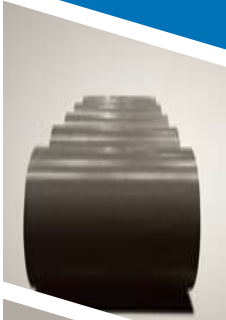


Cold-Rolled Products

Cold Rolled



Electrical Steel

电工钢

Technical Manual of Baosteel GO Silicon Steel Products
宝钢取向硅钢产品技术手册



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Preface 前言

2008年5月15日，宝钢第一卷合格取向硅钢成功下线，目前品种已迅速拓展至普通型、高磁感型和磁畴细化高磁感型三大类取向硅钢。

本手册综合介绍了宝钢取向硅钢牌号、品种、规格、应用、电磁性能、力学性能、尺寸板形公差以及相关的使用技术，使用户对宝钢取向硅钢产品能进一步认识和了解，充分利用宝钢取向硅钢产品特性，生产出更加优良的下游产品。

Since the successful production of the first coil of qualified GO silicon steel on May 15, 2008, the varieties of Baosteel GO silicon steel rapidly expand to 3 categories, namely common type, high induction type and domain refined high induction type.

This manual generally introduces the grades, varieties, specifications, applications, electromagnetic property, mechanical property, dimensional and shape tolerances as well as relevant application technologies of Baosteel GO silicon steel, so that the users can further their knowledge and understanding about Baosteel GO silicon steel and produce better downstream products by fully making use of the features of Baosteel GO silicon steel products.

Application Technology

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宝山钢铁股份有限公司（简称“宝钢股份”）以其诚信、人才、创新、管理、技术诸方面综合优势，奠定了在国际钢铁市场上世界级钢铁联合企业的地位。《世界钢铁业指南》评定宝钢股份在世界钢铁行业的综合竞争力为前三名，认为也是未来最具发展潜力的钢铁企业。

宝钢股份专业生产高技术含量、高附加值的钢铁产品。在汽车用钢，造船用钢，油、汽开采和输送用钢，家电用钢，电工器材用钢，锅炉和压力容器用钢，食品、饮料等包装用钢，金属制品用钢，不锈钢，特种材料用钢以及高等级建筑用钢等领域，宝钢股份在成为中国市场主要钢材供应商的同时，产品出口日本、韩国、欧美四十多个国家和地区。

公司全部装备技术建立在当代钢铁冶炼、冷热加工、液压传感、电子控制、计算机和信息通讯等先进技术的基础上，具有大型化、连续化、自动化的特点。通过引进并对其不断进行技术改造，保持着世界最先进的技术水平。

公司采用国际先进的质量管理，主要产品均获得国际权威机构认可。通过BSI英国标准协会ISO9001认证和复审，获美国API会标、日本JIS认可证书，通过了通用、福特、克莱斯勒等世界三大著名汽车厂的QS9000贯标认证，得到中国、法国、美国、英国、德国、挪威、意大利等七国船级社的认可。公司具有雄厚的研发实力，从事新技术、新产品、新工艺、新装备的开发研制，为公司积聚了不竭的发展动力。

公司重视环境保护，追求可持续发展，在中国冶金行业第一家通过ISO14001环境贯标认证，堪称世界上最美丽的钢铁企业。



Baoshan Iron & Steel Co., Ltd. (Baosteel Co., Ltd.) has established its standing of the world-class steel complex in the global steel market by means of leveraging comprehensive advantages such as good faith, talents, innovation, management, and technology, Baosteel Co., Ltd. is also recognized as a world leading steel company by the global steel market. According to World Steel Dynamics, the company ranks No. 3 in the world in terms of comprehensive competency; it is also believed to have the greatest development potential.

The company specializes in producing high-tech and high value-added steel products. Meanwhile it has become the main steel supplier to the industries of automobile, household appliances, oil exploration, oil and gas transmission, shipbuilding, pressure vessel and container materials in China, Baosteel also exports its products to over forty countries and regions including Japan, South Korea, the United States and European Union.

