

Injected Ferrite & NdFeB

PLASTIC-INJECTED FERRITE AND NdFeB (I-CER, I-REN)

Probably one of the most significant among the latest developments in magnetic materials, plastic-injected magnets are obtained from Ferrite or NdFeB powder in conjunction with a plastic binder, usually PA6, PA12 or PPS. Hybrid compounds can also be developed on request.

Its typical plastic injection process permits complex miniaturized shapes with high precision, and direct moulding combined with other components such as metal inserts, shafts and rotors is possible. When required additional machining is easily provided.

Another great advantage is the magnetizing versatility, from partial area magnetization to multi-pole axial, radial and polar patterns. These magnets are particularly recommended for high precision applications such as computers, instruments and medical devices.

	I-CER	I-REN
Br Temperature Coeff.(Tk)	%/°C - 0,2	- 0,12
HcJ Temperature Coeff. (Tk)	%/°C + 0,3	- 0,4
Curie Temperature	°C 450	310
Relative Permeability (μr)	- 1,1 - 1,2	1,15
Saturation Field	kOe > 14	> 38
Electrical Resistivity	Ω m 10 ²	n.a.
Compressive strength	N/mm ² > 2	n.a.
Flexural Strength	N/mm ² 1700	n.a.
Tensile Strength	N/mm ² 38 - 65	n.a.
Impact Strenght	N/mm ² > 20	n.a.
Rockwell Hardness	HRC 115	90-95 (Sh D)
Flexural Temperature	°C 158	n.a.
Thermal Conductivity	kcal/cm/hr/°C ~ 12	n.a.
Thermal Expansion Coeff. α, β	10 ⁻⁶ /°C 180	10

Characterization of physical and mechanical properties have been done on standard sample with dimensions > (10 x 10 x 10) for magnetic properties and > (10 x 10 x 5) for mechanical properties. Because of permanent losses after temperature exposure, depending on B/H value, specially in NdFeB material, consult us for more details.

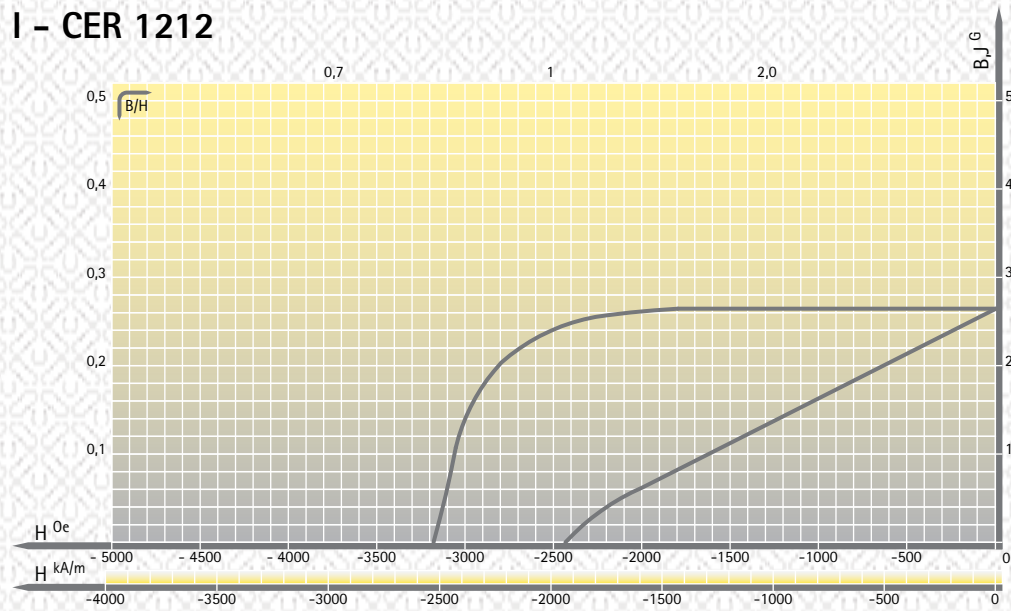
The validity of the reported data is referred to the date of issue.
04/2009

