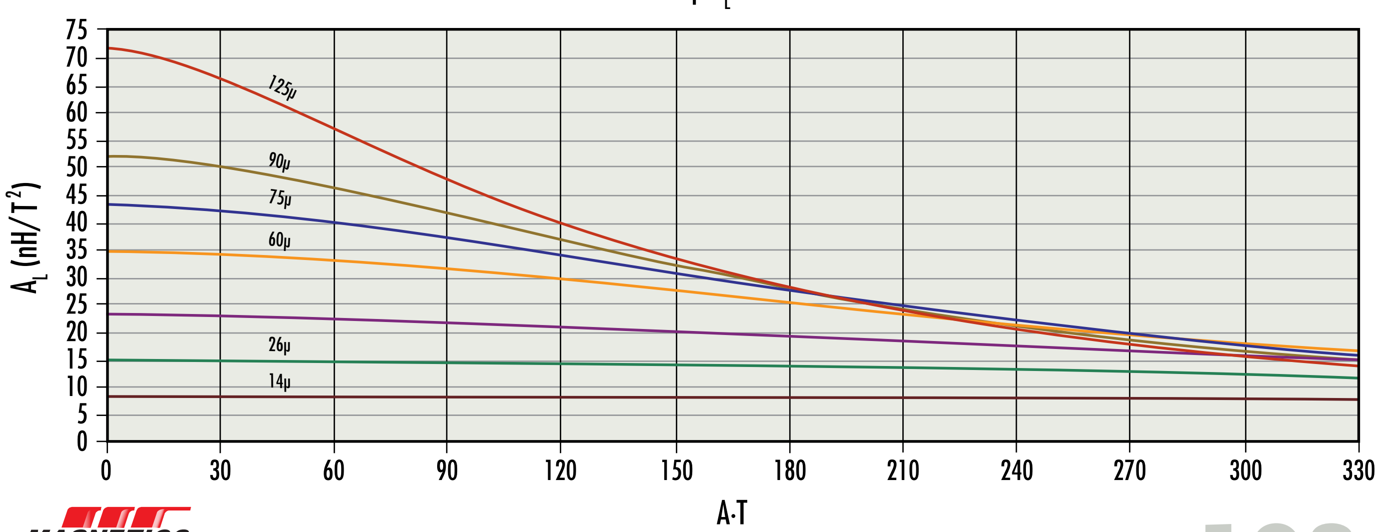
Wound Coil Dimensions*		
40% Winding Factor	OD	18.8 mm
	HT	10.1 mm
Completely Full Window	Max OD	23.7 mm
	Max HT	15.2 mm

Surface Area*	
Unwound Core	920 mm^2
40% Winding Factor	1,300 mm^2

Winding Turn Length*	
Winding Factor	Length/Turn (mm)
0%	22.0
20%	24.4
25%	25.0
30%	25.6
35%	26.2
40%	26.8
45%	27.6
50%	28.3
60%	29.7
70%	31.4

** See Toroid Winding pg. 19*

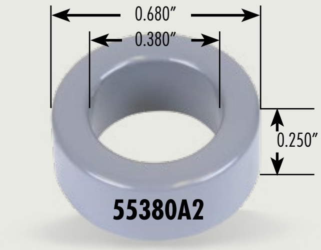
Kool Mμ A_L vs. DC Bias



MAGNETICS®

17.3 mm OD

Core Dimensions	OD	ID	HT
Before Finish (nominal)	17.27 mm/0.680 in	9.65 mm/0.380 in	6.35 mm/0.250 in
After Finish (limits)	18.03 mm/0.710 in	9.02 mm/0.355 in	7.11 mm/0.280 in



Permeability (µ)	A_L ± 8%	Part Number						
		Kool Mµ®	Kool Mµ® MAX	Kool Mµ® H*f*	XFlux®	High Flux	Edge™	MPP
14	10	77383	-	-	-	58383	-	55383
19	14	-	79387	-	78387	-	-	-
26	19	77382	79382	76382	78382	58382	59382	55382
40	28	77386	79386	-	78386	-	-	-
60	43	77381	79381	76381	78381	58381	59381	55381
75	53	77385	-	-	78385	-	-	-
90	64	77384	-	-	78384	-	-	-
125	89	77380	-	-	78380	58380	-	55380
147	105	-	-	-	-	58379	-	55379
160	114	-	-	-	-	58378	-	55378
173	123	-	-	-	-	-	-	55374
200	142	-	-	-	-	-	-	55377
300	214	-	-	-	-	-	-	55375

Physical and Magnetic Parameters	
Window Area	63.8 mm^2
Cross Section (A_e)	23.2 mm^2
Path Length (L_e)	41.4 mm
Effective Volume (V_e)	960 mm^3
Area Product	1,480 mm^4

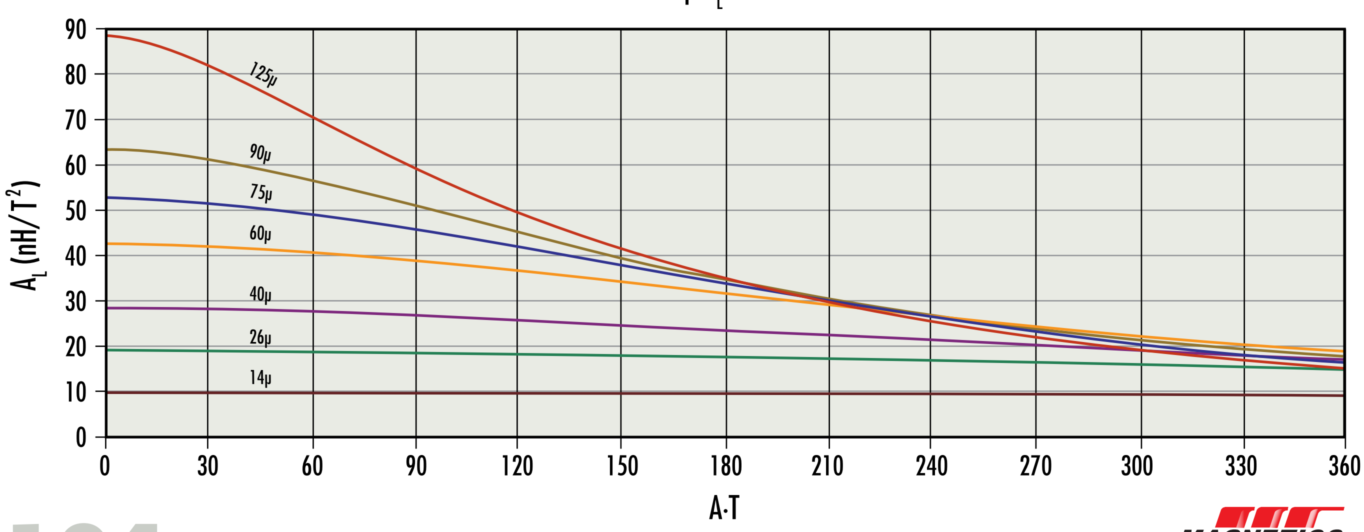
Wound Coil Dimensions*		
40% Winding Factor	OD	19.6 mm
	HT	10.1 mm
Completely Full Window	Max OD	24.9 mm
	Max HT	16.3 mm

Surface Area*	
Unwound Core	990 mm^2
40% Winding Factor	1,400 mm^2

Winding Turn Length*	
Winding Factor	Length/Turn (mm)
0%	23.2
20%	25.6
25%	26.2
30%	26.6
35%	27.4
40%	28.0
45%	28.6
50%	29.3
60%	30.8
70%	32.4

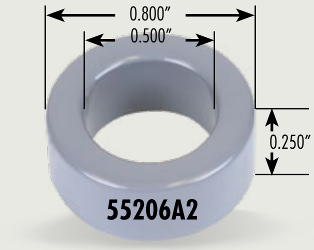
* See Toroid Winding pg. 19

Kool Mµ A_L vs. DC Bias



20.3 mm OD

Core Dimensions	OD	ID	HT
Before Finish (nominal)	20.32 mm/0.800 in	12.70 mm/0.500 in	6.35 mm/0.250 in
After Finish (limits)	21.08 mm/0.830 in	12.07 mm/0.475 in	7.11 mm/0.280 in



Permeability (µ)	A_L ± 8%	Part Number						
		Kool Mµ®	Kool Mµ® MAX	Kool Mµ® H*f*	XFlux®	High Flux	Edge™	MPP
14	7.8	77209	-	-	-	58209	-	55209
19	10	-	79849	-	78849	-	-	-
26	14	77208	79208	76208	78208	58208	59208	55208
40	21	77847	79847	-	78847	-	-	-
60	32	77848	79848	76848	78848	58848	59848	55848
75	41	77211	-	-	78211	-	-	-
90	49	77210	-	-	78210	-	-	-
125	68	77206	-	-	78206	58206	-	55206
147	81	-	-	-	-	58205	-	55205
160	87	-	-	-	-	58204	-	55204
173	96	-	-	-	-	-	-	55200
200	109	-	-	-	-	-	-	55203
300	163	-	-	-	-	-	-	55201
550	320	-	-	-	-	-	-	55202

Physical and Magnetic Parameters	
Window Area	114 mm^2
Cross Section (A_e)	22.1 mm^2
Path Length (L_e)	50.9 mm
Effective Volume (V_e)	1,120 mm^3
Area Product	2,520 mm^4

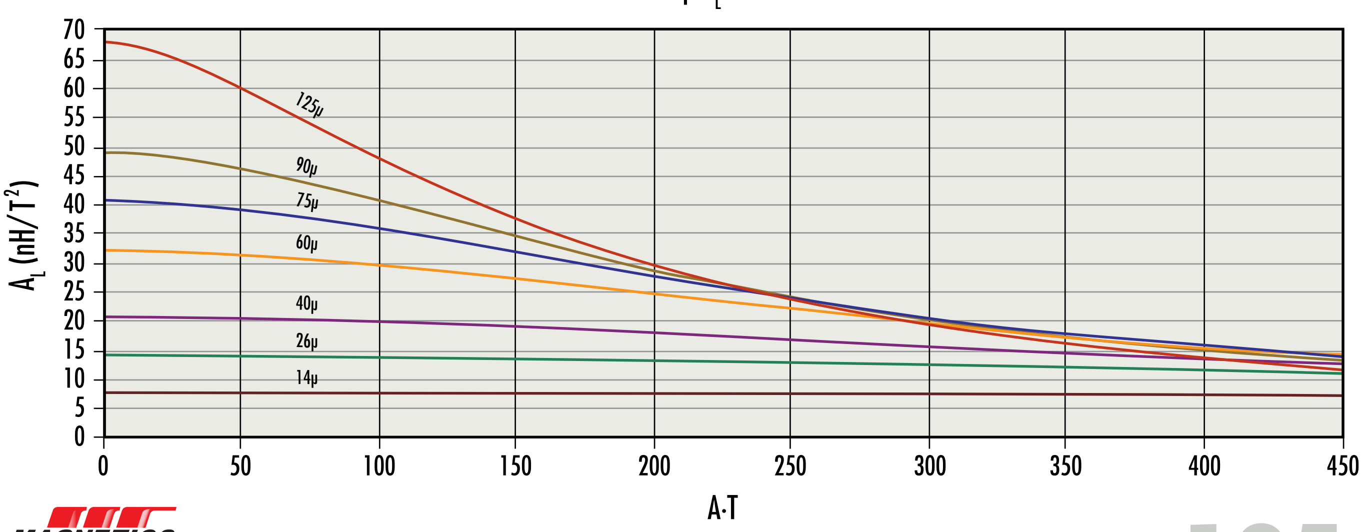
Wound Coil Dimensions*		
40% Winding Factor	OD	22.9 mm
	HT	10.7 mm
Completely Full Window	Max OD	29.2 mm
	Max HT	17.4 mm

Surface Area*	
Unwound Core	1,200 mm^2
40% Winding Factor	1,900 mm^2

Winding Turn Length*	
Winding Factor	Length/Turn (mm)
0%	23.2
20%	26.3
25%	27.0
30%	27.8
35%	28.6
40%	29.3
45%	30.3
50%	31.2
60%	32.9
70%	35.1

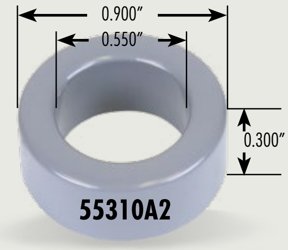
** See Toroid Winding pg. 19*

Kool Mµ A_L vs. DC Bias



22.9 mm OD

Core Dimensions	OD	ID	HT
Before Finish (nominal)	22.86 mm/0.900 in	13.97 mm/0.550 in	7.62 mm/0.300 in
After Finish (limits)	23.62 mm/0.930 in	13.34 mm/0.525 in	8.38 mm/0.330 in



Permeability (μ)	A_L ± 8%	Part Number						
		Kool Mμ®	Kool Mμ® MAX	Kool Mμ® H*f*	XFLUX®	High Flux	Edge™	MPP
14	9.9	77313	-	-	-	58313	-	55313
19	14	-	79303	-	78303	-	-	-
26	19	77312	79312	76312	78312	58312	59312	55312
40	29	77316	79316	-	78316	-	-	-
60	43	77059	79059	76059	78059	58059	59059	55059
75	54	77315	-	-	78315	-	-	-
90	65	77314	-	-	78314	-	-	-
125	90	77310	-	-	78310	58310	-	55310
147	106	-	-	-	-	58309	-	55309
160	115	-	-	-	-	58308	-	55308
173	124	-	-	-	-	-	-	55304
200	144	-	-	-	-	-	-	55307
300	216	-	-	-	-	-	-	55305
550	396	-	-	-	-	-	-	55306

Physical and Magnetic Parameters	
Window Area	139 mm^2
Cross Section (A_e)	31.7 mm^2
Path Length (L_e)	56.7 mm
Effective Volume (V_e)	1,800 mm^3
Area Product	4,430 mm^4

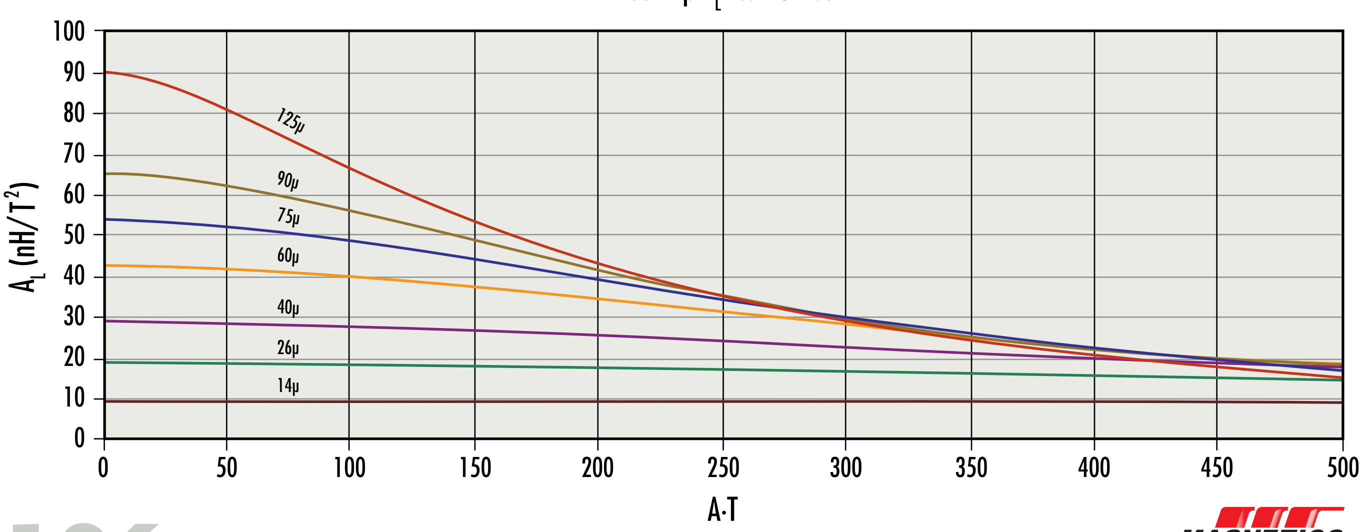
Wound Coil Dimensions*		
40% Winding Factor	OD	25.7 mm
	HT	12.4 mm
Completely Full Window	Max OD	32.6 mm
	Max HT	19.8 mm

Surface Area*	
Unwound Core	1,600 mm^2
40% Winding Factor	2,400 mm^2

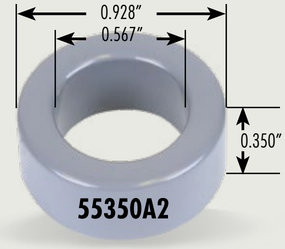
Winding Turn Length*	
Winding Factor	Length/Turn (mm)
0%	27.0
20%	30.5
25%	31.3
30%	32.0
35%	33.1
40%	33.9
45%	34.9
50%	35.9
60%	38.0
70%	40.4

** See Toroid Winding pg. 19*

Kool Mμ A_L vs. DC Bias



23.6 mm OD



Core Dimensions	OD	ID	HT
Before Finish (nominal)	23.57 mm/0.928 in	14.40 mm/0.567 in	8.89 mm/0.350 in
After Finish (limits)	24.33 mm/0.958 in	13.77 mm/0.542 in	9.65 mm/0.380 in

Permeability (µ)	A_L ± 8%	Part Number						
		Kool Mµ®	Kool Mµ® MAX	Kool Mµ® *Hf*	XFLUX®	High Flux	Edge™	MPP
14	12	77353	-	-	-	58353	-	55353
19	16	-	79357	-	78357	-	-	-
26	22	77352	79352	76352	78352	58352	59352	55352
40	34	77356	79356	-	78356	-	-	-
60	51	77351	79351	76351	78351	58351	59351	55351
75	62	77355	-	-	78355	-	-	-
90	76	77354	-	-	78354	-	-	-
125	105	77350	-	-	78350	58350	-	55350
147	124	-	-	-	-	58349	-	55349
160	135	-	-	-	-	58348	-	55348
173	146	-	-	-	-	-	-	55344
200	169	-	-	-	-	-	-	55347
300	253	-	-	-	-	-	-	55345

Physical and Magnetic Parameters	
Window Area	149 mm^2
Cross Section (A_e)	38.8 mm^2
Path Length (L_e)	58.8 mm
Effective Volume (V_e)	2,280 mm^3
Area Product	5,770 mm^4

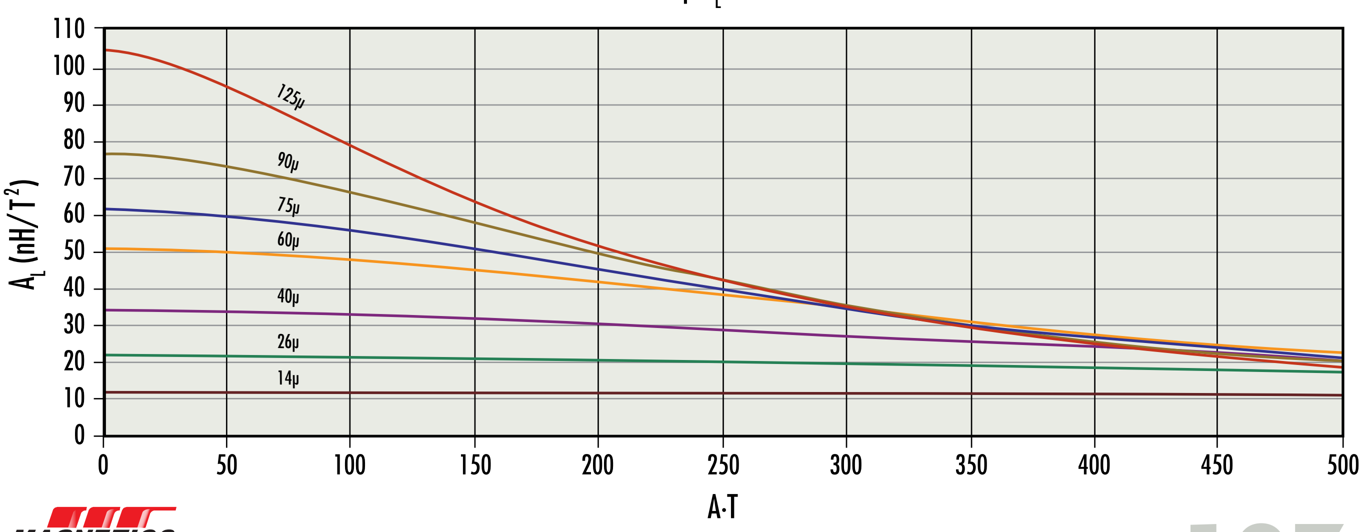
Wound Coil Dimensions*		
40% Winding Factor	OD	26.7 mm
	HT	14.2 mm
Completely Full Window	Max OD	33.5 mm
	Max HT	21.4 mm

Surface Area*	
Unwound Core	1,800 mm^2
40% Winding Factor	2,700 mm^2

Winding Turn Length*	
Winding Factor	Length/Turn (mm)
0%	29.8
20%	33.4
25%	34.2
30%	35.0
35%	36.1
40%	36.9
45%	38.0
50%	38.9
60%	41.1
70%	43.6