All the facilities the company possesses are based on the advanced technologies of contemporary steel smelting, cold and hot rolling processing, hydraulic sensing, real-time detection, electronic control, computer and information communications. They feature large-scale, continuity and automation and keep the most advanced technology in the world through constant technical modification and innovation. The company adopts advanced quality management system in the world and its main products are recognized by the international authoritative institutions. They received ISO9001 certification from BSI (British Standards Institution). They were allowed to use the emblem of API (American Petroleum Institute). They obtained a certificate from JIS in Japan and passed the certification of QS9000 system by GM, Ford and Chrysler, three most famous auto makers in the world. Baosteel's products have also obtained recognition by seven classification societies of China, France, America, Britain, Germany, Norway and Italy.

The company boasts strong capacity in R&D of new technology, new products and new equipments, with a view to accumulate sustainable power of development.

The company attaches great importance on environment protection, and sustainable development. It is the first one among Chinese metallic companies to obtain ISO 14001 environment certification. Baosteel is hailed as the most beautiful plant in the world.



Build Baosteel into the most competitive
iron & steel enterprise in the world

Technical Manual
of GO Silicon Steel Products





GO Silicon Steel Profile 取向硅钢简介

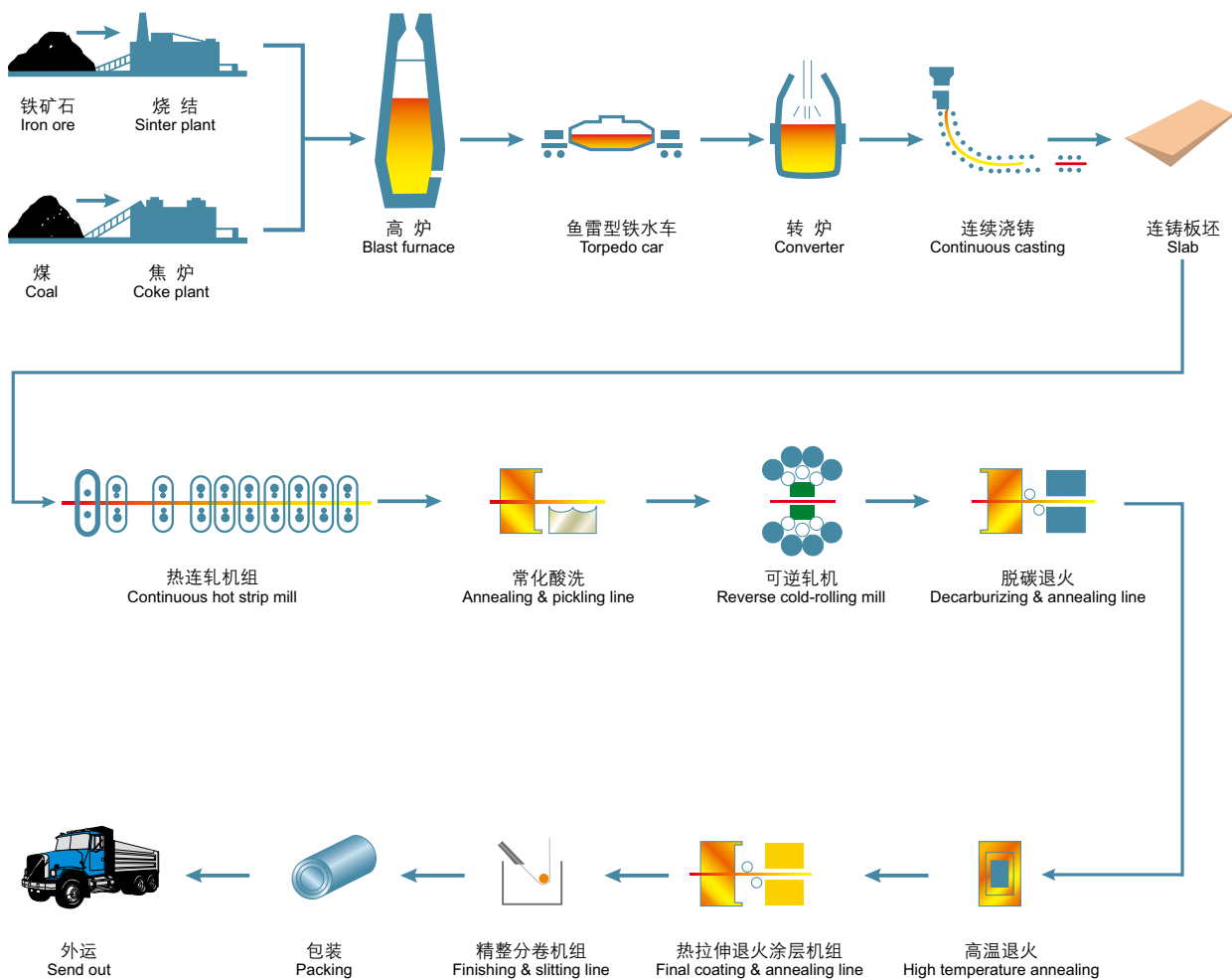
- 05 发展历史
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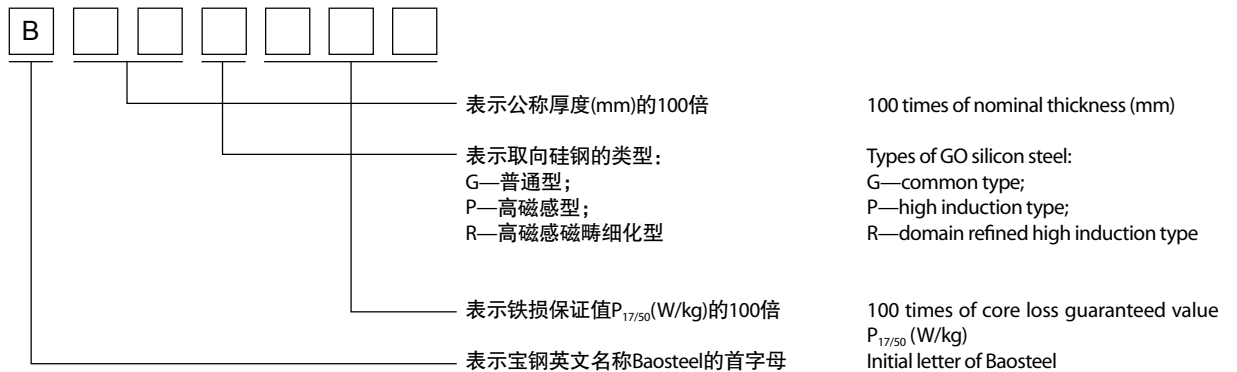
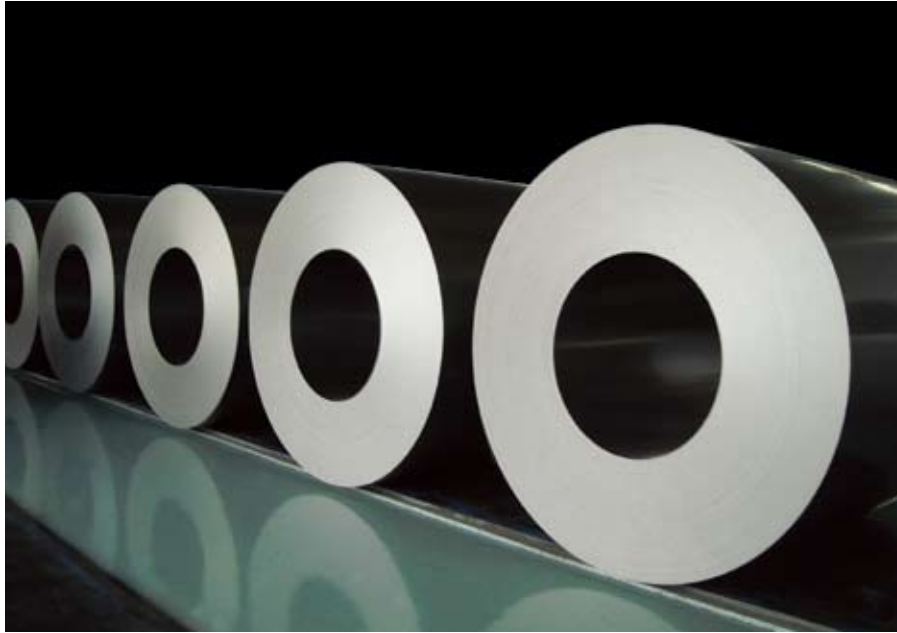