I-CER GRADES (Ferrite)	REMANENCE		COERCIVITY				MAXIMUM ENERGY PRODUCT		BINDER	DENSITY	SUGGESTED MAXIMUM OPERATING TEMPERATURE	
	Br		HcB		HcJ		BHmax				g/cm ³	B/H > 0,7 °C
	kG	mT	kOe	kA/m	kOe	kA/m	MGOe	kJ/m ³				
I-CER 1006	2,10 - 2,40	210 - 240	1,51 - 2,14	120 - 170	2,01 - 2,89	160 - 230	0,88 - 1,51	7,0 - 12,0	PA6	3	140 °C	
I-CER 1012									PA12		120 °C	
I-CER 1206	2,50 - 2,60	250 - 260	2,06 - 2,16	164 - 174	2,64 - 2,89	210 - 230	1,49 - 1,57	11,9 - 12,5	PA6	3,4	140 °C	
I-CER 1212									PA12		120 °C	
I-CER 1406	2,70 - 2,80	270 - 280	2,14 - 2,26	170 - 180	2,64 - 2,89	210 - 230	1,80 - 1,87	14,3 - 14,9	PA6	3,5	140 °C	
I-CER 1412									PA12		120 °C	
I-CER 1606	2,85 - 2,95	285 - 295	2,39 - 2,64	190 - 210	2,64 - 3,13	210 - 250	1,95 - 2,12	15,5 - 16,9	PA6	3,7	140 °C	
I-CER 1612									PA12		120 °C	
I-CER 12/PPS	2,45 - 2,65	245 - 265	2,14 - 2,51	170 - 200	2,64 - 3,14	210 - 250	1,38 - 1,63	11,0 - 13,0	PPS	3,5	200 °C	

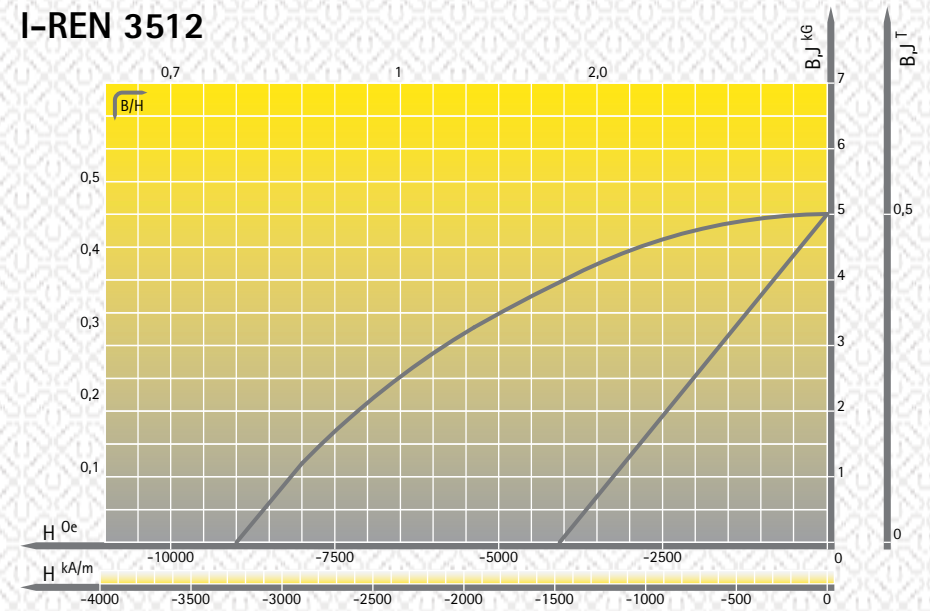
I-REN GRADES (NdFeB)	REMANENCE		COERCIVITY				MAXIMUM ENERGY PRODUCT		BINDER	DENSITY	SUGGESTED MAXIMUM OPERATING TEMPERATURE	
	Br		HcB		HcJ		BHmax				g/cm ³	B/H > 0,7 °C
	kG	mT	kOe	kA/m	kOe	kA/m	MGOe	kJ/m ³				
I-REN 3512	4,8 - 5,1	480 - 510	3,8 - 4,2	303 - 334	7,5 - 9,5	597 - 756	4,70 - 5,20	37,6 - 41,6	PA12	5,00	120 °C	
I-REN 4212	5,5 - 6,0	550 - 600	4,1 - 4,4	320 - 342	7,9 - 8,7	620 - 680	5,9 - 6,2	47,2 - 49,6	PA12	5,03		
I-REN 5412	5,8 - 6,2	580 - 620	4,3 - 4,6	335 - 358	8,2 - 8,8	640 - 690	6,7 - 7,0	53 - 56	PA12	5,05		
I-REN 8012	6,0 - 6,5	600 - 650	5,2 - 6,0	410 - 470	11,9 - 13,2	930 - 1035	9,8 - 10,2	78 - 81	PA12	5,10	150 °C	
I-REN 34/PPS	4,0 - 5,0	400 - 500	3,5 - 4,0	278 - 318	11,2 - 11,5	875 - 920	4,1 - 4,4	33 - 35	PPS	4,70		

Other grades available on request.