** See Toroid Winding pg. 19*

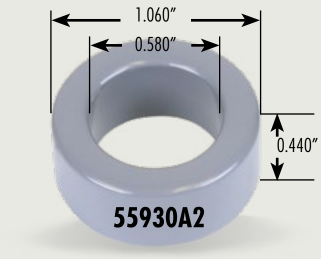
Kool Mµ A_L vs. DC Bias



Core Data

26.9 mm OD

Core Dimensions	OD	ID	HT
Before Finish (nominal)	26.92 mm/1.060 in	14.73 mm/0.580 in	11.18 mm/0.440 in
After Finish (limits)	27.69 mm/1.090 in	14.10 mm/0.555 in	11.94 mm/0.470 in



Permeability (μ)	A_L ± 8%	Part Number						
		Kool Mμ®	Kool Mμ® MAX	Kool Mμ® H*f*	XFLUX®	High Flux	Edge™	MPP
14	18	-	79993	-	-	58933	-	55933
19	23	-	79937	-	78937	-	-	-
26	32	77932	79932	76932	78932	58932	59932	55932
40	50	77936	79936	-	78936	-	-	-
60	75	77894	79894	76894	78894	58894	59894	55894
75	94	77935	-	-	78935	-	-	-
90	113	77934	-	-	78934	-	-	-
125	157	77930	-	-	78930	58930	-	55930
147	185	-	-	-	-	58929	-	55929
160	201	-	-	-	-	58928	-	55928
173	217	-	-	-	-	-	-	55924
200	251	-	-	-	-	-	-	55927
300	377	-	-	-	-	-	-	55925
550	740	-	-	-	-	-	-	55926

Physical and Magnetic Parameters	
Window Area	156 mm^2
Cross Section (A_e)	65.4 mm^2
Path Length (L_e)	63.5 mm
Effective Volume (V_e)	4,150 mm^3
Area Product	10,200 mm^4

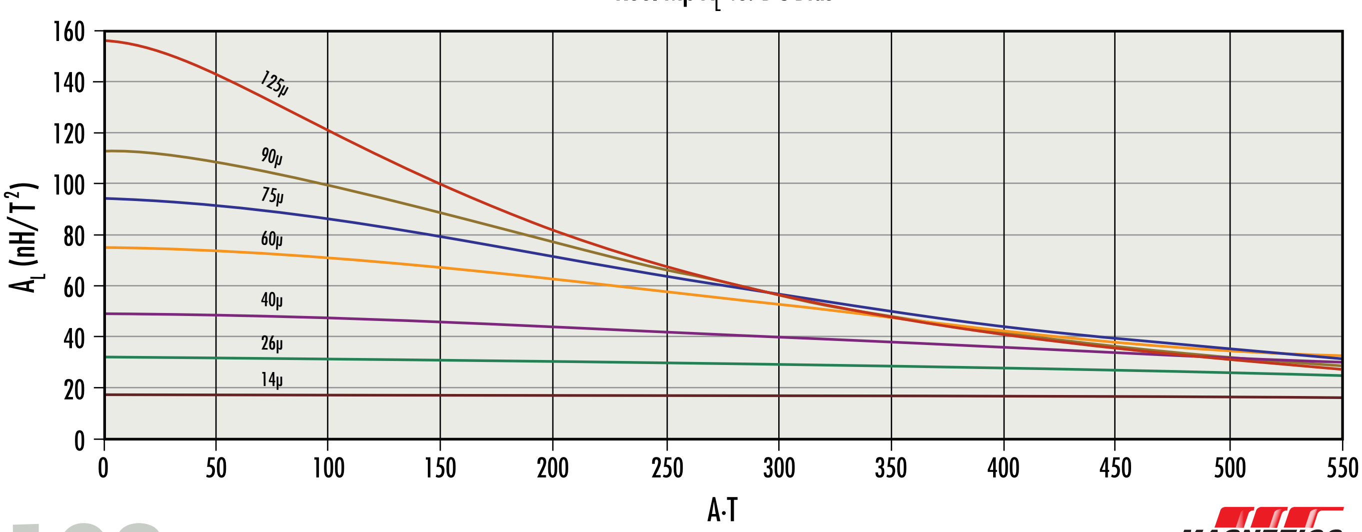
Wound Coil Dimensions*		
40% Winding Factor	OD	30.0 mm
	HT	16.5 mm
Completely Full Window	Max OD	37.3 mm
	Max HT	24.0 mm

Surface Area*	
Unwound Core	2,400 mm^2
40% Winding Factor	3,500 mm^2

Winding Turn Length*	
Winding Factor	Length/Turn (mm)
0%	37.5
20%	41.1
25%	41.9
30%	42.8
35%	43.8
40%	44.6
45%	45.7
50%	46.6
60%	48.8
70%	51.3

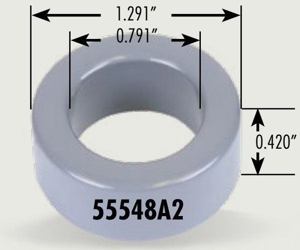
*See Toroid Winding pg. 19

Kool Mμ A_L vs. DC Bias



32.8 mm OD

Core Dimensions	OD	ID	HT
Before Finish (nominal)	32.79 mm/1.291 in	20.09 mm/0.791 in	10.67 mm/0.420 in
After Finish (limits)	33.66 mm/1.325 in	19.46 mm/0.766 in	11.43 mm/0.450 in



Permeability (µ)	A_L ± 8%	Part Number						
		Kool Mµ®	Kool Mµ® MAX	Kool Mµ® Hƒ	XFLUX®	High Flux	Edge™	MPP
14	14	77551	79551	-	-	58551	-	55551
19	20	-	79554	-	78554	-	-	-
26	28	77550	79550	76550	78550	58550	59550	55550
40	41	77555	79555	-	78555	-	-	-
60	61	77071	79071	76071	78071	58071	59071	55071
75	76	77553	-	-	78553	-	-	-
90	91	77552	-	-	78552	-	-	-
125	127	77548	-	-	78548	58548	-	55548
147	150	-	-	-	-	58547	-	55547
160	163	-	-	-	-	58546	-	55546
173	176	-	-	-	-	-	-	55542
200	203	-	-	-	-	-	-	55545
300	305	-	-	-	-	-	-	55543
550	559	-	-	-	-	-	-	55544

Physical and Magnetic Parameters	
Window Area	297 mm²
Cross Section (A_e)	65.6 mm²
Path Length (L_e)	81.4 mm
Effective Volume (V_e)	5,340 mm³
Area Product	19,500 mm⁴

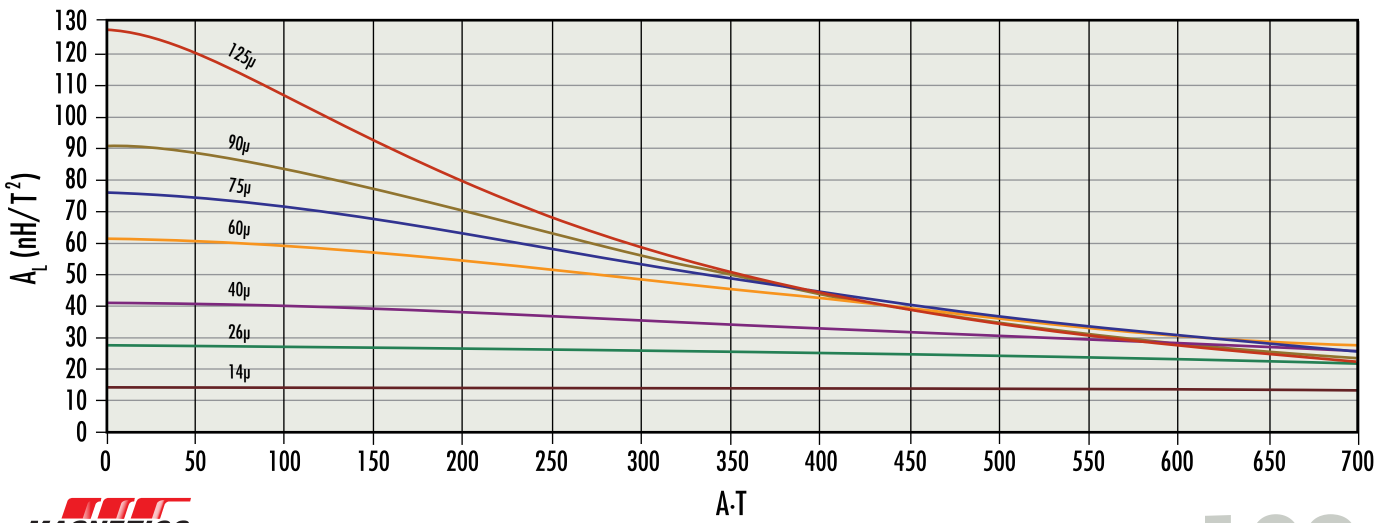
Wound Coil Dimensions*		
40% Winding Factor	OD	36.8 mm
	HT	17.8 mm
Completely Full Window	Max OD	46.7 mm
	Max HT	28.0 mm

Surface Area*	
Unwound Core	3,100 mm²
40% Winding Factor	4,900 mm²

Winding Turn Length*	
Winding Factor	Length/Turn (mm)
0%	37.1
20%	42.1
25%	43.2
30%	44.4
35%	45.9
40%	46.9
45%	48.5
50%	50.0
60%	52.8
70%	56.3

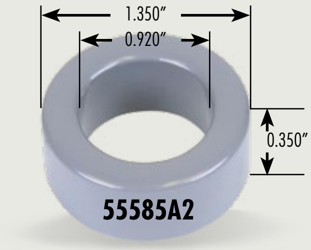
** See Toroid Winding pg. 19*

Kool Mµ A_L vs. DC Bias



34.3 mm OD

Core Dimensions	OD	ID	HT
Before Finish (nominal)	34.29 mm/1.350 in	23.37 mm/0.920 in	8.89 mm/0.350 in
After Finish (limits)	35.18 mm/1.385 in	22.56 mm/0.888 in	9.78 mm/0.385 in



Permeability (µ)	A_L ± 8%	Part Number						
		Kool Mµ®	Kool Mµ® MAX	Kool Mµ® H*f*	XFLUX®	High Flux	Edge™	MPP
14	9	77588	79588	-	-	58588	-	55588
19	12	-	79592	-	78592	-	-	-
26	16	77587	79587	76587	78587	58587	59587	55587
40	25	77591	79591	-	78591	-	-	-
60	38	77586	79586	76586	78586	58586	59586	55586
75	47	77590	-	-	78590	-	-	-
90	57	77589	-	-	78589	-	-	-
125	79	77585	-	-	78585	58585	-	55585
147	93	-	-	-	-	58584	-	55584
160	101	-	-	-	-	58583	-	55583
173	109	-	-	-	-	-	-	55579
200	126	-	-	-	-	-	-	55582
300	190	-	-	-	-	-	-	55580
550	348	-	-	-	-	-	-	55581

Physical and Magnetic Parameters	
Window Area	399 mm^2
Cross Section (A_e)	46.4 mm^2
Path Length (L_e)	89.5 mm
Effective Volume (V_e)	4,150 mm^3
Area Product	18,500 mm^4

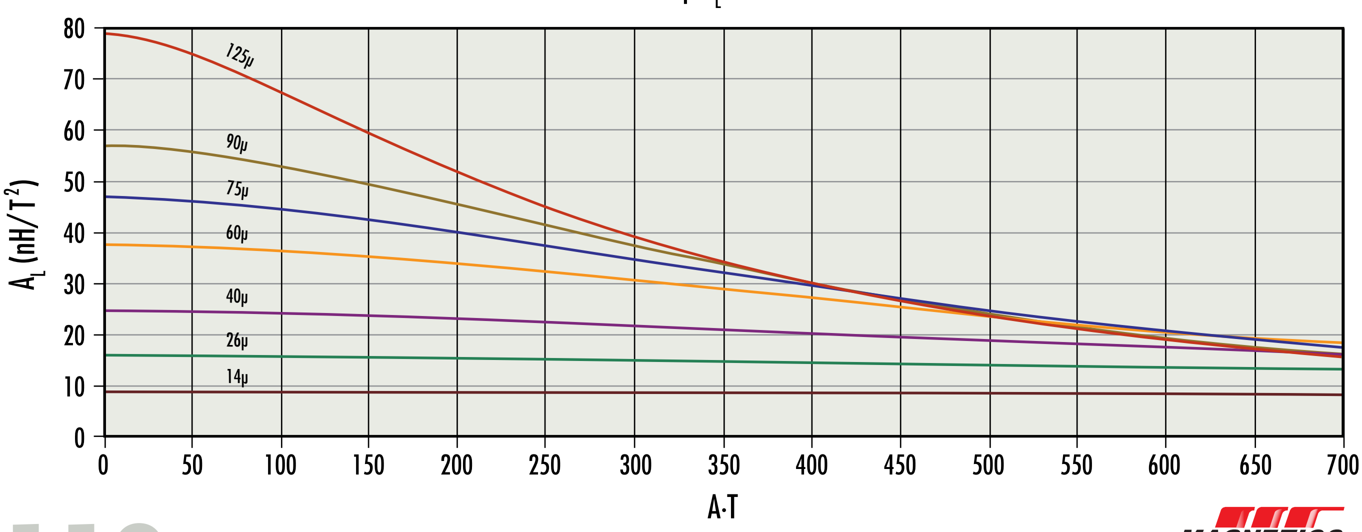
Wound Coil Dimensions*		
40% Winding Factor	OD	40.5 mm
	HT	16.8 mm
Completely Full Window	Max OD	50.1 mm
	Max HT	29.0 mm

Surface Area*	
Unwound Core	2,900 mm^2
40% Winding Factor	5,500 mm^2

Winding Turn Length*	
Winding Factor	Length/Turn (mm)
0%	32.2
20%	38.1
25%	39.6
30%	40.6
35%	42.5
40%	44.0
45%	45.6
50%	47.3
60%	50.8
70%	54.9

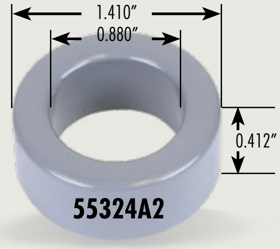
** See Toroid Winding pg. 19*

Kool Mµ A_L vs. DC Bias



35.8 mm OD

Core Dimensions	OD	ID	HT
Before Finish (nominal)	35.81 mm/1.410 in	22.35 mm/0.880 in	10.46 mm/0.412 in
After Finish (limits)	36.70 mm/1.445 in	21.54 mm/0.848 in	11.35 mm/0.447 in



Permeability (µ)	A_L ± 8%	Part Number						
		Kool Mµ®	Kool Mµ® MAX	Kool Mµ® Hƒ	XFLUX®	High Flux	Edge™	MPP
14	13	77327	79327	-	-	58327	-	55327
19	18	-	79317	-	78317	-	-	-
26	24	77326	79326	76326	78326	58326	59326	55326
40	37	77330	79330	-	78330	-	-	-
60	56	77076	79076	76076	78076	58076	59076	55076
75	70	77329	-	-	78329	-	-	-
90	84	77328	-	-	78328	-	-	-
125	117	77324	-	-	78324	58324	-	55324
147	138	-	-	-	-	58323	-	55323
160	150	-	-	-	-	58322	-	55322
173	162	-	-	-	-	-	-	55318
200	187	-	-	-	-	-	-	55321
300	281	-	-	-	-	-	-	55319
550	515	-	-	-	-	-	-	55320

Physical and Magnetic Parameters	
Window Area	364 mm^2
Cross Section (A_e)	67.8 mm^2
Path Length (L_e)	89.8 mm
Effective Volume (V_e)	6,090 mm^3
Area Product	24,700 mm^4

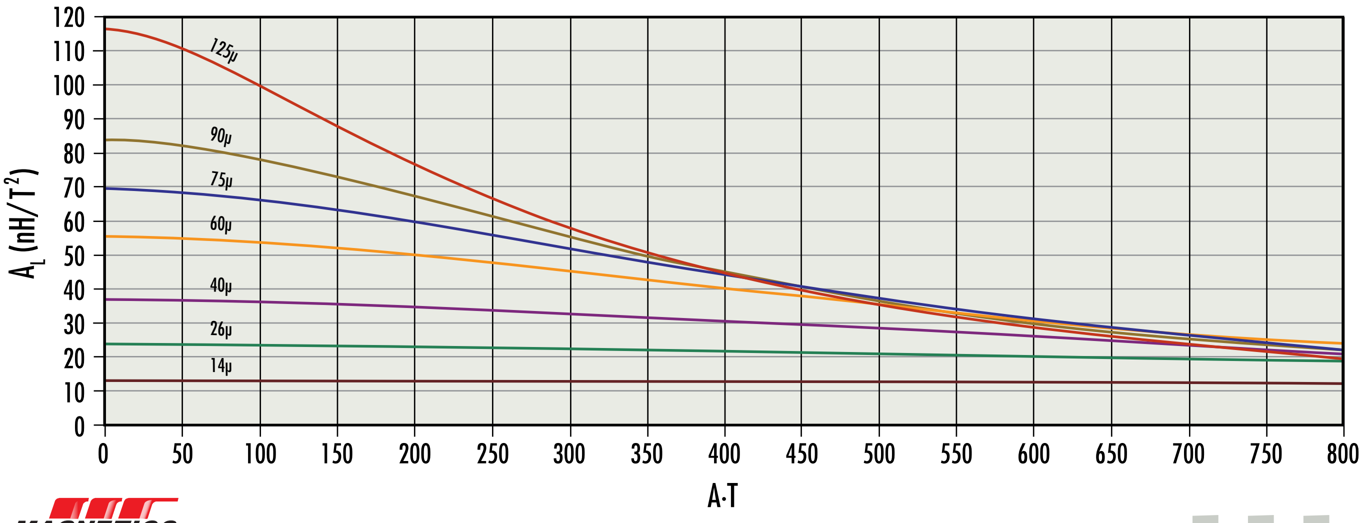
Wound Coil Dimensions*		
40% Winding Factor	OD	40.2 mm
	HT	18.4 mm
Completely Full Window	Max OD	51.1 mm
	Max HT	29.6 mm

Surface Area*	
Unwound Core	3,400 mm^2
40% Winding Factor	5,700 mm^2

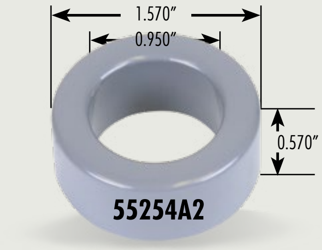
Winding Turn Length*	
Winding Factor	Length/Turn (mm)
0%	37.9
20%	43.5
25%	44.8
30%	46.0
35%	47.6
40%	48.9
45%	50.6
50%	52.0
60%	55.5
70%	59.3

** See Toroid Winding pg. 19*

Kool Mµ A_L vs. DC Bias



39.9 mm OD



Core Dimensions	OD	ID	HT
Before Finish (nominal)	39.88 mm/1.570 in	24.13 mm/0.950 in	14.48 mm/0.570 in
After Finish (limits)	40.77 mm/1.605 in	23.32 mm/0.918 in	15.37 mm/0.605 in

Permeability (μ)	A_L ± 8%	Part Number						
		Kool Mμ®	Kool Mμ® MAX	Kool Mμ® H*f*	XFlux®	High Flux	Edge™	MPP
14	19	77257	79257	-	-	58257	-	55257
19	26	-	79262	-	78262	-	-	-
26	35	77256	79256	76256	78256	58256	59256	55256
40	54	77260	79260	-	78260	-	-	-
60	81	77083	79083	76083	78083	58083	59083	55083
75	101	77259	-	-	78259	-	-	-
90	121	77258	-	-	78258	-	-	-
125	168	77254	-	-	78254	58254	-	55254
147	198	-	-	-	-	58253	-	55253
160	215	-	-	-	-	58252	-	55252
173	233	-	-	-	-	-	-	55248
200	269	-	-	-	-	-	-	55251
300	403	-	-	-	-	-	-	55249
550	740	-	-	-	-	-	-	55250

Physical and Magnetic Parameters	
Window Area	427 mm^2
Cross Section (A_e)	107 mm^2
Path Length (L_e)	98.4 mm
Effective Volume (V_e)	10,600 mm^3
Area Product	45,800 mm^4