- 1996年，取向硅钢工程列入公司发展战略。
- 1997年，启动取向硅钢制造技术自主研发项目。
- 2004年，实验室稳定试制出合格产品，宝钢取向硅钢技术自主研发取得突破。
- 2004年，决策自主集成建设取向硅钢生产线，并确定取向硅钢为宝钢第二大战略产品。
- 2007年，完成9000吨的取向硅钢大生产验证。
- 2008年，取向硅钢产线全面投产。
- 2008年5月15日，第一卷合格普通取向硅钢下线。
- 2008年7月29日，第一卷合格NSGO高磁感取向硅钢下线。
- 2008年12月12日，第一卷合格激光刻痕NSGO产品下线。
- Year 1996, GO silicon steel project was listed into corporate development strategies.
- Year 1997, the independent R&D project of GO silicon steel manufacture technologies was initiated.
- Year 2004, qualified products were stably trial manufactured in the lab and Baosteel achieved breakthrough in the independent R&D of GO silicon steel technologies.
- Year 2004, the decision was made to independently integrate and construct GO silicon steel production line and regard GO silicon steel as the second largest strategic product of Baosteel.
- Year 2007, the commercial production of 9000t of GO silicon steel was validated.
- Year 2008, GO silicon steel production line was put into production.
- On May 15, 2008, the first coil of qualified common GO silicon steel was produced.
- On July 29, 2008, the first coil of qualified NSGO silicon steel was produced.
- On Dec 12, 2008, the first coil of qualified domain refined NSGO product was produced.

Production flow chart of GO silicon steel

工艺流程





示例:	Examples:
B27G120表示公称厚度为0.27mm普通取向硅钢, 铁损的保证值 $P_{17/50}$ 不大于1.20W/kg;	B27G120 means common GO silicon steel with a nominal thickness of 0.27mm, the guaranteed value of core loss $P_{17/50}$ not more than 1.20W/kg;
B30P105表示公称厚度为0.30mm高磁感取向硅钢, 铁损的保证值 $P_{17/50}$ 不大于1.05W/kg;	B30P105 means high induction GO silicon steel with a nominal thickness of 0.30mm, the guaranteed value of core loss $P_{17/50}$ not more than 1.05W/kg;
B27R090表示公称厚度为0.27mm磁畴细化高磁感取向硅钢, 铁损的保证值 $P_{17/50}$ 不大于0.90W/kg;	B27R090 means domain refined high induction GO silicon steel with a nominal thickness of 0.27mm, the guaranteed value of core loss $P_{17/50}$ not more than 0.90W/kg;



- **优异的电磁性能**
一流的设备、先进的制造工艺以及严格的管理确保了宝钢取向硅钢电磁性能的优良、稳定。
- **出色的加工性能**
高精度尺寸与优异的力学性能便于用户分条、剪切与叠片。
- **卓越的尺寸精度**
宝钢先进的设备和制造技术，确保取向硅钢良好的板形，表面平滑、厚度均匀、同板差小、叠片系数高。
- **优良的表面涂层性能**
宝钢取向硅钢具有均匀的表面涂层，良好的附着性，防止加工时的涂层脱落；层间绝缘性能良好。
- **更多的宽度选择**
宝钢取向硅钢的板宽700-1200mm，用户可以从中选择，提高材料的利用率。
- **Excellent electromagnetic property**
first class equipment, leading manufacture process and strict management ensure the excellent and stable electromagnetic property of Baosteel GO silicon steel.
- **Outstanding processability**
high accuracy dimension and excellent mechanical property are convenient for the users to slit, cut and laminate.
- **Preeminent dimensional accuracy**
Baosteel's leading equipment and manufacture technology ensure the good shape, smooth surface, uniform thickness, small intra-plate deviation and high lamination factor.
- **Excellent surface coating property**
Baosteel GO silicon steel has uniform surface coating with good adhesiveness, which can prevent peeling of coating during processing; interlaminar insulation property is good.
- **More width options**
the users can choose from sheet width 700-1200mm of Baosteel GO silicon steel, so as to improve the utilization ratio of material.