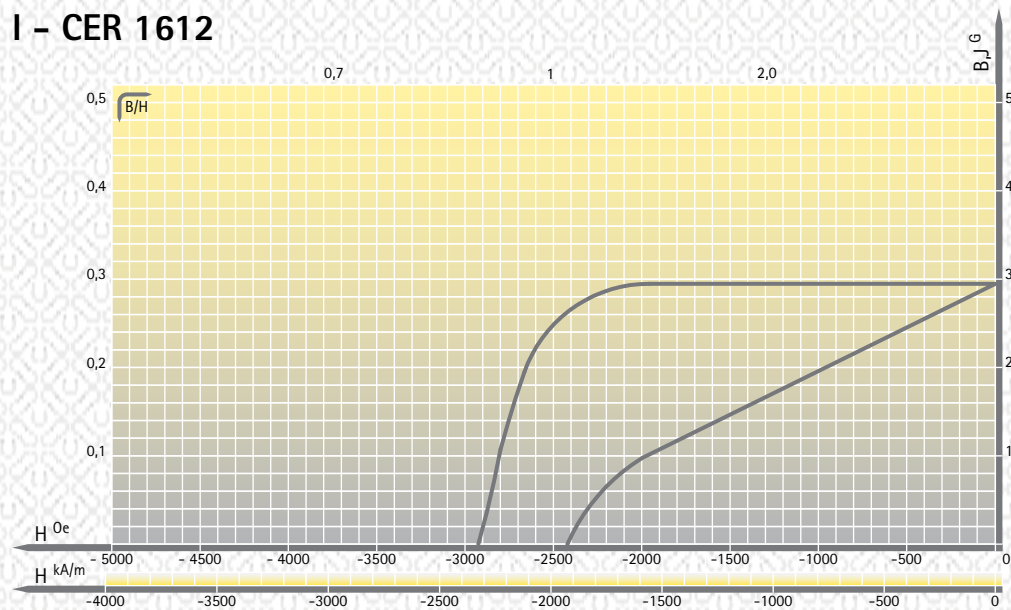
I - CER 1212



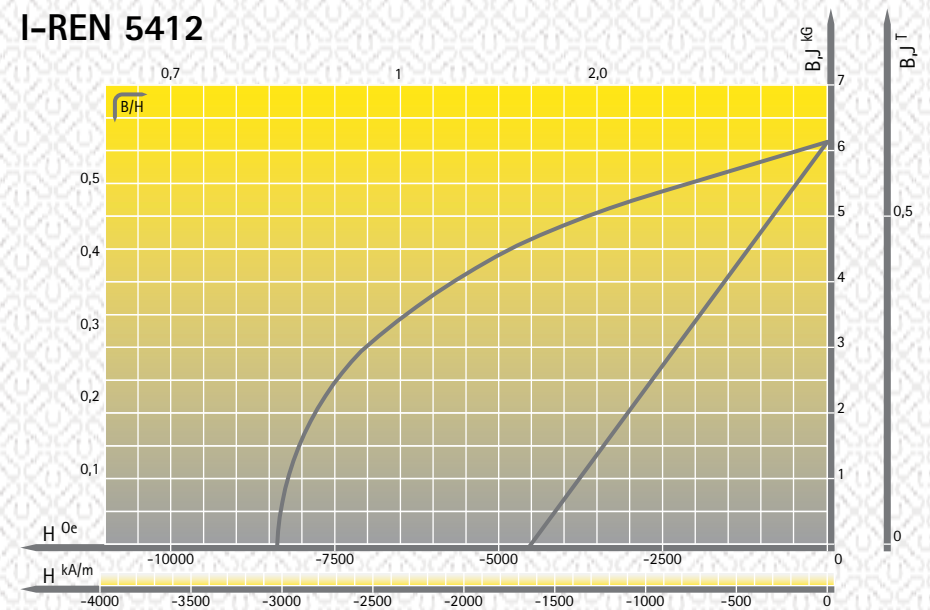
I-REN 3512



I - CER 1612



I-REN 5412



Measured samples data.