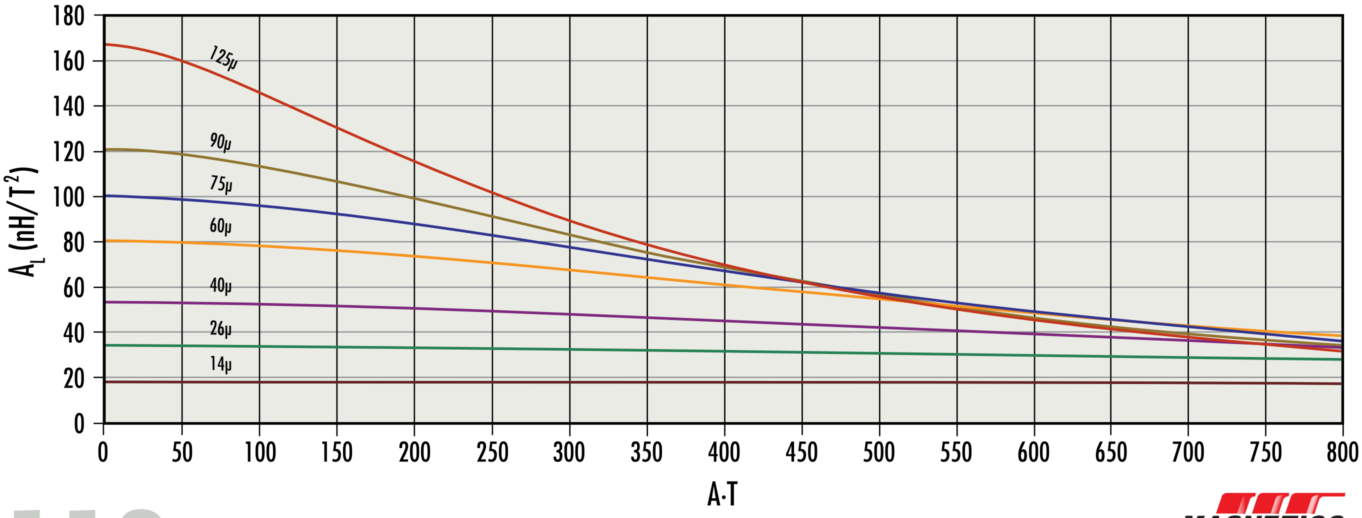
Wound Coil Dimensions*		
40% Winding Factor	OD	44.3 mm
	HT	22.4 mm
Completely Full Window	Max OD	56.4 mm
	Max HT	35.2 mm

Surface Area*	
Unwound Core	4,800 mm^2
40% Winding Factor	7,300 mm^2

Winding Turn Length*	
Winding Factor	Length/Turn (mm)
0%	48.2
20%	54.3
25%	55.8
30%	57.0
35%	58.8
40%	60.2
45%	62.1
50%	63.7
60%	67.3
70%	71.5

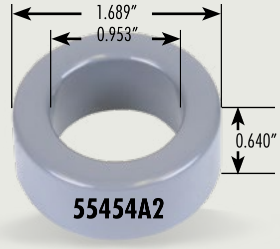
** See Toroid Winding pg. 19*

Kool Mμ A_L vs. DC Bias



42.9 mm OD

Core Dimensions	OD	ID	HT
Before Finish (nominal)	42.90 mm/1.689 in	24.21 mm/0.953 in	16.26 mm/0.640 in
After Finish (limits)	43.84 mm/1.726 in	23.39 mm/0.921 in	17.27 mm/0.680 in



Permeability (µ)	A_L ± 8%	Part Number						
		Kool Mµ®	Kool Mµ® MAX	Kool Mµ® Hƒ	XFlux®	High Flux	Edge™	MPP
14	25	77446	79446	-	-	58446	-	55446
19	35	-	79447	-	78447	-	-	-
26	47	77448	79448	-	78448	58448	-	55448
40	72	77450	79450	-	78450	-	-	-
60	108	77451	79451	-	78451	58451	-	55451
75	135	77452	-	-	78452	-	-	-
90	161	77453	-	-	78453	-	-	-
125	224	77454	-	-	78454	58454	-	55454
147	264	-	-	-	-	58455	-	55455
160	287	-	-	-	-	58456	-	55456
173	310	-	-	-	-	-	-	55457
200	359	-	-	-	-	-	-	55458
300	538	-	-	-	-	-	-	55459

Physical and Magnetic Parameters	
Window Area	430 mm^2
Cross Section (A_e)	147.5 mm^2
Path Length (L_e)	102 mm
Effective Volume (V_e)	15,100 mm^3
Area Product	63,400 mm^4

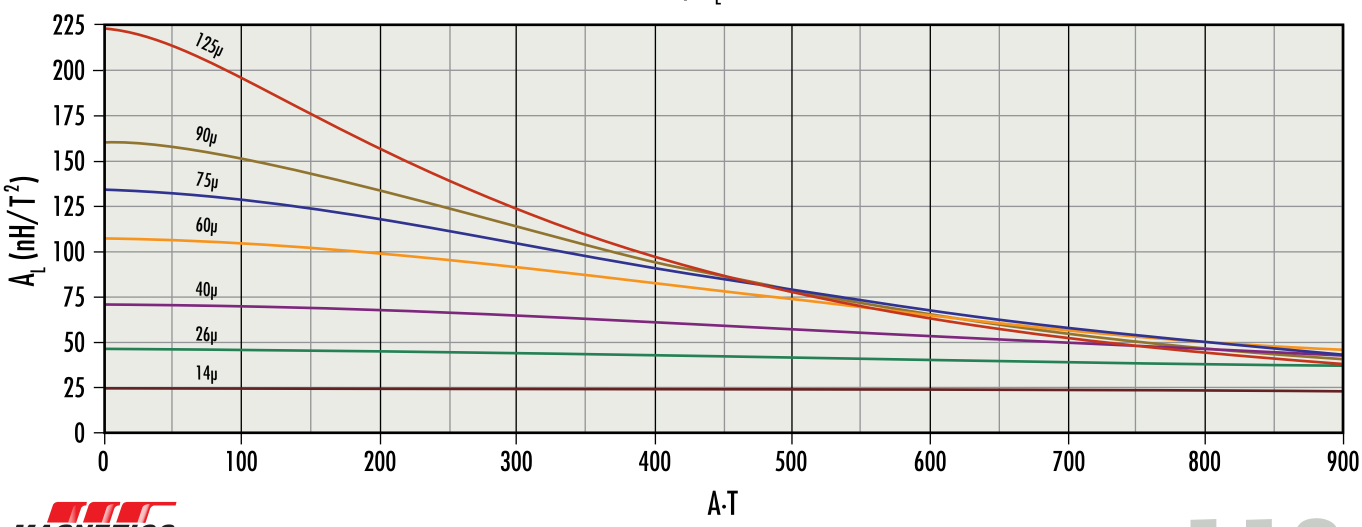
Wound Coil Dimensions*		
40% Winding Factor	OD	47.6 mm
	HT	24.6 mm
Completely Full Window	Max OD	59.4 mm
	Max HT	36.7 mm

Surface Area*	
Unwound Core	5,800 mm^2
40% Winding Factor	8,400 mm^2

Winding Turn Length*	
Winding Factor	Length/Turn (mm)
0%	55.0
20%	61.1
25%	62.5
30%	63.8
35%	65.6
40%	67.1
45%	68.9
50%	70.8
60%	74.2
70%	78.5

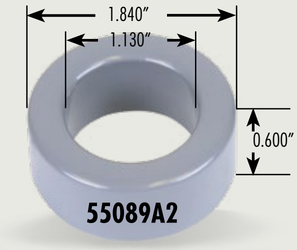
* See Toroid Winding pg. 19

Kool Mµ A_L vs. DC Bias



46.7 mm OD

Core Dimensions	OD	ID	HT
Before Finish (nominal)	46.74 mm/1.840 in	28.70 mm/1.130 in	15.24 mm/0.600 in
After Finish (limits)	47.63 mm/1.875 in	27.89 mm/1.098 in	16.13 mm/0.635 in



Permeability (μ)	A_L ± 8%	Part Number						
		Kool Mμ®	Kool Mμ® MAX	Kool Mμ® Hƒ	XFlux®	High Flux	Edge™	MPP
14	20	77092	79092	-	-	58092	-	55092
19	27	-	79079	-	78079	-	-	-
26	37	77091	79091	-	78091	58091	-	55091
40	57	77095	79095	-	78095	-	-	-
60	86	77090	79090	-	78090	58090	-	55090
75	107	77094	-	-	78094	-	-	-
90	128	77093	-	-	78093	-	-	-
125	178	77089	-	-	78089	58089	-	55089
147	210	-	-	-	-	58088	-	55088
160	228	-	-	-	-	-	-	55087
173	246	-	-	-	-	-	-	55082
200	285	-	-	-	-	-	-	55086
300	427	-	-	-	-	-	-	55084

Physical and Magnetic Parameters	
Window Area	610 mm^2
Cross Section (A_e)	134 mm^2
Path Length (L_e)	116 mm
Effective Volume (V_e)	15,600 mm^3
Area Product	81,800 mm^4

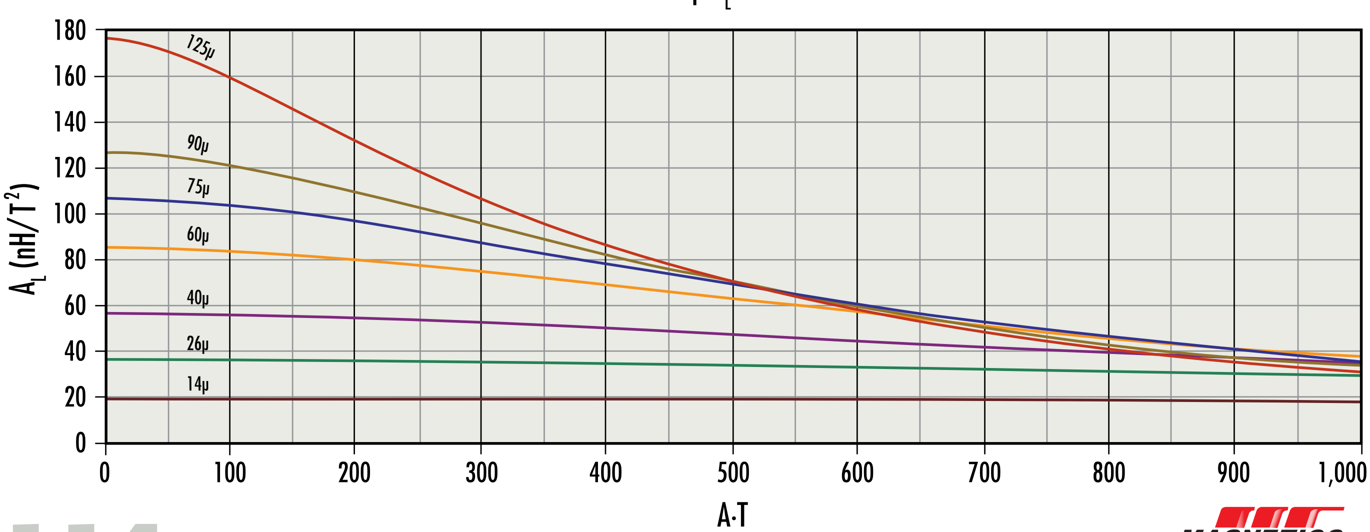
Wound Coil Dimensions*		
40% Winding Factor	OD	52.0 mm
	HT	24.9 mm
Completely Full Window	Max OD	66.3 mm
	Max HT	39.8 mm

Surface Area*	
Unwound Core	6,100 mm^2
40% Winding Factor	9,800 mm^2

Winding Turn Length*	
Winding Factor	Length/Turn (mm)
0%	52.0
20%	59.1
25%	61.0
30%	62.2
35%	64.5
40%	66.4
45%	68.2
50%	70.4
60%	74.7
70%	79.5

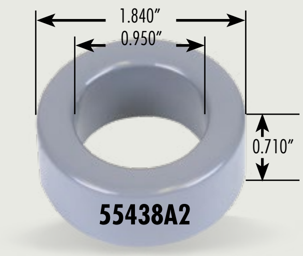
** See Toroid Winding pg. 19*

Kool Mμ A_L vs. DC Bias



46.7 mm OD

Core Dimensions	OD	ID	HT
Before Finish (nominal)	46.74 mm/1.840 in	24.13 mm/0.950 in	18.03 mm/0.710 in
After Finish (limits)	47.63 mm/1.875 in	23.32 mm/0.918 in	18.92 mm/0.745 in



Permeability (μ)	A_L ± 8%	Part Number						
		Kool Mμ®	Kool Mμ® MAX	Kool Mμ® Hƒ	XFLUX®	High Flux	Edge™	MPP
14	32	77441	79441	-	-	58441	-	55441
19	43	-	79430	-	78430	-	-	-
26	59	77440	79440	-	78440	58440	-	55440
40	90	77431	79431	-	78431	-	-	-
60	135	77439	79439	-	78439	58439	-	55439
75	169	77443	-	-	78443	-	-	-
90	202	77442	-	-	78442	-	-	-
125	281	77438	-	-	78438	58438	-	55438
147	330	-	-	-	-	58437	-	55437
160	360	-	-	-	-	-	-	55436
173	390	-	-	-	-	-	-	55432
200	450	-	-	-	-	-	-	55435
300	674	-	-	-	-	-	-	55433

Physical and Magnetic Parameters	
Window Area	427 mm^2
Cross Section (A_e)	199 mm^2
Path Length (L_e)	107 mm
Effective Volume (V_e)	21,300 mm^3
Area Product	85,900 mm^4

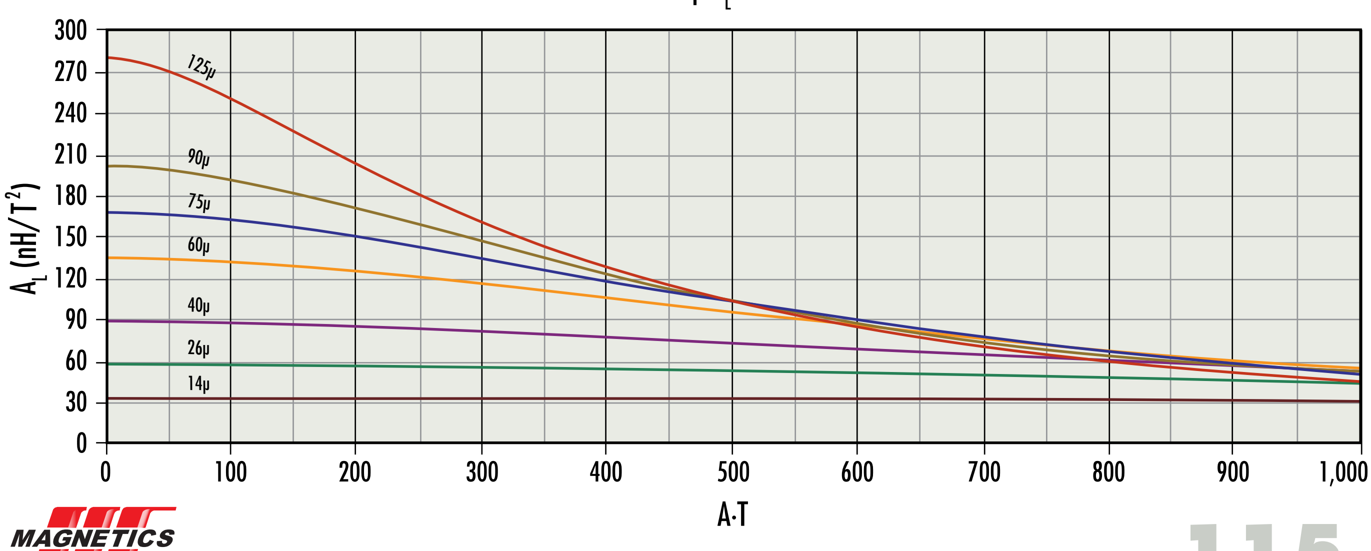
Wound Coil Dimensions*		
40% Winding Factor	OD	51.2 mm
	HT	26.0 mm
Completely Full Window	Max OD	63.8 mm
	Max HT	38.7 mm

Surface Area*	
Unwound Core	6,900 mm^2
40% Winding Factor	9,600 mm^2

Winding Turn Length*	
Winding Factor	Length/Turn (mm)
0%	62.1
20%	68.2
25%	69.7
30%	70.9
35%	72.7
40%	74.1
45%	76.0
50%	77.6
60%	81.2
70%	85.4

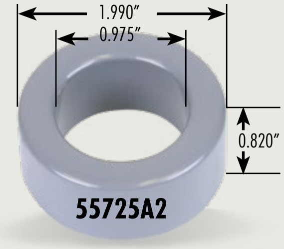
* See Toroid Winding pg. 19

Kool Mμ A_L vs. DC Bias



50.6 mm OD

Core Dimensions	OD	ID	HT
Before Finish (nominal)	50.55 mm/1.990 in	24.77 mm/0.975 in	20.83 mm/0.820 in
After Finish (limits)	51.51 mm/2.028 in	24.00 mm/0.945 in	21.59 mm/0.850 in



Permeability (μ)	A_L ± 8%	Part Number						
		Kool Mμ®	Kool Mμ® MAX	Kool Mμ® H*f*	XFLUX®	High Flux	Edge™	MPP
14	41	77728	79728		-	58728		55728
19	56	-	79750		78750	-		-
26	76	77727	79727		78727	58727		55727
40	117	77733	79733		78733	-		-
60	175	77726	79726		78726	58726		55726
75	219	77729	-		78729	-		-
90	263	77730	-		78730	-		-
125	366	77725	-		78725	58725		55725

Physical and Magnetic Parameters	
Window Area	452 mm^2
Cross Section (A_e)	262 mm^2
Path Length (L_e)	113.5 mm
Effective Volume (V_e)	29,700 mm^3
Area Product	118,000 mm^4

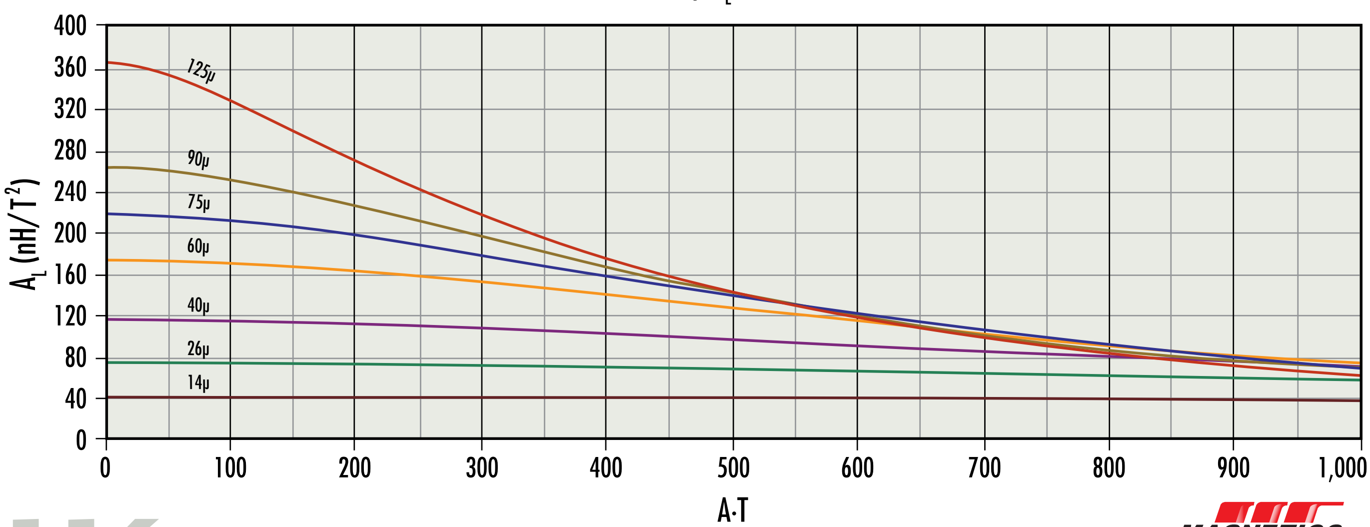
Wound Coil Dimensions*		
40% Winding Factor	OD	55.0 mm
	HT	29.0 mm
Completely Full Window	Max OD	68.0 mm
	Max HT	41.0 mm

Surface Area*	
Unwound Core	8,300 mm^2
40% Winding Factor	11,500 mm^2

Winding Turn Length*	
Winding Factor	Length/Turn (mm)
0%	70.7
20%	76.9
25%	78.3
30%	79.7
35%	81.5
40%	82.8
45%	84.8
50%	86.6
60%	90.1
70%	94.4

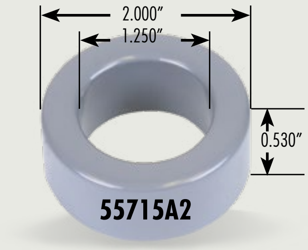
* See Toroid Winding pg. 19

Kool Mμ A_L vs. DC Bias



50.8 mm OD

Core Dimensions	OD	ID	HT
Before Finish (nominal)	50.80 mm/2.000 in	31.75 mm/1.250 in	13.46 mm/0.530 in
After Finish (limits)	51.69 mm/2.035 in	30.94 mm/1.218 in	14.35 mm/0.565 in