Technical Manual
of GO Silicon Steel Products

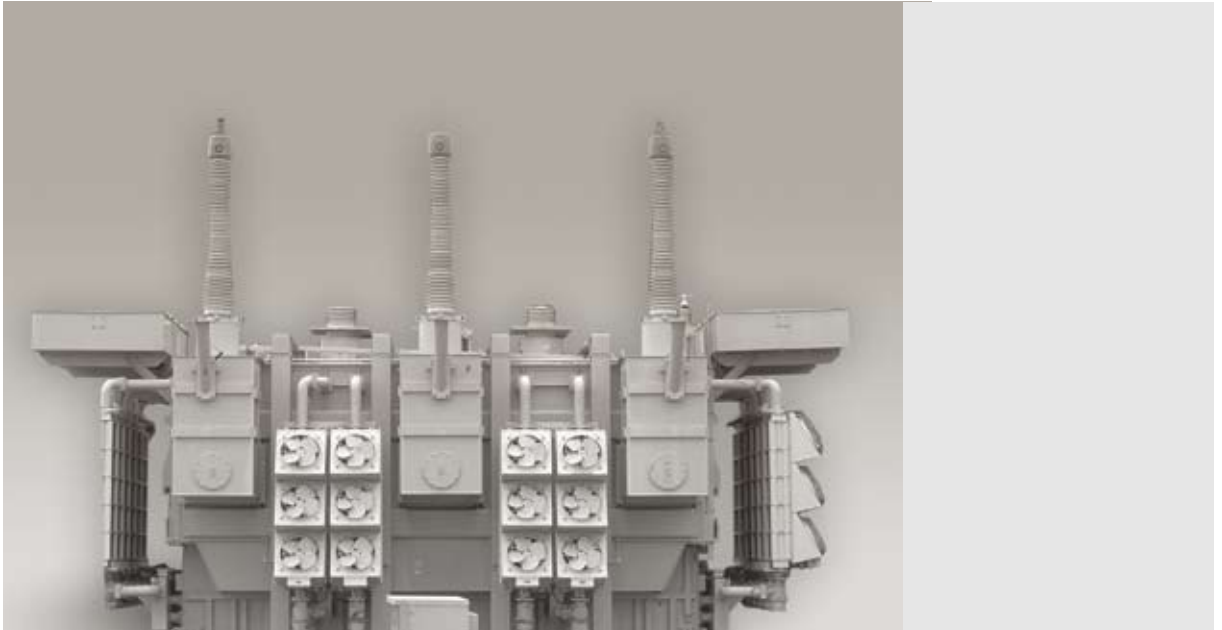




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ELECTROMAGNETIC PROPERTY CURVES



品种 Varieties	普通型 Common type	高磁感型 High induction type	磁畴细化高磁感型 Domain refined high induction type
大型电机 Large motors	√	√	
大型变压器 Large transformers	√	√	√
中小型变压器 Medium and small transformers	√	√	√
分配变压器 Distributing transformers	√	√	
调压器 Voltage regulator	√	√	
电抗器及磁放大器 Reactor and magnetic amplifier	√	√	√
中频变压器 IF transformer		√	
互感器 Mutual inductor	√	√	
电视机变压器 TV transformer	√	√	
收音机变压器 Radio transformer	√	√	
无线电广播变压器 Radio broadcast transformer		√	