Permeability (μ)	A_L ± 8%	Part Number						
		Kool Mμ®	Kool Mμ® MAX	Kool Mμ® Hƒ	XFLUX®	High Flux	Edge™	MPP
14	17	77718	79718	-	-	58718	-	55718
19	23	-	79708	-	78708		-	
26	32	77717	79717	-	78717	58717	-	55717
40	49	77721	79721	-	78721	-	-	-
60	73	77716	79716	-	78716	58716	-	55716
75	91	77720	-	-	78720	-	-	-
90	109	77719	-	-	78719	-	-	-
125	152	77715	-	-	78715	58715	-	55715
147	179	-	-	-	-	58714	-	55714
160	195	-	-	-	-	-	-	55713
173	210	-	-	-	-	-	-	55709
200	243	-	-	-	-	-	-	55712
300	365	-	-	-	-	-	-	55710

Physical and Magnetic Parameters	
Window Area	751 mm^2
Cross Section (A_e)	125 mm^2
Path Length (L_e)	127 mm
Effective Volume (V_e)	15,900 mm^3
Area Product	94,000 mm^4

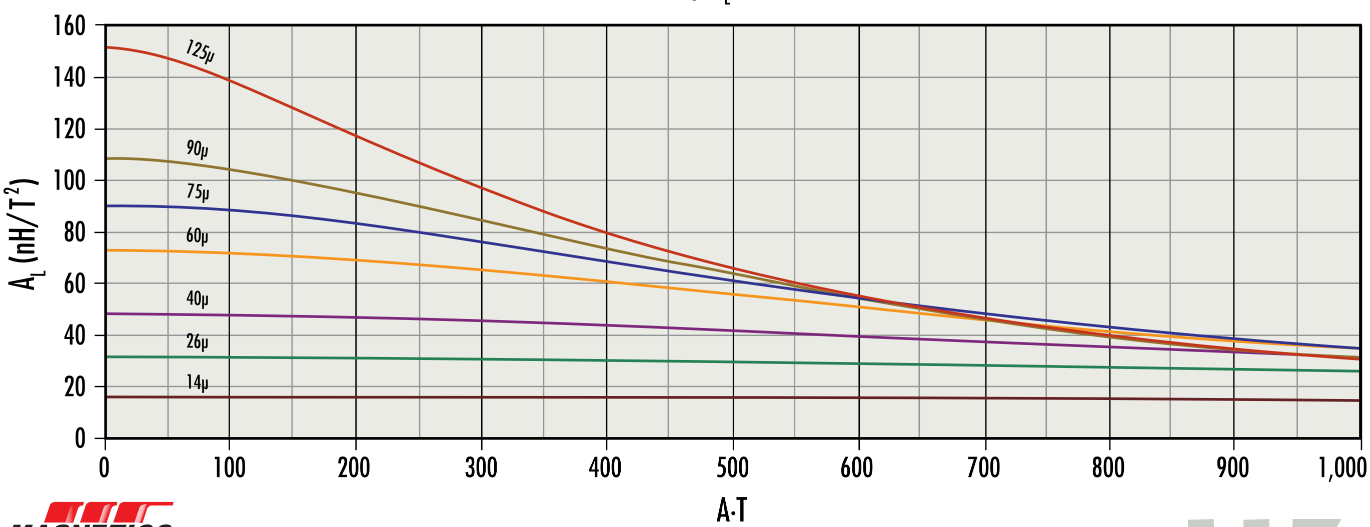
Wound Coil Dimensions*		
40% Winding Factor	OD	56.6 mm
	HT	24.2 mm
Completely Full Window	Max OD	72.4 mm
	Max HT	40.6 mm

Surface Area*	
Unwound Core	6,400 mm^2
40% Winding Factor	11,000 mm^2

Winding Turn Length*	
Winding Factor	Length/Turn (mm)
0%	49.5
20%	57.4
25%	59.6
30%	61.0
35%	63.5
40%	65.5
45%	67.7
50%	70.1
60%	74.9
70%	80.3

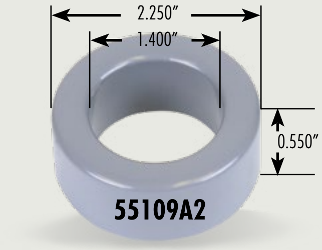
** See Toroid Winding pg. 19*

Kool Mμ A_L vs. DC Bias



57.2 mm OD

Core Dimensions	OD	ID	HT
Before Finish (nominal)	57.15 mm/2.250 in	35.56 mm/1.400 in	13.97 mm/0.550 in
After Finish (limits)	58.04 mm/2.285 in	34.75 mm/1.368 in	14.86 mm/0.585 in



Permeability (μ)	A_L ± 8%	Part Number						
		Kool Mμ®	Kool Mμ® MAX	Kool Mμ® Hƒ	XFLUX®	High Flux	Edge™	MPP
14	18	77112	79112	-	-	58112	-	55112
19	24		79215	-	78215		-	
26	33	77111	79111	-	78111	58111	-	55111
40	50	77212	79212	-	78212	-	-	-
60	75	77110	79110	-	78110	58110	-	55110
75	94	77214	-	-	78214	-	-	-
90	112	77213	-	-	78213	-	-	-
125	156	77109	-	-	-	58109	-	55109
147	185	-	-	-	-	-	-	55108
160	200	-	-	-	-	-	-	55107
173	218	-	-	-	-	-	-	55103
200	250	-	-	-	-	-	-	55106
300	374	-	-	-	-	-	-	55104

Physical and Magnetic Parameters	
Window Area	948 mm^2
Cross Section (A_e)	144 mm^2
Path Length (L_e)	143 mm
Effective Volume (V_e)	20,700 mm^3
Area Product	137,000 mm^4

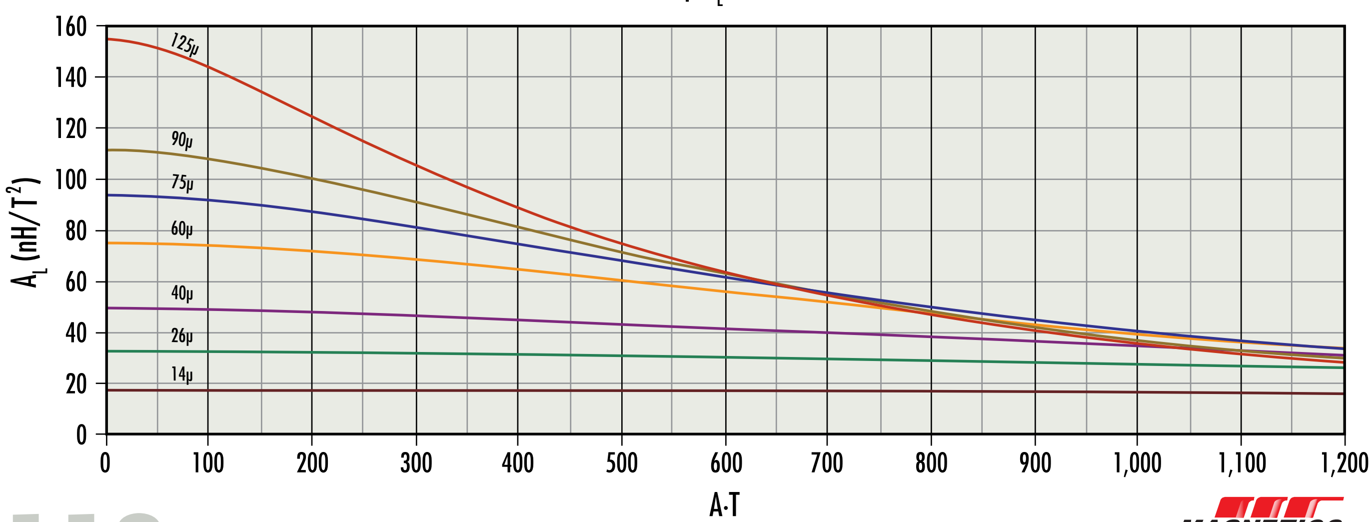
Wound Coil Dimensions*		
40% Winding Factor	OD	63.5 mm
	HT	25.9 mm
Completely Full Window	Max OD	81.3 mm
	Max HT	44.4 mm

Surface Area*	
Unwound Core	7,700 mm^2
40% Winding Factor	13,000 mm^2

Winding Turn Length*	
Winding Factor	Length/Turn (mm)
0%	53.0
20%	61.9
25%	64.3
30%	65.8
35%	68.7
40%	71.0
45%	73.2
50%	76.0
60%	81.3
70%	87.1

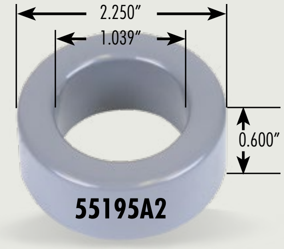
*See Toroid Winding pg. 19

Kool Mμ A_L vs. DC Bias



57.2 mm OD

Core Dimensions	OD	ID	HT
Before Finish (nominal)	57.15 mm/2.250 in	26.39 mm/1.039 in	15.24 mm/0.600 in
After Finish (limits)	58.04 mm/2.285 in	25.58 mm/1.007 in	16.13 mm/0.635 in



Permeability (μ)	A_L ± 8%	Part Number						
		Kool Mμ®	Kool Mμ® MAX	Kool Mμ® Hƒ	XFLUX®	High Flux	Edge™	MPP
14	32	77190	79190	-	-	58190	-	55190
19	44	-	79188	-	78188		-	-
26	60	77191	79191	-	78191	58191	-	55191
40	92	77189	79189	-	78189	-	-	-
60	138	77192	79192	-	78192	58192	-	55192
75	172	77193	-	-	78193	-	-	-
90	207	77194	-	-	78194	-	-	-
125	287	77195	-	-	78195	58195	-	55195
147	306	-	-	-	-	-	-	55196
160	333	-	-	-	-	-	-	55197
173	360	-	-	-	-	-	-	55198
200	417	-	-	-	-	-	-	55199

Physical and Magnetic Parameters	
Window Area	514 mm²
Cross Section (A_e)	229 mm²
Path Length (L_e)	125 mm
Effective Volume (V_e)	28,600 mm³
Area Product	118,000 mm⁴

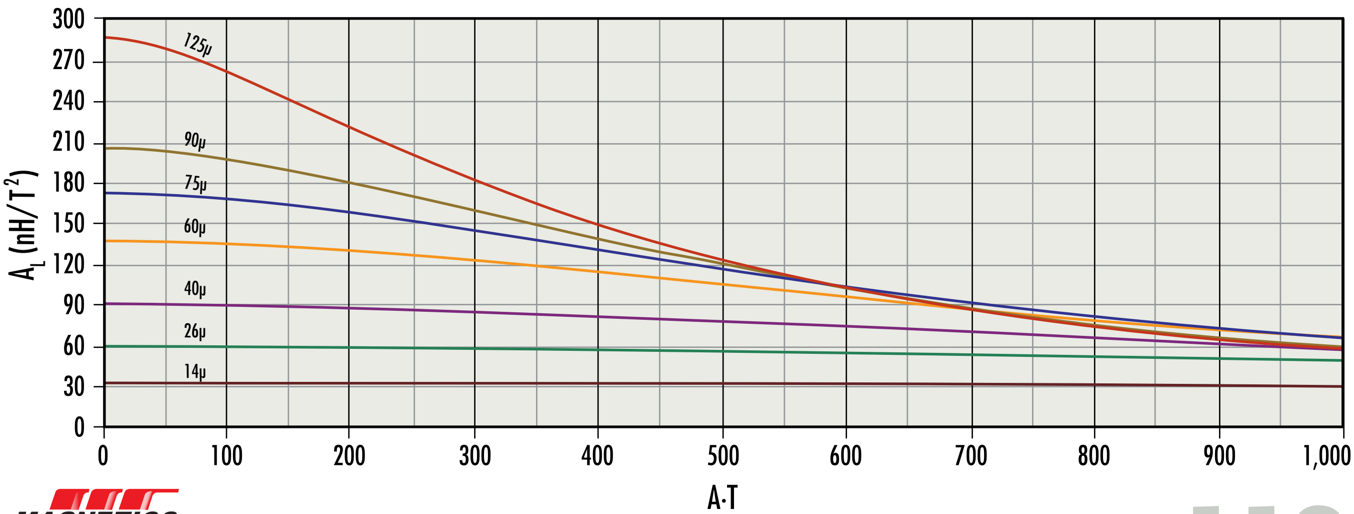
Wound Coil Dimensions*		
40% Winding Factor	OD	62.0 mm
	HT	24.0 mm
Completely Full Window	Max OD	75.7 mm
	Max HT	34.0 mm

Surface Area*	
Unwound Core	8,500 mm²
40% Winding Factor	12,000 mm²

Winding Turn Length*	
Winding Factor	Length/Turn (mm)
0%	64.6
20%	71.2
25%	72.9
30%	74.1
35%	76.3
40%	77.8
45%	79.8
50%	81.6
60%	85.6
70%	90.1

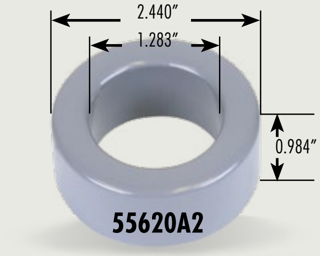
* See Toroid Winding pg. 19

Kool Mμ A_L vs. DC Bias



62.0 mm OD

Core Dimensions	OD	ID	HT
Before Finish (nominal)	61.98 mm/2.440 in	32.59 mm/1.283 in	24.99 mm/0.984 in
After Finish (limits)	63.09 mm/2.484 in	31.70 mm/1.248 in	25.91 mm/1.020 in



Permeability (μ)	A_L ± 8%	Part Number						
		Kool Mμ®	Kool Mμ® MAX	Kool Mμ® Hƒ	XFLUX®	High Flux	Edge™	MPP
14	44	77614	79614	-	-	58614	-	55614
19	60	-	79612	-	78612	-	-	-
26	82	77615	79615	-	78615	58615	-	55615
40	126	77616	79616	-	78616	58616	-	-
60	189	77617	79617	-	78617	58617	-	55617
75	237	77618	-	-	78618	-	-	-
90	284	77619	-	-	78619	-	-	-
125	394	77620	-	-	-	58620	-	55620

Physical and Magnetic Parameters	
Window Area	789 mm²
Cross Section (A_e)	360 mm²
Path Length (L_e)	144 mm
Effective Volume (V_e)	51,800 mm³
Area Product	284,000 mm⁴

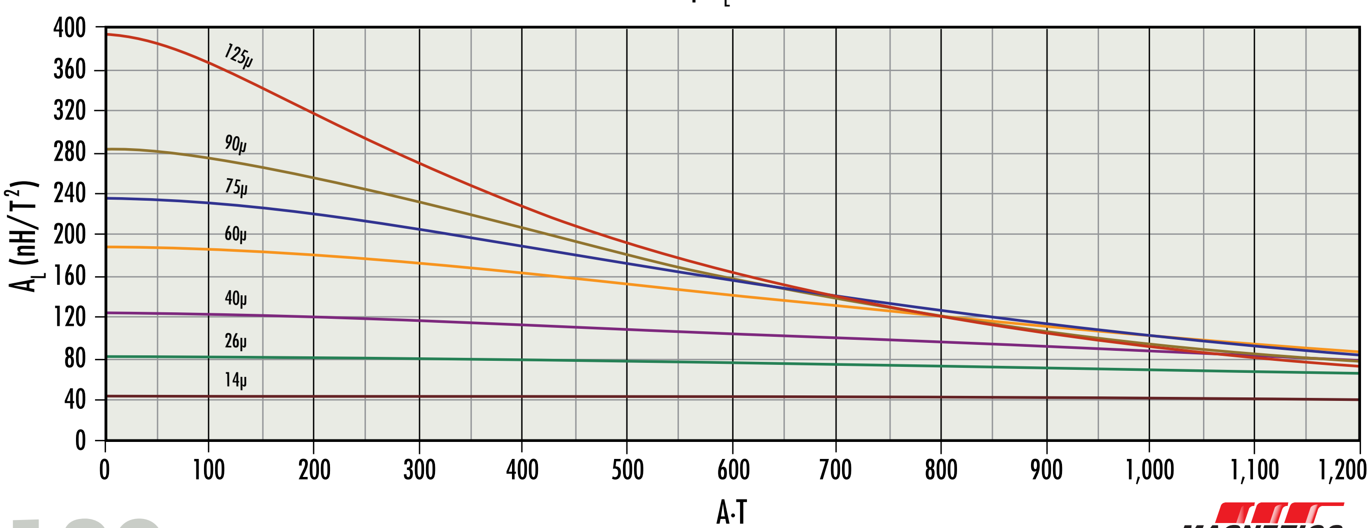
Winding Turn Length*	
Winding Factor	Length/Turn (mm)
0%	83.0
20%	91.3
25%	93.4
30%	94.9
35%	97.5
40%	99.5
45%	102
50%	104
60%	109
70%	115

Wound Coil Dimensions*		
40% Winding Factor	OD	75.3 mm
	HT	39.7 mm
Completely Full Window	Max OD	81.4 mm
	Max HT	47.4 mm

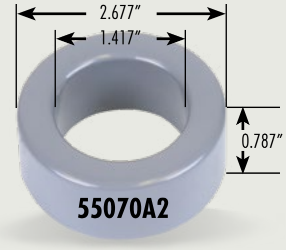
See Toroid Winding pg. 19

Surface Area*	
Unwound Core	12,000 mm²
40% Winding Factor	21,000 mm²

Kool Mμ A_L vs. DC Bias



68.0 mm OD



Core Dimensions	OD	ID	HT
Before Finish (nominal)	68.00 mm/2.677 in	35.99 mm/1.417 in	19.99 mm/0.787 in
After Finish (limits)	69.42 mm/2.733 in	34.67 mm/1.365 in	21.41 mm/0.843 in

Permeability (µ)	A_L ± 8%	Part Number						
		Kool Mµ®	Kool Mµ® MAX	Kool Mµ® Hƒ	XFLUX®	High Flux	Edge™	MPP
14	35	77075	79075	-	-	58075	-	55075
19	48	-	79067	-	78067		-	
26	65	77074	79074	-	78074	58074	-	55074
40	100	77073	79073	-	78073	58073	-	-
60	143	77072	79072	-	78072	58072	-	55072
75	187	77069	-	-	78069	-	-	-
90	225	77068	-	-	78068	-	-	-
125	312	77070	-	-	-	58070	-	55070

Physical and Magnetic Parameters	
Window Area	945 mm^2
Cross Section (A_e)	314 mm^2
Path Length (L_e)	158 mm
Effective Volume (V_e)	49,700 mm^3
Area Product	297,000 mm^4

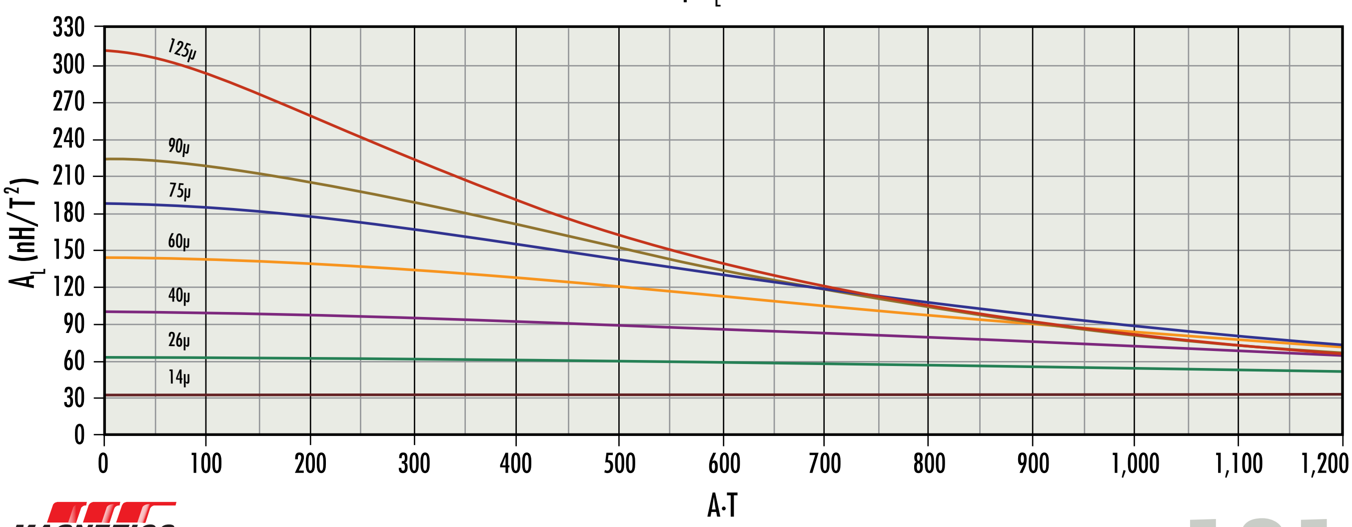
Winding Turn Length*	
Winding Factor	Length/Turn (mm)
0%	77.6
20%	86.6
25%	88.6
30%	90.7
35%	93.2
40%	95.1
45%	98.0
50%	101
60%	106
70%	112

* See Toroid Winding pg. 19

Wound Coil Dimensions*		
40% Winding Factor	OD	74.7 mm
	HT	32.4 mm
Completely Full Window	Max OD	92.7 mm
	Max HT	50.6 mm

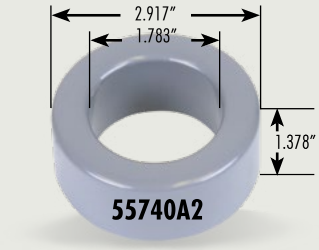
Surface Area*	
Unwound Core	12,700 mm^2
40% Winding Factor	19,000 mm^2

Kool Mµ A_L vs. DC Bias



74.1 mm OD

Core Dimensions	OD	ID	HT
Before Finish (nominal)	74.09 mm/2.917 in	45.29 mm/1.783 in	35.00 mm/1.378 in
After Finish (limits)	75.21 mm/2.961 in	44.40 mm/1.748 in	35.92 mm/1.414 in



Permeability (μ)	A_L ± 8%	Part Number						
		Kool Mμ®	Kool Mμ® MAX	Kool Mμ® Hƒ	XFLUX®	High Flux	Edge™	MPP
14	48	77734	79734	-	-	58734	-	55734
19	64	-	79744	-	78744		-	
26	88	77735	79735	-	78735	58735	-	55735
40	136	77736	79736	-	78736	58736	-	-
60	204	77737	79737	-	78737	58737	-	55737
75	255	77738	-	-	78738	-	-	-
90	306	77739	-	-	78739	-	-	-
125	425	77740	-	-	-	58740	-	55740

Physical and Magnetic Parameters	
Window Area	1,550 mm^2
Cross Section (A_e)	497 mm^2
Path Length (L_e)	184 mm
Effective Volume (V_e)	91,400 mm^3
Area Product	769,000 mm^4

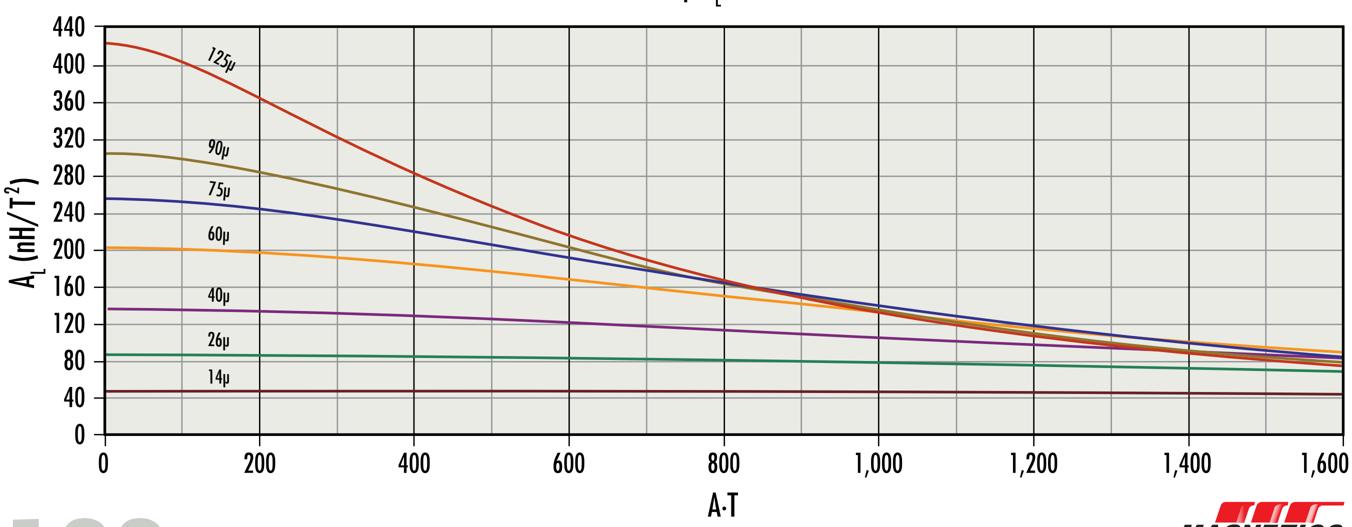
Wound Coil Dimensions*		
40% Winding Factor	OD	91.0 mm
	HT	55.2 mm
Completely Full Window	Max OD	102 mm
	Max HT	65.7 mm

Surface Area*	
Unwound Core	19,000 mm^2
40% Winding Factor	33,000 mm^2

Winding Turn Length*	
Winding Factor	Length/Turn (mm)
0%	102
20%	114
25%	117
30%	119
35%	122
40%	125
45%	129
50%	132
60%	139
70%	147

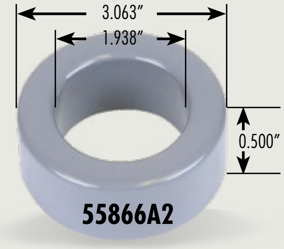
** See Toroid Winding pg. 19*

Kool Mμ A_L vs. DC Bias



77.8 mm OD

Core Dimensions	OD	ID	HT
Before Finish (nominal)	77.80 mm/3.063 in	49.23 mm/1.938 in	12.70 mm/0.500 in
After Finish (limits)	78.94 mm/3.108 in	48.21 mm/1.898 in	13.84 mm/0.545 in



Permeability (μ)	A_L ± 8%	Part Number						
		Kool Mμ®	Kool Mμ® MAX	Kool Mμ® Hƒ	XFLUX®	High Flux	Edge™	MPP
14	16	77869	79869	-	-	58869	-	55869
19	22	-	79873	-	78873	-	-	
26	30	77868	79868	-	78868	58868	-	55868
40	45	77872	79872	-	78872	-	-	-
60	68	77867	79867	-	78867	58867	-	55867
75	85	77871	-	-	78871	-	-	-
90	102	77870	-	-	78870	-	-	-
125	142	77866	-	-	-	58866	-	55866

Physical and Magnetic Parameters	
Window Area	1,820 mm²
Cross Section (A_e)	176 mm²
Path Length (L_e)	196 mm
Effective Volume (V_e)	34,500 mm³
Area Product	321,000 mm⁴

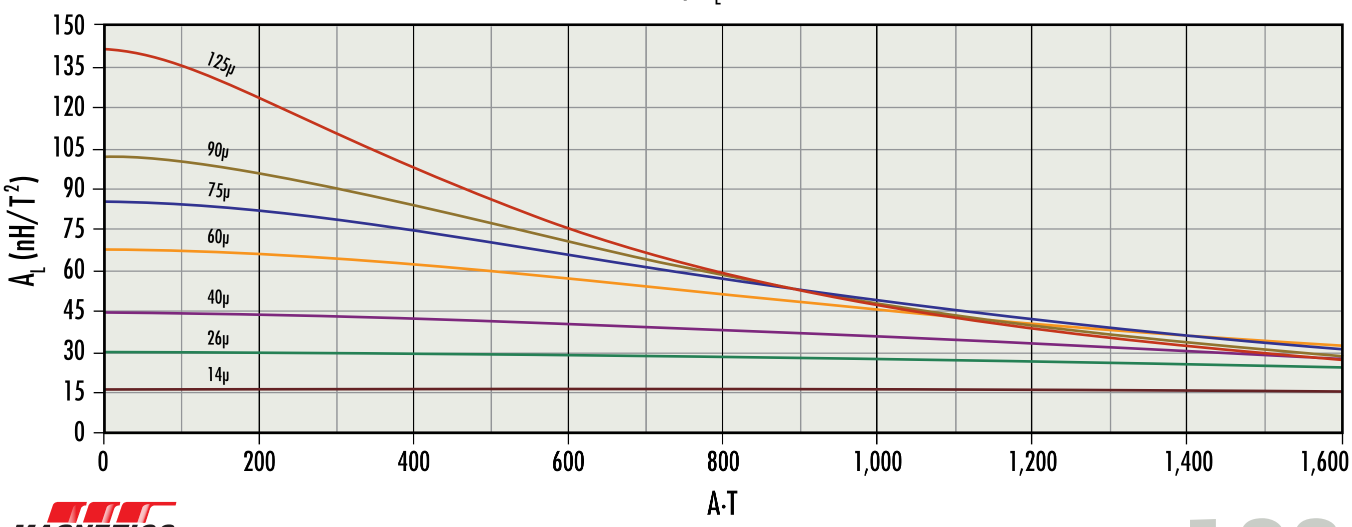
Wound Coil Dimensions*		
40% Winding Factor	OD	86.6 mm
	HT	29.1 mm
Completely Full Window	Max OD	112 mm
	Max HT	54.3 mm

Surface Area*	
Unwound Core	11,000 mm²
40% Winding Factor	23,000 mm²

Winding Turn Length*	
Winding Factor	Length/Turn (mm)
0%	58.4
20%	70.9
25%	74.1
30%	76.3
35%	80.4
40%	83.5
45%	86.7
50%	90.4
60%	98.1
70%	107

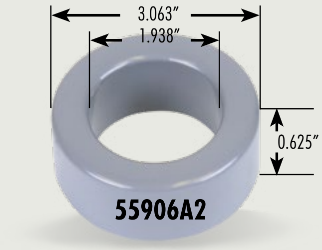
** See Toroid Winding pg. 19*

Kool Mμ A_L vs. DC Bias



77.8 mm OD

Core Dimensions	OD	ID	HT
Before Finish (nominal)	77.80 mm/3.063 in	49.23 mm/1.938 in	15.88 mm/0.625 in
After Finish (limits)	78.94 mm/3.108 in	48.21 mm/1.898 in	17.02 mm/0.670 in



Permeability (μ)	A_L ± 8%	Part Number						
		Kool Mμ®	Kool Mμ® MAX	Kool Mμ® Hƒ	XFLUX®	High Flux	Edge™	MPP
14	20	77909	79909	-	-	58909	-	55909
19	27	-	79913	-	78913		-	
26	37	77908	79908	-	78908	58908	-	55908
40	57	77912	79912	-	78912	-	-	-
60	85	77907	79907	-	78907	58907	-	55907
75	106	77911	-	-	78911	-	-	-
90	128	77910	-	-	78910	-	-	-
125	177	77906	-	-	-	58906	-	55906

Physical and Magnetic Parameters	
Window Area	1,820 mm^2
Cross Section (A_e)	221 mm^2
Path Length (L_e)	196 mm
Effective Volume (V_e)	43,400 mm^3
Area Product	403,000 mm^4

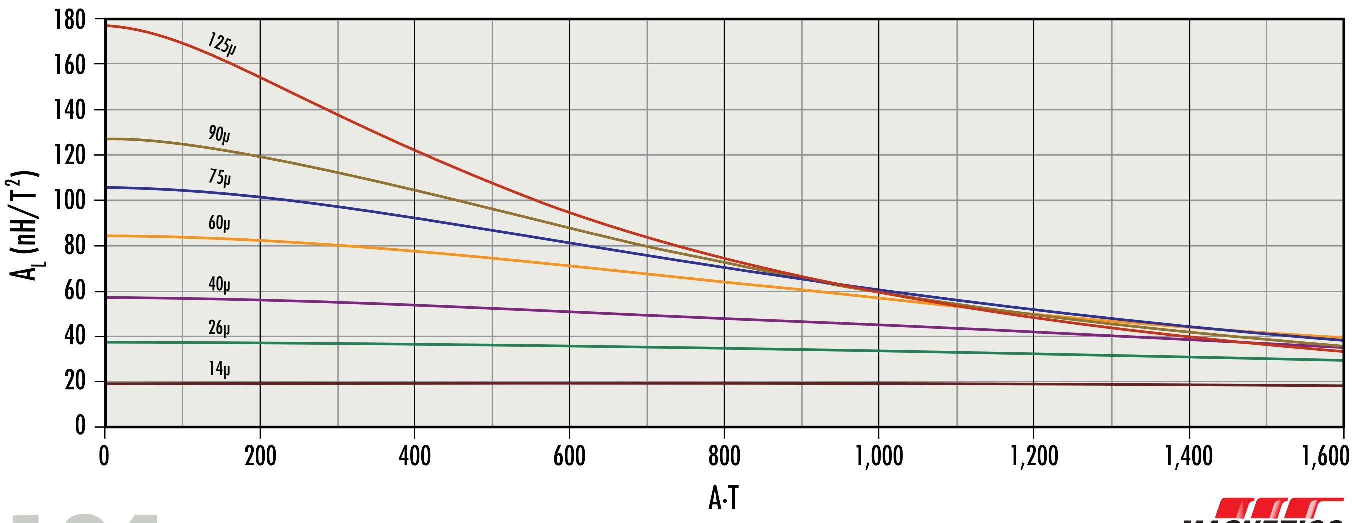
Wound Coil Dimensions*		
40% Winding Factor	OD	86.6 mm
	HT	32.3 mm
Completely Full Window	Max OD	113 mm
	Max HT	57.7 mm

Surface Area*	
Unwound Core	13,000 mm^2
40% Winding Factor	24,000 mm^2

Winding Turn Length*	
Winding Factor	Length/Turn (mm)
0%	64.8
20%	77.3
25%	80.1
30%	83.1
35%	86.5
40%	89.2
45%	93.2
50%	97.0
60%	104
70%	113

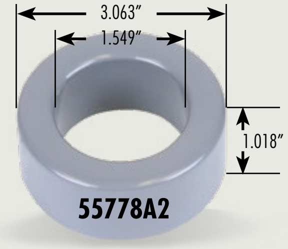
*See Toroid Winding pg. 19

Kool Mμ A_L vs. DC Bias



77.8 mm OD

Core Dimensions	OD	ID	HT
Before Finish (nominal)	77.80 mm/3.063 in	39.34 mm/1.549 in	25.86 mm/1.018 in
After Finish (limits)	78.94 mm/3.108 in	38.33 mm/1.509 in	26.85 mm/1.057 in



Permeability (μ)	A_L ± 8%	Part Number						
		Kool Mμ®	Kool Mμ® MAX	Kool Mμ® H*f*	XFLUX®	High Flux	Edge™	MPP
14	47	77774	79774	-	-	58774	-	55774
19	64	-	79772	-	78772		-	
26	88	77775	79775	-	78775	58775	-	55775
40	135	77776	79776	-	78776	58776	-	-
60	205	77777	79777	-	78777	58777	-	55777
75	256	77773	-	-	78773		-	
125	425	77778	-	-	-	58778	-	55778

Physical and Magnetic Parameters	
Window Area	1,150 mm^2
Cross Section (A_e)	492 mm^2
Path Length (L_e)	177.2 mm
Effective Volume (V_e)	81,500 mm^3
Area Product	550,000 mm^4

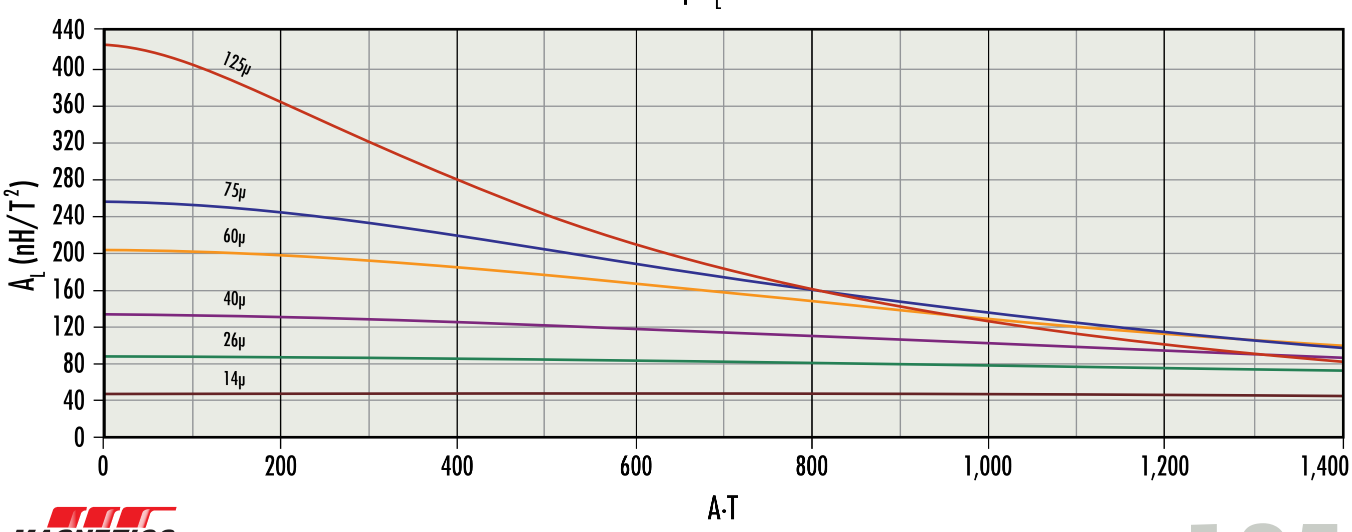
Wound Coil Dimensions*		
40% Winding Factor	OD	84.6 mm
	HT	38.9 mm
Completely Full Window	Max OD	105 mm
	Max HT	58.9 mm

Surface Area*	
Unwound Core	17,000 mm^2
40% Winding Factor	25,000 mm^2

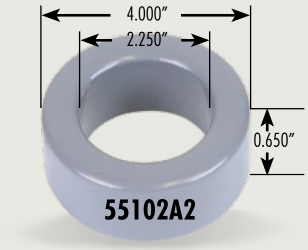
Winding Turn Length*	
Winding Factor	Length/Turn (mm)
0%	94.3
20%	104
25%	107
30%	109
35%	112
40%	114
45%	117
50%	120
60%	126
70%	132

* *See Toroid Winding pg. 19*

Kool Mμ A_L vs. DC Bias



101.6 mm OD



Core Dimensions	OD	ID	HT
Before Finish (nominal)	101.60 mm/4.000 in	57.15 mm/2.250 in	16.51 mm/0.650 in
After Finish (limits)	103.00 mm/4.055 in	55.75 mm/2.195 in	17.91 mm/0.705 in

Permeability (µ)	A_L ± 8%	Part Number						
		Kool Mµ®	Kool Mµ® MAX	Kool Mµ® H*f*	XFLUX®	High Flux	Edge™	MPP
14	26	77101	79101	-	-	58101	-	55101
19	35	-	79097	-	78097	-	-	
26	48	77102	79102	-	78102	58102	-	55102
40	74	77100	79100	-	78100	58100	-	-
60	111	77099	79099	-	78099	58099	-	55099
75	138	77159	-	-	78159	-	-	-
90	167	77096	-	-	78096	-	-	-
125	232	77098	-	-	-	-	-	55098

Physical and Magnetic Parameters	
Window Area	2,470 mm^2
Cross Section (A_e)	358 mm^2
Path Length (L_e)	243 mm
Effective Volume (V_e)	86,900 mm^3
Area Product	885,000 mm^4

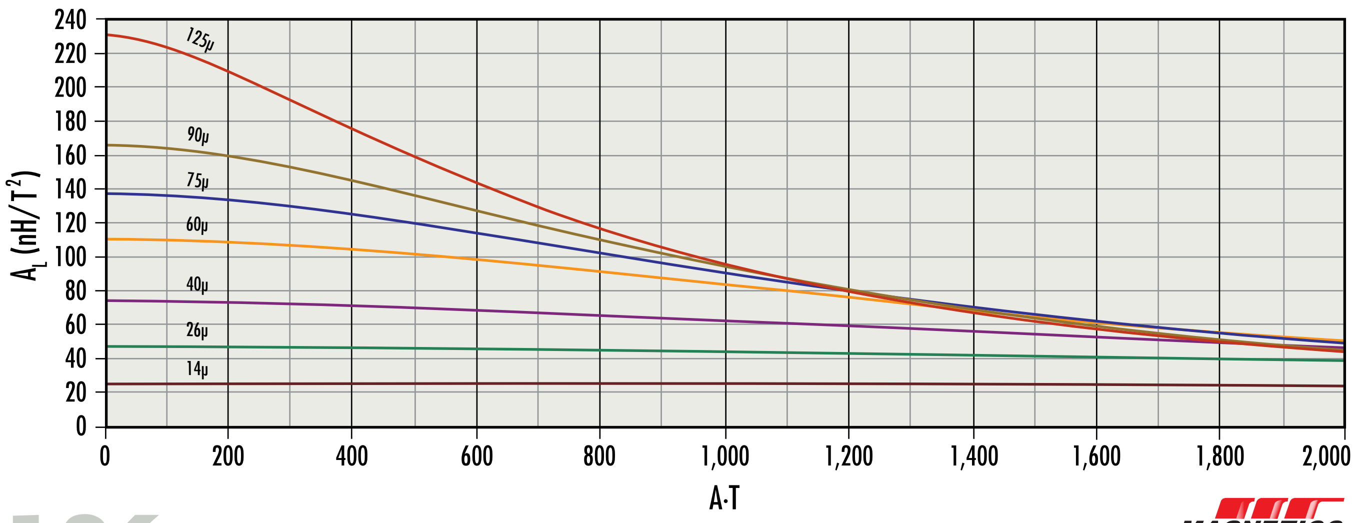
Wound Coil Dimensions*		
40% Winding Factor	OD	112 mm
	HT	34.9 mm
Completely Full Window	Max OD	136 mm
	Max HT	55.1 mm

Surface Area*	
Unwound Core	20,000 mm^2
40% Winding Factor	36,000 mm^2

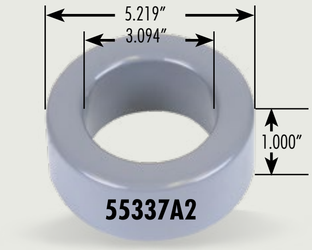
Winding Turn Length*	
Winding Factor	Length/Turn (mm)
0%	83.1
20%	97.6
25%	101
30%	104
35%	108
40%	111
45%	116
50%	120
60%	128
70%	138

* See Toroid Winding pg. 19

Kool Mµ A_L vs. DC Bias



132.6 mm OD



Core Dimensions	OD	ID	HT
Before Finish (nominal)	132.56 mm/5.219 in	78.59 mm/3.094 in	25.40 mm/1.000 in
After Finish (limits)	133.96 mm/5.274 in	77.19 mm/3.039 in	26.80 mm/1.055 in

Permeability (µ)	A_L ± 8%	Part Number						
		Kool Mµ®	Kool Mµ® MAX	Kool Mµ® H*f*	XFLUX®	High Flux	Edge™	MPP
14	37	77336	79336	-	-	58336	-	55336
19	50	-	79342	-	78342	-	-	-
26	68	77337	79337	-	78337	58337	-	55337
40	105	77338	-	-	78338	58338	-	-
60	158	77339	-	-	-	58339	-	55339
125	329	-	-	-	-	-	-	55340
147	380	-	-	-	-	-	-	55341

Physical and Magnetic Parameters	
Window Area	4,710 mm^2
Cross Section (A_e)	678 mm^2
Path Length (L_e)	324 mm
Effective Volume (V_e)	220,000 mm^3
Area Product	3,190,000 mm^4

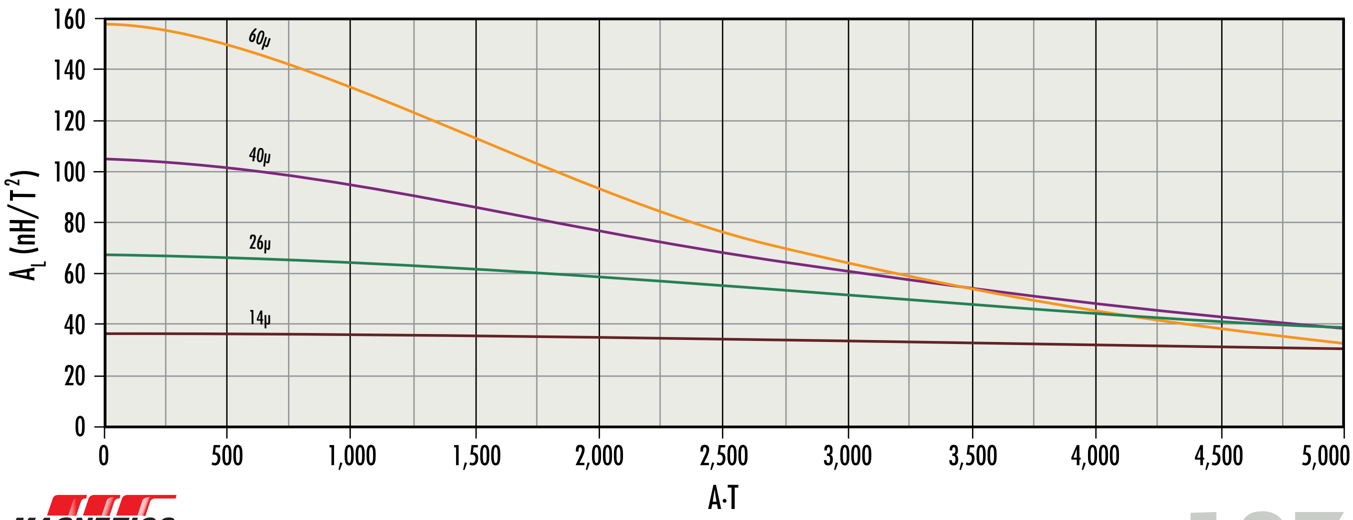
Wound Coil Dimensions*		
40% Winding Factor	OD	146 mm
	HT	50.7 mm
Completely Full Window	Max OD	179 mm
	Max HT	78.8 mm

Surface Area*	
Unwound Core	36,000 mm^2
40% Winding Factor	65,000 mm^2

Winding Turn Length*	
Winding Factor	Length/Turn (mm)
0%	110
20%	130
25%	135
30%	139
35%	145
40%	150
45%	156
50%	162
60%	173
70%	187

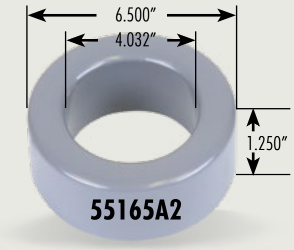
* *See Toroid Winding pg. 19*

Kool Mµ A_L vs. DC Bias



165.1 mm OD

Core Dimensions	OD	ID	HT
Before Finish (nominal)	165.10 mm/6.500 in	102.41 mm/4.032 in	31.75 mm/1.250 in
After Finish (limits)	166.50 mm/6.555 in	101.02 mm/3.977 in	33.15 mm/1.305 in



Permeability (µ)	A_L ± 8%	Part Number						
		Kool Mµ®	Kool Mµ® MAX	Kool Mµ® H*f*	XFLUX®	High Flux	Edge™	MPP
14	42	77164	79164	-	-	58164	-	55164
19	57	-	-	-	78163	-	-	-
26	78	77165	-	-	78165	58165	-	55165
40	120	-	-	-	-	-	-	-
60	180	-	-	-	-	58167	-	55167

Physical and Magnetic Parameters	
Window Area	8,030 mm^2
Cross Section (A_e)	987 mm^2
Path Length (L_e)	412 mm
Effective Volume (V_e)	407,000 mm^3
Area Product	7,920,000 mm^4

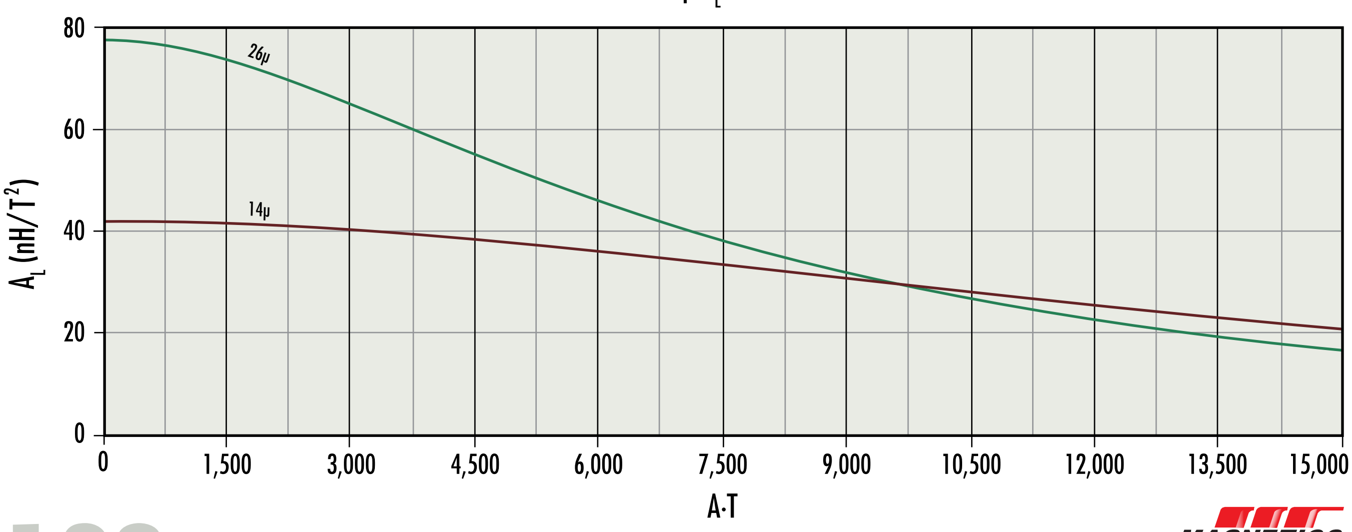
Wound Coil Dimensions*		
40% Winding Factor	OD	182 mm
	HT	63.2 mm
Completely Full Window	Max OD	228 mm
	Max HT	103 mm

Surface Area*	
Unwound Core	55,000 mm^2
40% Winding Factor	102,000 mm^2

Winding Turn Length*	
Winding Factor	Length/Turn (mm)
0%	132
20%	158
25%	164
30%	170
35%	178
40%	184
45%	192
50%	199
60%	215
70%	233

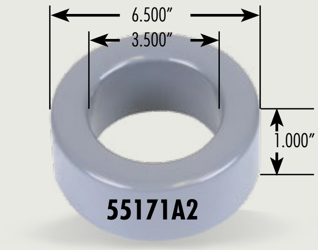
** See Toroid Winding pg. 19*

Kool Mµ A_L vs. DC Bias



165.1 mm OD

Core Dimensions	OD	ID	HT
Before Finish (nominal)	165.10 mm/6.500 in	88.90 mm/3.500 in	25.40 mm/1.000 in
After Finish (limits)	167.21 mm/6.583 in	86.89 mm/3.421 in	27.31 mm/1.075 in



Permeability (µ)	A_L ± 8%	Part Number						
		Kool Mµ®	Kool Mµ® MAX	Kool Mµ® Hƒ	XFLUX®	High Flux	Edge™	MPP
19	58	-	-	-	78170	-	-	-
26	80	-	-	-	78171	-	-	-

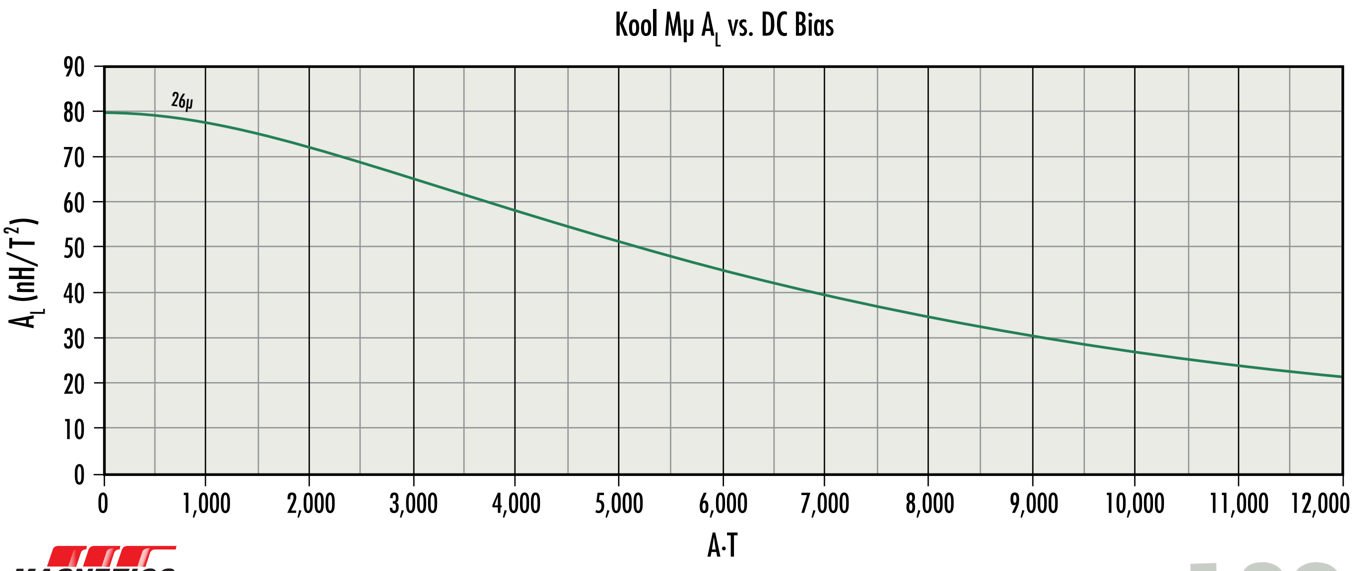
Physical and Magnetic Parameters	
Window Area	5,930 mm^2
Cross Section (A_e)	948 mm^2
Path Length (L_e)	386.5 mm
Effective Volume (V_e)	366,400 mm^3
Area Product	5,620,000 mm^4

Wound Coil Dimensions*		
40% Winding Factor	OD	181 mm
	HT	56.3 mm
Completely Full Window	Max OD	225 mm
	Max HT	103 mm

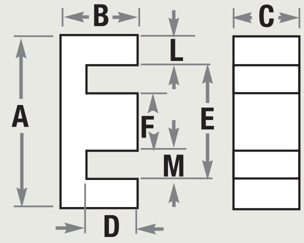
Surface Area*	
Unwound Core	54,000 mm^2
40% Winding Factor	96,000 mm^2

Winding Turn Length*	
Winding Factor	Length/Turn (mm)
0%	135
20%	158
25%	163
30%	168
35%	175
40%	179
45%	187
50%	193
60%	206
70%	222

* *See Toroid Winding pg. 19*



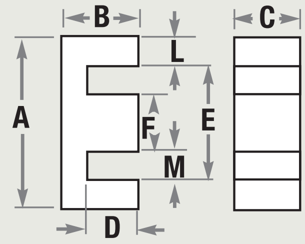
E Core Data



PART NO		A	B	C	D(min)	E(min)	F	L(nom)	M(min)
00_1808E*** (EI-187)	mm in	19.30±0.30 0.760±0.012	8.10±0.18 0.319±0.007	4.78±0.15 0.188±0.006	5.54 0.218	13.92 0.548	4.78±0.13 0.188±0.005	2.39 0.094	4.65 0.183
00_2510E*** (E-2425)	mm in	25.40±0.38 1.000±0.015	9.53±0.18 0.375±0.007	6.35±0.10 0.250±0.004	6.22 0.245	18.80 0.740	6.35±0.13 0.250±0.005	3.18 0.125	6.25 0.246
00_3007E*** (DIN 30/7)	mm in	30.10±0.46 1.185±0.018	15.01±0.23 0.591±0.009	7.06±0.15 0.278±0.006	9.55 0.376	19.86 0.782	6.96±0.20 0.274±0.008	5.11 0.201	6.32 0.249
00_3515E*** (EI-375)	mm in	34.54±0.51 1.360±0.020	14.15±0.23 0.557±0.009	9.35±0.18 0.368±0.007	9.60 0.378	25.27 0.995	9.32±0.20 0.367±0.008	4.45 0.175	7.87 0.310
00_4017E*** (EE 42/11)	mm in	42.85±0.64 1.687±0.025	21.08±0.30 0.830±0.012	10.77±0.25 0.424±0.010	14.91 0.587	30.35 1.195	11.89±0.25 0.468±0.010	5.94 0.234	9.27 0.365
00_4020E*** (DIN 42/15)	mm in	42.85±0.64 1.687±0.025	21.08±0.33 0.830±0.013	15.44±0.25 0.608±0.010	14.91 0.587	30.35 1.195	11.89±0.25 0.468±0.010	5.94 0.234	9.27 0.365
00_4022E*** (DIN 42/20)	mm in	42.85±0.64 1.687±0.025	21.08±0.33 0.830±0.013	20.02±0.25 0.788±0.010	14.91 0.587	30.35 1.195	11.89±0.25 0.468±0.010	5.94 0.234	9.27 0.365
00_4317E*** (EI-21)	mm in	40.87±0.61 1.609±0.024	16.51±0.28 0.650±0.011	12.52±0.18 0.493±0.007	10.39 0.409	28.32 1.115	12.52±0.20 0.493±0.008	6.05 0.238	7.87 0.310
00_5528E*** (DIN 55/21)	mm in	54.86±0.81 2.160±0.032	27.56±0.41 1.085±0.016	20.62±0.38 0.812±0.015	18.52 0.729	37.49 1.476	16.76±0.38 0.660±0.015	8.38 0.330	10.29 0.405
00_5530E*** (DIN 55/25)	mm in	54.86±0.81 2.160±0.032	27.56±0.41 1.085±0.016	24.61±0.38 0.969±0.015	18.52 0.729	37.49 1.476	16.76±0.38 0.660±0.015	8.38 0.330	10.29 0.405
00_6527E*** (Metric E65)	mm in	65.15±1.27 2.565±0.050	32.51±0.38 1.280±0.015	27.00±0.41 1.063±0.016	22.20 0.874	44.20 1.740	19.66±0.36 0.774±0.014	10.01 0.394	12.09 0.476
00_7228E*** (F11)	mm in	72.39±1.09 2.850±0.043	27.94±0.51 1.100±0.020	19.05±0.38 0.750±0.015	17.75 0.699	52.63 2.072	19.05±0.38 0.750±0.015	9.53 0.375	16.89 0.665
00_8020E*** (Metric E80)	mm in	80.01±1.19 3.150±0.047	38.10±0.64 1.500±0.025	19.81±0.38 0.780±0.015	28.02 1.103	59.28 2.334	19.81±0.38 0.780±0.015	9.91 0.390	19.81 0.780
00_8024E***	mm in	80.01±1.19 3.150±0.047	24.13±0.64 0.950±0.025	29.72±0.38 1.170±0.015	14.02 0.552	59.28 2.334	19.81±0.38 0.780±0.015	9.91 0.390	19.81 0.780
00_8044E***	mm in	80.01±1.19 3.150±0.047	44.58±0.64 1.755±0.025	19.81±0.38 0.780±0.015	34.37 1.353	59.28 2.334	19.81±0.38 0.780±0.015	9.91 0.390	19.81 0.780
00_114LE***	mm in	114.30±0.76 4.500±0.030	46.18±0.38 1.818±0.015	34.93±0.38 1.375±0.015	28.60 1.126	79.50 3.130	35.10±0.38 1.382±0.015	17.17 0.676	22.20 0.874
00_130LE***	mm in	130.30±3.81 5.130±0.150	32.51±0.30 1.280±0.012	53.85±1.27 2.120±0.050	22.20 0.874	108.46 4.270	20.02±0.76 0.788±0.030	10.01 0.394	44.22 1.741
00_160LE***	mm in	160.02±2.54 6.300±0.100	38.10±0.64 1.500±0.025	39.62±1.27 1.560±0.050	28.14 1.108	138.18 5.440	19.81±0.76 0.780±0.030	9.91 0.390	59.28 2.334

For material code *see p. 14.*
*Add permeability code*** to part number, e.g. for 26μ Kool Mμ the complete part number is 00K4022E026.*

E Core Data



PART NO	A_L nH/T² ± 8%				Path Length l_e (mm)	Cross Section A_e (mm²)	Volume V_e (mm³)
	26µ	40µ	60µ	90µ			
00_1808E***	26	35	48	69	40.1	22.8	914
00_2510E***	39	52	70	100	48.5	38.5	1,870
00_3007E***	33	46	71	92	65.6	60.1	3,940
00_3515E***	56	75	102	146	69.4	84.0	5,830
00_4017E***	56	76	105	151	98.4	128	12,600
00_4020E***	80	108	150	217	98.4	183	18,000
00_4022E***	104	140	194	281	98.4	237	23,300
00_4317E***	88	119	163	234	77.5	152	11,800
00_5528E***	116	157	219	322	123	350	43,100
00_5530E***	138	187	261	382	123	417	51,300
00_6527E***	162	230	300	-	147	540	79,400
00_7228E***	130	173	235	-	137	368	50,400
00_8020E***	103	145	190	-	185	389	72,000
00_8024E***	200	275	370	-	131.4	600	78,840
00_8044E***	91	113	170	-	208	389	80,900
00_114LE***	235	335	445	-	215	1,220	262,000
00_130LE***	254	-	-	-	219	1,080	237,000
00_160LE***	180	-	-	-	273	778	212,000

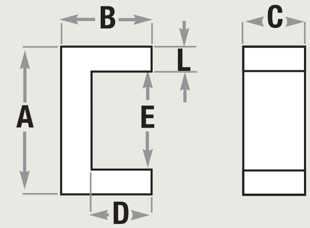
*For material code see p. 14. Add permeability code*** to part number, e.g. for 26µ Kool Mµ the complete part number is 00K4022E026.*

Blocks

PART NO		A	B	C	Volume V_e(mm³)
00_4741B***	mm in	47.50±0.61 1.870±0.024	41.00±0.51 1.614±0.020	27.51±0.41 1.083±0.016	53,600
00_5030B***	mm in	50.50±0.50 1.988±0.020	30.30±0.30 1.193±0.012	15.00±0.20 0.591±0.008	23,000
00_5528B***	mm in	54.86±0.64 2.160±0.025	27.56±0.41 1.085±0.016	20.62±0.38 0.812±0.015	31,200
00_6030B***	mm in	60.00±0.50 2.362±0.020	30.00±0.30 1.181±0.012	15.00±0.20 0.591±0.008	27,000
00_6131B***	mm in	60.50±0.50 2.382±0.020	30.30±0.30 1.193±0.012	20.00±0.20 0.787±0.01	36,700
00_7020B***	mm in	70.50±0.50 2.776±0.020	20.30±0.30 0.799±0.012	20.00±0.20 0.787±0.008	28,600
00_7030B***	mm in	70.50±0.50 2.776±0.020	30.30±0.30 1.193±0.012	20.00±0.20 0.787±0.008	42,800
00_8030B***	mm in	80.50±0.50 3.169±0.020	30.30±0.30 1.193±0.020	20.00±0.21 0.787±0.008	48,800
00_9541B***	mm in	95.00±0.61 3.740±0.024	41.00±0.51 1.614±0.020	27.51±0.41 1.083±0.016	107,200

*For material code see p. 14. Add permeability code*** to part number, e.g. for 26µ Kool Mµ the complete part number is 00K6030B026.*
Note: Inductance is tested in standard picture frame arrangements.

U Core Data

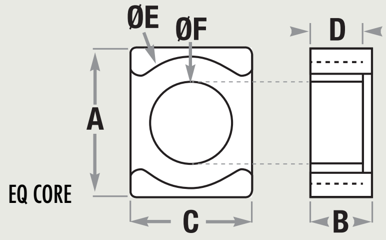


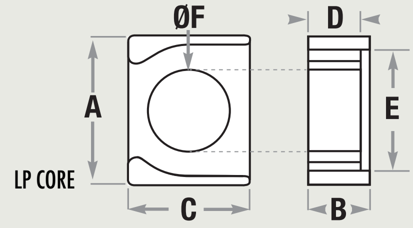
PART NO		A	B	C	D(min)	E(min)	L(nom)
00_3112U***	mm in	31.24±0.51 1.230±0.020	11.18±0.25 0.440±0.010	12.07±0.38 0.475±0.015	2.54 0.100	14.22 0.560	8.26 0.325
00_4110U***	mm in	40.64±0.51 1.600±0.020	11.18±0.51 0.440±0.020	9.53±0.38 0.375±0.015	2.54 0.100	23.62 0.930	8.38 0.330
00_4111U***	mm in	40.64±0.51 1.600±0.020	11.18±0.25 0.440±0.010	12.07±0.38 0.475±0.015	2.54 0.100	23.62 0.930	8.38 0.330
00_4119U***	mm in	40.64±0.51 1.600±0.020	11.18±0.25 0.440±0.010	19.05±0.38 0.750±0.015	2.54 0.100	23.62 0.930	8.38 0.330
00_5527U***	mm in	54.86±0.64 2.160±0.025	27.56±0.51 1.085±0.020	16.33±0.38 0.643±0.015	16.76 0.660	33.78 1.330	10.54 0.415
00_5529U***	mm in	54.86±0.64 2.160±0.025	27.56±0.51 1.085±0.020	23.16±0.38 0.912±0.015	16.51 0.650	33.02 1.300	10.54 0.415
00_6527U***	mm in	65.15±0.89 2.565±0.053	32.51±0.30 1.280±0.012	27.00±0.38 1.063±0.015	22.20 0.874	44.22 1.741	10.01 0.394
00_6533U***	mm in	65.15±0.89 2.565±0.035	32.51±0.30 1.280±0.012	20.02±0.38 0.788±0.015	19.61 0.772	39.24 1.545	12.52 0.493
00_7236U***	mm in	72.39±0.89 2.850±0.035	35.56±0.64 1.400±0.025	20.85±0.38 0.821±0.015	21.36 0.841	43.69 1.720	13.89 0.547
00_8020U***	mm in	80.01±0.89 3.150±0.035	38.10±0.64 1.500±0.025	19.81±0.38 0.780±0.015	28.14 1.108	59.28 2.334	9.91 0.390
00_8038U***	mm in	80.01±0.89 3.150±0.035	38.10±0.64 1.500±0.025	23.04±0.38 0.907±0.015	22.43 0.883	49.28 1.940	15.37 0.605

PART NO	A_L nH/T^2± 8%				Path Length l_e (mm)	Cross Section A_e (mm^2)	Volume V_e (mm^3)
	26µ	40µ	60µ	90µ			
00_3112U***	61	92	111	179	65.6	101	6,630
00_4110U***	42	56	78	109	85.2	80	6,820
00_4111U***	52	72	95	138	85.2	101	8,600
00_4119U***	79	110	151	218	85.2	159	13,600
00_5527U***	67	94	120	-	168	172	28,900
00_5529U***	85	121	160	-	168	244	41,000
00_6527U***	89	111	165	-	219	270	59,100
00_6533U***	82	109	143	-	199	250	49,800
00_7236U***	87	114	149	-	219	290	63,500
00_8020U***	64	77	95	-	273	195	53,200
00_8038U***	97	124	179	-	237	354	83,900

For material code see p. 14.
*Add permeability code*** to part number, e.g., for 26µ Kool Mµ, the complete part number is 00K6527U026.*

EQ Core Data





PART NO		A	B	C	D	E	F
EQ_2619E***L101	mm in	26.50 1.043	10.10 0.398	19.00 0.748	6.80 0.268	22.60 0.890	12.00 0.472
EQ_2619E***L124	mm in	26.50 1.043	12.40 0.488	19.00 0.748	9.10 0.358	22.60 0.890	12.00 0.472
EQ_3222E***L101	mm in	32.00 1.260	10.10 0.398	22.00 0.866	6.40 0.252	27.60 1.087	13.50 0.531
EQ_3222E***L152	mm in	32.00 1.260	15.20 0.598	22.00 0.866	11.50 0.453	27.60 1.087	13.50 0.531
EQ_3626E***L174	mm in	36.00 1.417	17.40 0.685	26.00 1.024	13.40 0.528	32.00 1.260	14.40 0.567
EQ_4128E***L199	mm in	41.50 1.634	19.90 0.783	28.00 1.102	15.40 0.606	36.50 1.437	14.90 0.587
EQ_5032E***L250	mm in	50.00 1.969	25.00 0.984	32.00 1.260	19.50 0.768	44.00 1.732	20.00 0.787

PART NO	A_L nH/T^2 ± 8%				Path Length l_e (mm)	Cross Section A_e (mm^2)	Volume V_e (mm^3)
	26µ	40µ	60µ	75µ			
EQ_2619E***L101	72	110	165	206	54.7	119.8	6,550
EQ_2619E***L124	61	94	141	177	63.9	119.8	7,650
EQ_3222E***L101	84	129	194	241	59.5	152.3	9,100
EQ_3222E***L152	62	96	144	180	79.9	152.3	12,168
EQ_3626E***L174	62	96	144	180	94.7	180.8	17,122
EQ_4128E***L199	57	87	131	163	115.2	199.7	23,000
EQ_5032E***L250	77	118	178	222	133.4	314.1	41,900

*For material code see p. 14. Add permeability code*** to part number, e.g. for 26µ Kool Mµ the complete part number is EQK2619E026L101.*

LP Core Data

PART NO		A	B	C	D	E	F
LP_2314E***L087	mm in	23.39 0.921	8.71 0.343	14.00 0.551	6.20 0.244	19.41 0.764	9.19 0.362
LP_2518E***L099	mm in	25.00 0.984	9.90 0.390	18.00 0.709	6.90 0.272	21.00	11.00 0.433
LP_4225E***L123	mm in	42.00 1.654	12.30 0.484	25.00 0.984	7.90 0.311	35.20 1.386	16.20 0.638
LP_4225E***L158	mm in	42.00 1.654	15.80 0.622	25.00 0.984	11.40 0.449	35.20 1.386	16.20 0.638

PART NO	A_L nH/T^2 ± 8%				Path Length l_e (mm)	Cross Section A_e (mm^2)	Volume V_e (mm^3)
	26µ	40µ	60µ	75µ			
LP_2314E***L087	45	69	103	129	49.1	67	3,290
LP_2518E***L099	56	87	130	162	55.7	96	5,350
LP_4225E***L123	88	136	204	255	76.1	206	15,680
LP_4225E***L158	75	115	172	215	90.1	206	18,560

*For material code see p. 14. Add permeability code*** to part number, e.g. for 26µ Kool Mµ the complete part number is LPK2314E026L087.*

E Core Hardware

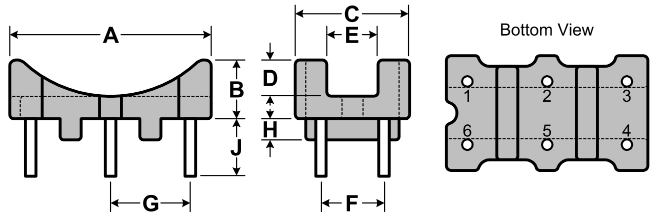
Magnetics has bobbins available for use with Kool Mμ cores. Refer to Magnetics Ferrite Cores catalog for a complete listing of available bobbins. The cores are standard industry sizes that will fit standard bobbins available from many sources. Core pieces can be assembled by bonding the mating surfaces or taping around the perimeter of the core set. Caution is advised if metal clamps are considered, since eddy current heating can occur in conductive material that is very close to the surface of low permeability powder core material.

Core Number	Bobbin Number	Number of Pins	Winding Area (mm^2)	Length Per Turn (mm)
1808E (EI-187)	PCB1808B1	8	31.6	40.5
	00B180801	-	34.2	39.4
2510E (E-2425)	PCB2510V1	10	40.6	54.2
	PCB2510V2	10	20.3	54.2
	00B251001	-	51	45.4
3515E (EI-375)	PCB3515M1	12	94.8	73.4
	PCB3515M2	12	47.4	73.4
	00B351501	-	113	72
4020E (DIN 42/15)	PCB4020N1	12	194	91.4
	00B402021	-	207	97.5
4022E (DIN 42/20)	PCB4022N1	12	194	102.1
4317E (EI-21)	PCB4317M1	12	101	85.6
	00B4317B1	-	122	86
5528E (DIN55/25)	PCB5528WC	14	302	107.3
	00B5528B1	-	302	107.3
5530E	PCB5530FA	14	289	133.8
6527E (Metric E65)	00B652701	-	440	168
	00B6527B1	-	490	166
	00B6527C1		430	203
7228E (F11)	00B722801	-	408	149
8020E (Metric E80)	00B8020B1	-	896	163
	00B8020C2	-	203	203
114LE	00B114LB1	-	945	230

Toroid Hardware

TVB22066A

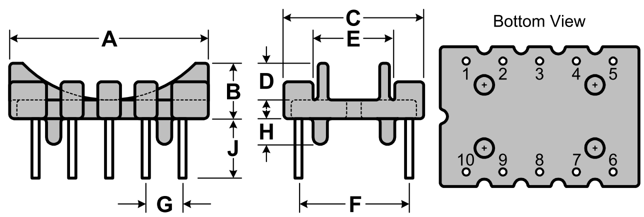
For use with toroids from 12.7 mm through 22.2 mm



Material	6 Pins	A Nom.	B Nom.	C Nom.	D Nom.	E Ref.	F Typ.	G Typ.	H Ref.	J Ref.
Phenolic rated UL94V0	CP wire 0.99 mm	19.0 mm	5.44 mm	10.8 mm	3.51 mm	4.80 mm	6.00 mm	7.49 mm	2.01 mm	5.49 mm

TVB2908TA

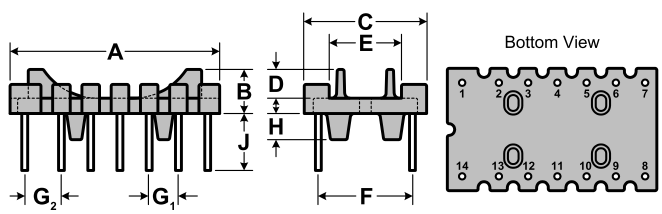
For use with toroids from 20.5 mm through 31.8 mm



Material	10 Pins	A Nom.	B Nom.	C Nom.	D Nom.	E Ref.	F Typ.	G Typ.	H Ref.	J Ref.
Phenolic rated UL94V0	CP wire 0.99 mm	27.0 mm	7.49 mm	19.0 mm	5.00 mm	11.0 mm	15.0 mm	5.00 mm	3.51 mm	8.13 mm

TVB3610FA

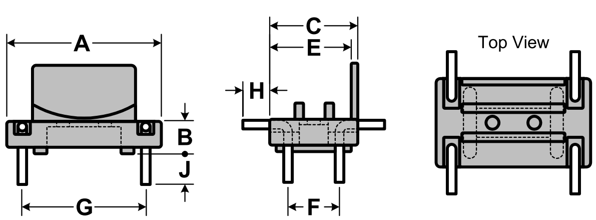
For use with toroids from 28.6 mm through 38.1 mm



Material	14 Pins	A Nom.	B Nom.	C Nom.	D Nom.	E Ref.	F Typ.	G_1 Typ.	G_2 Typ.	H Ref.	J Ref.
Phenolic rated UL94V0	CP wire 0.99 mm	35.8 mm	7.59 mm	20.8 mm	5.00 mm	12.3 mm	16.0 mm	5.00 mm	6.30 mm	4.5 mm	9.75 mm

TVH22064A

For use with toroids from 12.7 mm through 25.4 mm

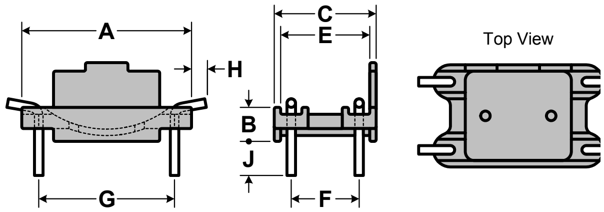


Material	4 Pins	A Nom.	B Nom.	C Nom.	E Ref.	F Typ.	G Typ.	H Ref.	J Ref.
Nylon 6/6 rated UL94V0	CP wire 1.02 mm	19.1 mm	3.94 mm	10.8 mm	9.78 mm	6.35 mm	15.2 mm	3.30 mm	3.81 mm

Toroid Hardware

TVH25074A

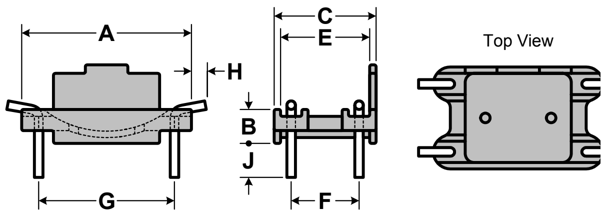
For use with toroids from 20.5 mm (0.810") through 30.5 mm



Material	4 Pins	A Nom.	B Nom.	C Nom.	E Ref.	F Typ.	G Typ.	H Ref.	J Ref.
Nylon 6/6 rated UL94V0	CP wire 1.21 mm	25.4 mm	5.08 mm	15.2 mm	13.0 mm	10.2 mm	20.3 mm	2.29 mm	5.08 mm

TVH38134A

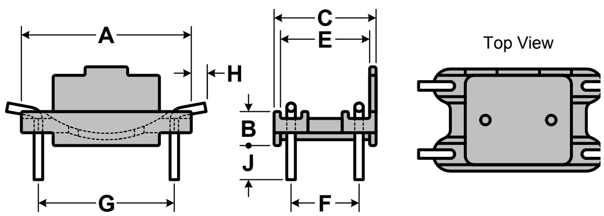
For use with toroids from 25.4 mm (1.000") through 40.6 mm



Material	4 Pins	A Nom.	B Nom.	C Nom.	E Ref.	F Typ.	G Typ.	H Ref.	J Ref.
Nylon 6/6 rated UL94V0	CP wire 1.27 mm	27.9 mm	5.08 mm	20.3 mm	18.0 mm	15.2 mm	22.9 mm	2.29 mm	5.08 mm

TVH49164A

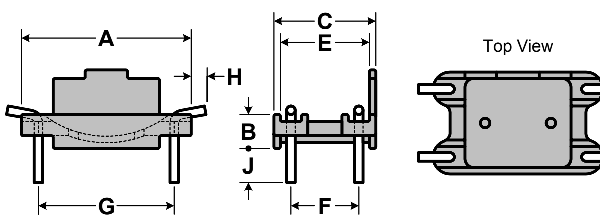
For use with toroids from 38.1 mm through 63.5 mm



Material	4 Pins	A Nom.	B Nom.	C Nom.	E Ref.	F Typ.	G Typ.	H Ref.	J Ref.
Nylon 6/6 rated UL94V0	CP wire 1.27 mm	35.6 mm	5.08 mm	22.9 mm	20.6 mm	17.8 mm	30.5 mm	2.29 mm	5.08 mm

TVH61134A

For use with toroids from 44.4 mm through 71.1 mm



Material	4 Pins	A Nom.	B Nom.	C Nom.	E Ref.	F Typ.	G Typ.	H Ref.	J Ref.
Nylon 6/6 rated UL94V0	CP wire 1.27 mm	43.2 mm	5.08 mm	27.9 mm	25.7 mm	22.9 mm	38.1 mm	2.29 mm	5.08 mm

Winding Tables

3.56 mm OD (140 size)

AWG Wire Size	Single Layer Turns	Single Layer R_{DC} (Ohms, Ω)
30	10	0.0286
31	11	0.0392
32	13	0.0567
33	15	0.0821
34	17	0.119
35	20	0.172
36	23	0.246
37	25	0.328
38	28	0.461
39	33	0.704
40	38	1.03
41	43	1.42
42	49	2.01
43	55	2.91
44	59	3.76
45	69	5.65
46	76	7.80
47	85	11.0
48	98	16.0
49	109	22.2

3.94 mm OD (150 size)

AWG Wire Size	Single Layer Turns	Single Layer R_{DC} (Ohms, Ω)
28	11	0.0251
29	13	0.0364
30	15	0.0529
31	17	0.0749
32	19	0.103
33	22	0.149
34	25	0.218
35	28	0.300
36	32	0.427
37	35	0.574
38	40	0.826
39	46	1.23
40	53	1.80
41	59	2.44
42	68	3.52
43	76	5.06
44	82	6.60
45	96	9.93
46	105	13.6
47	117	19.1

4.65 mm OD (180 size)

AWG Wire Size	Single Layer Turns	Single Layer R_{DC} (Ohms, Ω)
27	11	0.0212
28	12	0.0289
29	14	0.0414
30	16	0.0597
31	18	0.0838
32	20	0.114
33	23	0.165
34	27	0.249
35	31	0.352
36	34	0.481
37	38	0.661
38	43	0.942
39	50	1.42
40	57	2.05
41	64	2.82
42	73	4.01
43	81	5.73
44	88	7.52
45	103	11.3
46	113	15.6

6.35 mm OD (020 size)

AWG Wire Size	Single Layer Turns	Single Layer R_{DC} (Ohms, Ω)
26	12	0.0216
27	14	0.0312
28	16	0.0446
29	18	0.0617
30	21	0.0910
31	23	0.125
32	26	0.173
33	30	0.252
34	34	0.367
35	39	0.518
36	44	0.729
37	48	0.977
38	54	1.39
39	62	2.07
40	71	3.00
41	80	4.13
42	91	5.87
43	101	8.40
44	110	11.1
45	128	16.6

6.60 mm OD (240 size)

AWG Wire Size	Single Layer Turns	Single Layer R_{DC} (Ohms, Ω)
26	11	0.0196
27	13	0.0287
28	15	0.0414
29	17	0.0577
30	19	0.0815
31	22	0.118
32	25	0.165
33	28	0.233
34	32	0.342
35	36	0.473
36	41	0.672
37	45	0.907
38	51	1.30
39	58	1.92
40	67	2.80
41	75	3.84
42	85	5.43
43	95	7.82
44	103	10.3
45	121	15.5

6.60 mm OD (270 size)

AWG Wire Size	Single Layer Turns	Single Layer R_{DC} (Ohms, Ω)
26	11	0.0266
27	13	0.0390
28	15	0.0566
29	17	0.0790
30	19	0.112
31	22	0.163
32	25	0.228
33	28	0.322
34	32	0.474
35	36	0.658
36	41	0.936
37	45	1.26
38	51	1.81
39	58	2.68
40	67	3.92
41	75	5.37
42	85	7.61
43	95	11.0
44	103	14.4
45	121	21.8

6.86 mm OD (410 size)

AWG Wire Size	Single Layer Turns	Single Layer R_{DC} (Ohms, Ω)
22	12	0.0116
23	14	0.0168
24	16	0.0239
25	18	0.0334
26	20	0.0465
27	23	0.0663
28	26	0.0942
29	29	0.129
30	33	0.187
31	37	0.262
32	41	0.358
33	47	0.518
34	53	0.752
35	60	1.05
36	67	1.47
37	74	1.99
38	83	2.82
39	96	4.24
40	109	6.11
41	122	8.37

7.87 mm OD (030 size)

AWG Wire Size	Single Layer Turns	Single Layer R_{DC} (Ohms, Ω)
22	12	0.00988
23	14	0.0142
24	16	0.0201
25	18	0.0281
26	20	0.0390
27	23	0.0556
28	26	0.0787
29	29	0.108
30	33	0.156
31	37	0.218
32	41	0.298
33	47	0.430
34	53	0.623
35	60	0.870
36	67	1.21
37	74	1.65
38	83	2.33
39	96	3.50
40	109	5.04
41	122	6.90

9.65 mm OD (280 size)

AWG Wire Size	Single Layer Turns	Single Layer R_{DC} (Ohms, Ω)
20	12	0.00684
21	13	0.00914
22	15	0.0131
23	18	0.0194
24	20	0.0268
25	23	0.0383
26	26	0.0541
27	29	0.0747
28	33	0.107
29	37	0.147
30	42	0.212
31	47	0.297
32	52	0.404
33	58	0.568
34	67	0.844
35	75	1.17
36	84	1.63
37	92	2.19
38	104	3.13
39	119	4.66

Winding Tables

9.65 mm OD (290 size)

AWG Wire Size	Single Layer Turns	Single Layer R_{DC} (Ohms, Ω)
20	12	0.00747
21	13	0.0100
22	15	0.0144
23	18	0.0213
24	20	0.0295
25	23	0.0421
26	26	0.0596
27	29	0.0825
28	33	0.118
29	37	0.163
30	42	0.234
31	47	0.328
32	52	0.448
33	58	0.630
34	67	0.937
35	75	1.29
36	84	1.81
37	92	2.44
38	104	3.48
39	119	5.18

10.2 mm OD (040 size)

AWG Wire Size	Single Layer Turns	Single Layer R_{DC} (Ohms, Ω)
20	13	0.00818
21	15	0.0117
22	17	0.0165
23	19	0.0227
24	22	0.0328
25	25	0.0463
26	28	0.0650
27	31	0.0893
28	36	0.130
29	40	0.178
30	45	0.254
31	50	0.354
32	56	0.488
33	63	0.693
34	72	1.02
35	81	1.42
36	91	1.99
37	99	2.66
38	112	3.80
39	128	5.65

11.2 mm OD (130 size)

AWG Wire Size	Single Layer Turns	Single Layer R_{DC} (Ohms, Ω)
16	10	0.00272
17	11	0.00366
18	13	0.00532
19	15	0.00756
20	17	0.0106
21	20	0.0153
22	23	0.0220
23	25	0.0295
24	29	0.0426
25	33	0.0602
26	37	0.0845
27	41	0.116
28	46	0.164
29	52	0.228
30	59	0.328
31	65	0.453
32	72	0.618
33	81	0.877
34	93	1.30
35	104	1.79

12.7 mm OD (050 size)

AWG Wire Size	Single Layer Turns	Single Layer R_{DC} (Ohms, Ω)
16	12	0.00364
17	14	0.00520
18	16	0.00733
19	19	0.0107
20	21	0.0147
21	24	0.0207
22	28	0.0302
23	31	0.0413
24	35	0.0582
25	40	0.0829
26	45	0.117
27	50	0.161
28	56	0.227
29	63	0.315
30	71	0.451
31	79	0.629
32	87	0.854
33	98	1.21
34	112	1.79
35	125	2.46

16.6 mm OD (120 size)

AWG Wire Size	Single Layer Turns	Single Layer R_{DC} (Ohms, Ω)
13	12	0.00234
14	14	0.00336
15	16	0.00471
16	18	0.00654
17	21	0.00940
18	24	0.0133
19	27	0.0185
20	30	0.0255
21	34	0.0359
22	39	0.0516
23	44	0.0722
24	49	0.101
25	56	0.143
26	63	0.203
27	70	0.280
28	78	0.393
29	87	0.542
30	98	0.775
31	108	1.07
32	121	1.48

17.3 mm OD (380 size)

AWG Wire Size	Single Layer Turns	Single Layer R_{DC} (Ohms, Ω)
13	11	0.00223
14	13	0.00324
15	15	0.00460
16	17	0.00644
17	20	0.00933
18	22	0.0127
19	25	0.0179
20	29	0.0258
21	32	0.0354
22	37	0.0512
23	41	0.0704
24	46	0.099
25	52	0.139
26	59	0.199
27	66	0.277
28	74	0.391
29	82	0.535
30	92	0.764
31	102	1.06
32	114	1.47

20.3 mm OD (206 size)

AWG Wire Size	Single Layer Turns	Single Layer R_{DC} (Ohms, Ω)
11	12	0.00163
12	14	0.00232
13	16	0.00324
14	18	0.00449
15	21	0.00644
16	24	0.00909
17	27	0.0126
18	31	0.0179
19	35	0.0251
20	39	0.0347
21	45	0.0498
22	50	0.0692
23	56	0.0962
24	63	0.135
25	71	0.191
26	80	0.270
27	89	0.374
28	100	0.529
29	111	0.725
30	125	1.04

22.9 mm OD (310 size)

AWG Wire Size	Single Layer Turns	Single Layer R_{DC} (Ohms, Ω)
10	12	0.00148
11	14	0.00212
12	16	0.00296
13	18	0.00409
14	21	0.00589
15	24	0.00830
16	27	0.0116
17	31	0.0164
18	35	0.0230
19	39	0.0319
20	44	0.0446
21	50	0.0632
22	56	0.0888
23	63	0.124
24	70	0.173
25	79	0.244
26	89	0.345
27	99	0.479
28	111	0.677
29	123	0.927

23.6 mm OD (350 size)

AWG Wire Size	Single Layer Turns	Single Layer R_{DC} (Ohms, Ω)
9	11	0.00120
10	13	0.00173
11	15	0.00244
12	17	0.00340
13	19	0.00467
14	22	0.00668
15	25	0.00938
16	28	0.0130
17	32	0.0184
18	36	0.0258
19	41	0.0365
20	46	0.0510
21	51	0.0705
22	58	0.101
23	65	0.140
24	73	0.197
25	82	0.277
26	92	0.392
27	102	0.542
28	115	0.770

Winding Tables

26.9 mm OD (930 size)

AWG Wire Size	Single Layer Turns	Single Layer R_{DC} (Ohms, Ω)
9	11	0.00141
10	13	0.00205
11	15	0.00292
12	17	0.00407
13	20	0.00592
14	22	0.00808
15	25	0.0114
16	29	0.0164
17	33	0.0232
18	37	0.0324
19	42	0.0459
20	47	0.0640
21	53	0.0902
22	60	0.128
23	66	0.176
24	75	0.251
25	84	0.352
26	94	0.497
27	105	0.693
28	117	0.975

35.8 mm OD (324 size)

AWG Wire Size	Single Layer Turns	Single Layer R_{DC} (Ohms, Ω)
8	16	0.00169
9	19	0.00246
10	22	0.00351
11	25	0.00491
12	28	0.00677
13	32	0.00955
14	36	0.0133
15	41	0.0188
16	46	0.0263
17	52	0.0369
18	58	0.0514
19	65	0.0718
20	73	0.1
21	82	0.141
22	93	0.201
23	103	0.277
24	116	0.392
25	130	0.551
26	146	0.78
27	162	1.08

46.7 mm OD (089 size)

AWG Wire Size	Single Layer Turns	Single Layer R_{DC} (Ohms, Ω)
8	22	0.00296
9	26	0.00432
10	29	0.00596
11	33	0.00840
12	38	0.0120
13	42	0.0164
14	47	0.0229
15	54	0.0327
16	60	0.0455
17	68	0.0641
18	76	0.0897
19	86	0.127
20	96	0.177
21	108	0.249
22	121	0.352
23	135	0.490
24	151	0.690
25	170	0.975
26	190	1.37
27	211	1.91

32.8 mm OD (548 size)

AWG Wire Size	Single Layer Turns	Single Layer R_{DC} (Ohms, Ω)
8	14	0.00147
9	17	0.00218
10	19	0.00299
11	22	0.00427
12	25	0.00598
13	28	0.00826
14	32	0.0117
15	36	0.0163
16	41	0.0232
17	46	0.0322
18	52	0.0455
19	58	0.0632
20	65	0.0883
21	74	0.126
22	83	0.177
23	92	0.245
24	103	0.344
25	116	0.485
26	131	0.691
27	145	0.954

39.9 mm OD (254 size)

AWG Wire Size	Single Layer Turns	Single Layer R_{DC} (Ohms, Ω)
8	18	0.00229
9	21	0.00329
10	24	0.00464
11	27	0.00646
12	31	0.00917
13	35	0.0128
14	39	0.0178
15	44	0.0250
16	50	0.0354
17	56	0.0493
18	63	0.0695
19	71	0.0978
20	80	0.138
21	90	0.194
22	101	0.274
23	112	0.379
24	126	0.536
25	141	0.753
26	158	1.06
27	175	1.47

46.7 mm OD (438 size)

AWG Wire Size	Single Layer Turns	Single Layer R_{DC} (Ohms, Ω)
8	18	0.00280
9	21	0.00405
10	24	0.00573
11	27	0.00801
12	31	0.0114
13	35	0.0160
14	39	0.0223
15	44	0.0314
16	50	0.0446
17	56	0.0622
18	63	0.0878
19	71	0.124
20	80	0.175
21	90	0.246
22	101	0.349
23	112	0.483
24	126	0.683
25	141	0.961
26	158	1.36
27	175	1.88

34.3 mm OD (585 size)

AWG Wire Size	Single Layer Turns	Single Layer R_{DC} (Ohms, Ω)
8	17	0.00160
9	20	0.00229
10	23	0.00323
11	26	0.00449
12	30	0.00636
13	34	0.00887
14	38	0.0123
15	43	0.0172
16	48	0.0238
17	54	0.0332
18	61	0.0467
19	69	0.0657
20	77	0.0913
21	87	0.1287
22	98	0.1821
23	109	0.2519
24	122	0.354
25	137	0.497
26	153	0.699
27	170	0.969

42.9 mm OD (454 size)

AWG Wire Size	Single Layer Turns	Single Layer R_{DC} (Ohms, Ω)
8	18	0.0025
9	21	0.0037
10	24	0.0052
11	27	0.0072
12	31	0.0103
13	35	0.0144
14	39	0.0200
15	44	0.0281
16	50	0.0399
17	56	0.0556
18	63	0.0784
19	71	0.110
20	80	0.156
21	90	0.219
22	101	0.310
23	113	0.433
24	126	0.608
25	142	0.860
26	159	1.22
27	176	1.68

50.6 mm OD (725 size)

AWG Wire Size	Single Layer Turns	Single Layer R_{DC} (Ohms, Ω)
8	19	0.0033
9	22	0.0047
10	25	0.0067
11	28	0.0093
12	32	0.0132
13	36	0.0185
14	40	0.026
15	46	0.037
16	51	0.051
17	58	0.073
18	65	0.102
19	73	0.144
20	82	0.202
21	92	0.28
22	104	0.41
23	116	0.57
24	130	0.80
25	146	1.13
26	163	1.59
27	181	2.21

Winding Tables

50.8 mm OD (715 size)

AWG Wire Size	Single Layer Turns	Single Layer R_{DC} (Ohms, Ω)
8	25	0.00324
9	29	0.00463
10	33	0.00651
11	37	0.00904
12	42	0.0127
13	47	0.0176
14	53	0.0247
15	60	0.0348
16	67	0.0486
17	76	0.0685
18	85	0.0959
19	95	0.134
20	107	0.189
21	120	0.265
22	135	0.375
23	150	0.520
24	168	0.732
25	189	1.03
26	211	1.46
27	234	2.02

62.0 mm OD (620 size)

AWG Wire Size	Single Layer Turns	Single Layer R_{DC} (Ohms, Ω)
6	20	0.00260
7	23	0.00368
8	26	0.00517
9	30	0.00741
10	34	0.0104
11	38	0.0146
12	43	0.0205
13	49	0.0291
14	54	0.0402
15	61	0.0568
16	69	0.0805
17	78	0.114
18	87	0.159
19	98	0.225
20	110	0.316
21	123	0.444
22	138	0.629
23	154	0.878
24	172	1.24
25	194	1.75

77.8 mm OD (866 size)

AWG Wire Size	Single Layer Turns	Single Layer R_{DC} (Ohms, Ω)
8	41	0.00607
9	47	0.00860
10	53	0.0120
11	60	0.0169
12	67	0.0234
13	76	0.0329
14	85	0.0459
15	95	0.0640
16	107	0.0901
17	120	0.126
18	135	0.178
19	151	0.248
20	169	0.348
21	189	0.487
22	212	0.689
23	236	0.958
24	264	1.35
25	296	1.90
26	331	2.68
27	367	3.72

57.2 mm OD (109 size)

AWG Wire Size	Single Layer Turns	Single Layer R_{DC} (Ohms, Ω)
8	29	0.00397
9	33	0.00558
10	37	0.00773
11	42	0.0109
12	48	0.0154
13	54	0.0215
14	60	0.0297
15	68	0.0420
16	76	0.0586
17	85	0.0816
18	96	0.115
19	108	0.162
20	120	0.225
21	135	0.318
22	152	0.451
23	169	0.625
24	189	0.880
25	212	1.24
26	238	1.76
27	263	2.43

68.0 mm OD (070 size)

AWG Wire Size	Single Layer Turns	Single Layer R_{DC} (Ohms, Ω)
6	22	0.0027
7	25	0.0038
8	29	0.0054
9	33	0.0077
10	37	0.0107
11	42	0.0151
12	48	0.022
13	54	0.030
14	60	0.042
15	68	0.059
16	76	0.083
17	85	0.116
18	96	0.165
19	108	0.23
20	120	0.32
21	135	0.46
22	152	0.65
23	169	0.90
24	189	1.27
25	212	1.79

77.8 mm OD (906 size)

AWG Wire Size	Single Layer Turns	Single Layer R_{DC} (Ohms, Ω)
8	41	0.00660
9	47	0.00937
10	53	0.0131
11	60	0.0184
12	67	0.0256
13	76	0.0361
14	85	0.0504
15	95	0.0703
16	107	0.0991
17	120	0.139
18	135	0.195
19	151	0.274
20	169	0.383
21	189	0.538
22	212	0.761
23	236	1.06
24	264	1.49
25	296	2.10
26	331	2.96
27	367	4.11

57.2 mm OD (195 size)

AWG Wire Size	Single Layer Turns	Single Layer R_{DC} (Ohms, Ω)
8	20	0.00322
9	23	0.00458
10	26	0.00642
11	30	0.00921
12	34	0.0130
13	39	0.0185
14	43	0.0254
15	49	0.0362
16	55	0.0508
17	62	0.0714
18	70	0.101
19	78	0.141
20	88	0.199
21	99	0.281
22	111	0.398
23	124	0.555
24	138	0.777
25	156	1.10
26	174	1.56
27	193	2.16

74.1 mm OD (740 size)

AWG Wire Size	Single Layer Turns	Single Layer R_{DC} (Ohms, Ω)
6	29	0.00450
7	33	0.00632
8	38	0.00907
9	43	0.0128
10	49	0.0182
11	55	0.0255
12	62	0.0358
13	70	0.0505
14	78	0.0706
15	88	0.0997
16	98	0.139
17	110	0.196
18	124	0.277
19	139	0.390
20	155	0.546
21	174	0.769
22	195	1.09
23	217	1.52
24	243	2.14
25	273	3.03

77.8 mm OD (778 size)

AWG Wire Size	Single Layer Turns	Single Layer R_{DC} (Ohms, Ω)
8	32	0.0071
9	37	0.0102
10	41	0.0141
11	47	0.0202
12	53	0.0284
13	60	0.0401
14	67	0.056
15	75	0.079
16	84	0.111
17	95	0.156
18	106	0.219
19	119	0.309
20	133	0.432
21	150	0.61
22	168	0.87
23	187	1.21
24	209	1.70
25	235	2.40
26	263	3.40
27	291	4.71

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Winding Tables

101.6 mm OD (102 size)

AWG Wire Size	Single Layer Turns	Single Layer R_{DC} (Ohms, Ω)
6	38	0.00489
7	43	0.00682
8	49	0.00965
9	55	0.0135
10	62	0.0189
11	70	0.0266
12	79	0.0373
13	89	0.0524
14	99	0.0730
15	112	0.103
16	125	0.145
17	140	0.202
18	157	0.285
19	176	0.400
20	197	0.561
21	221	0.790
22	248	1.12
23	275	1.55
24	308	2.19
25	345	3.09

132.6 mm OD (337 size)

AWG Wire Size	Single Layer Turns	Single Layer R_{DC} (Ohms, Ω)
6	54	0.00890
7	61	0.0124
8	69	0.0175
9	78	0.0247
10	87	0.0344
11	99	0.0489
12	111	0.0685
13	124	0.0956
14	138	0.133
15	155	0.188
16	174	0.265
17	195	0.371
18	218	0.522
19	244	0.733
20	273	1.03
21	306	1.45
22	343	2.05
23	381	2.85
24	426	4.02
25	478	5.68

165.1 mm OD (165 size)

AWG Wire Size	Single Layer Turns	Single Layer R_{DC} (Ohms, Ω)
6	72	0.0139
7	81	0.0193
8	91	0.0272
9	103	0.0384
10	115	0.0536
11	130	0.0759
12	145	0.106
13	163	0.149
14	182	0.209
15	204	0.293
16	228	0.412
17	256	0.579
18	286	0.814
19	320	1.14
20	358	1.61
21	401	2.26
22	449	3.21
23	499	4.46
24	558	6.29
25	625	8.86

165.1 mm OD (171 size)

AWG Wire Size	Single Layer Turns	Single Layer R_{DC} (Ohms, Ω)
6	61	0.0120
7	69	0.0169
8	78	0.0238
9	88	0.0336
10	99	0.0473
11	111	0.0664
12	125	0.0934
13	140	0.131
14	156	0.183
15	175	0.258
16	196	0.363
17	219	0.508
18	246	0.718
19	275	1.01
20	307	1.41
21	344	1.99
22	386	2.83
23	428	3.92
24	479	5.53
25	537	7.81

Other Products from Magnetics

Ferrites

Ferrite cores are manufactured for a wide variety of applications. Magnetics produces the leading MnZn ferrite materials for power transformers, power inductors, wideband transformers, common mode chokes, and many other applications. In addition to offering the leading materials, other advantages of ferrites from Magnetics include the full range of standard planar E, ER, and I cores; the widest range of toroid sizes in power and high permeability materials; standard gapping to precise inductance or mechanical dimension; a wide range of available coil formers and assembly hardware; and superior toroid coatings available in several options.

Power Materials

Five low loss materials are engineered for optimum frequency and temperature performance in power applications. Magnetics' R, P, F, L, and T materials provide superior saturation, high temperature performance, low losses and product consistency.

Shapes: E cores, Planar E cores, ER cores, ETD, EC, U cores, I cores, PQ, Planar PQ, RM, Toroids, Pot cores, RS (round-slab), DS (double slab), EP, Special Shapes.

Applications: Telecom power supplies, computer power supplies, commercial power supplies, consumer power supplies, automotive, DC-DC converters, telecom data interfaces, impedance matching transformers, handheld devices, high power control (gate drives), computer servers, distributed power (DC-DC), EMI filters, aerospace, and medical.

High Permeability Materials

Three high permeability materials (5,000µ J material, 10,000µ W material, and 15,000µ M material) are engineered for optimum frequency and impedance performance in signal, choke and filter applications. These Magnetics materials provide superior loss factor, frequency response, temperature performance, and product consistency.

Shapes: Toroids, E cores, U cores, RM, Pot cores, RS (round-slab), DS (double slab), EP, Special Shapes.

Applications: common mode chokes, EMI filters, other filters, pulse transformers, current transformers, broadband transformers, current sensors, telecom data interfaces, impedance matching interfaces, handheld devices, spike suppression, and gate drive transformers.

Tape Wound Cores

Strip wound cores are made from high permeability magnetic strip alloys of nickel-iron (80% or 50% nickel), and silicon-iron. The alloys are known as Orthonol®, Permalloy 80, 48 Alloy and Magnesil®. Tape Wound Cores are produced as small as 0.438” OD in hundreds of sizes. For a wide range of frequency applications, materials are produced in thicknesses from 1/2 mil (0.013 mm) through 4 mils (0.102 mm). Cases are robust nylon and aluminum boxes, rated for 200°C continuous operation and 2,000 minimum voltage breakdown.

Applications: aerospace, radar installations, jet engine controls, power supplies, current transformers, magnetic amplifiers, and pulse transformers. Tape wound cores are useful for both power and signal circuits in harsh environmental conditions where robust component operation is essential to achieve high reliability.

Bobbin Cores

Bobbin cores are miniature tape cores made from ultra-thin (0.000125” to 0.001” thick) strip material wound on nonmagnetic stainless steel bobbins. Bobbin cores are generally manufactured from Permalloy 80 and Orthonol®. Covered with protective caps and then epoxy coated, bobbin cores can be made as small as 0.05” ID and with strip widths down to 0.032”. Bobbin cores can switch from positive to negative saturation in a few microseconds or less, making them ideal for analog logic elements, magnetometers, and pulse transformers.

Applications: flux gate magnetometers for sensor and compass applications, high frequency magnetic amplifiers, harmonic generators, oscillators, pulse transformers, current transformers, and inverter transformers. Bobbin cores are also useful for analog counters, timers, magnetic sensors, and other analog circuits in harsh environmental conditions where robust and reliable operation is essential.

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