Specifications of Baosteel GO silicon steel products

宝钢取向硅钢产品规格

产品标准尺寸

Standard dimensions of products

公称厚度 Available thickness (mm)	公称宽度 Available width range (mm)	内径 Inside diameter (mm)
0.23、0.27、0.30、0.35	700~1200	508

尺寸及板形公差

Dimensional and shape tolerances

公称厚度 Thickness (mm)	厚度允许偏差 Thickness tolerance (mm)	纵向厚度差 Longitudinal thickness tolerance (mm)	横向厚度差 Traverse thickness tolerance (mm)	宽度允许偏差 Width tolerance (mm)	不平度 Flatness (%)	2m内镰刀弯 Camber within 2m (mm)
0.23	±0.025	≤0.030	≤0.020	0~+2	≤1.5	≤1.0
0.27	±0.030					
0.30						
0.35						

注：a.允许以不切边状态交货，其宽度允许偏差为+5mm。
b.横向厚度差是指钢板中心与距边部15mm的厚度差。
c.对于有特殊要求的用户，宝钢可以标准+ α 供货。

Note: a. Delivery without trimming is allowed, and the allowable width deviation is +5mm.
b. Traverse thickness deviation refers to the thickness difference between the sheet center and 15mm from the edge.
c. Baosteel can make the delivery as per standard + α for users with special requirements.

绝缘涂层

取向硅钢产品表面均涂以一层无机绝缘涂层，该涂层具有优异的涂层特性：

- 层间电阻高——层间电阻高，确保良好的层间绝缘性。
- 冲片性能优——涂层与底层紧密结合，具有良好的附着性，可防止加工时涂层脱落。
- 叠片系数高——表面涂层均匀且薄，具有优异的叠片性能。
- 耐热性能好——涂层能承受800℃退火，且不被损坏。
- 耐蚀性能好——涂层与冷却油、绝缘油、机械油及氟里昂、防冻油等不相容，免受侵蚀。

Insulating Coating

The surface of GO silicon steel products is coated with a layer of inorganic insulating coat, which has the following excellent coating features:

- High interlamination resistance —— High interlamination resistance can ensure excellent interlaminar insulation.
- Excellent punching property —— Close combination of coat and substrate give rise to good adhesiveness, which can prevent peeling of coat during processing.
- High lamination factor —— Surface coat is uniform and thin, so that the lamination factor is good.
- Good heat resistance —— The coat can withstand 800 annealing without damage.
- Good corrosion resistance —— The coat is incompatible with cooling oil, insulating oil, mechanical oil, Freon and anti-freezing oil, so it is immune from their corrosion.

电磁性能标准
Electromagnetic property standard

类型 Type	牌号 Grade	公称厚度 Thickness (mm)	理论密度 Density (kg/dm ³)	最大铁损P _{17/50} Max. Core loss (W/kg)	最小磁感B ₈ Min. Induction (T)
普通型 Common type	B23G110	0.23	7.65	1.10	1.80
	B23G120			1.20	1.80
	B27G120	0.27	7.65	1.20	1.80
	B27G130			1.30	1.80
	B30G120	0.30	7.65	1.20	1.80
	B30G130			1.30	1.80
	B30G140			1.40	1.80
	B35G135	0.35	7.65	1.35	1.80
	B35G145			1.45	1.80
	B35G155			1.55	1.80
高磁感型 High induction type	B23P090	0.23	7.65	0.90	1.87
	B23P095			0.95	1.87
	B23P100			1.00	1.87
	B27P095	0.27	7.65	0.95	1.88
	B27P100			1.00	1.88
	B27P110			1.10	1.88
	B30P100	0.30	7.65	1.00	1.88
	B30P105			1.05	1.88
	B30P110			1.10	1.88
	B30P120			1.20	1.88
	B35P115	0.35	7.65	1.15	1.88
	B35P125			1.25	1.88
	B35P135			1.35	1.88
磁畴细化 高磁感型 Domain refined high induction type	B23R080	0.23	7.65	0.80	1.87
	B23R085			0.85	1.87
	B23R090			0.90	1.87
	B27R090	0.27	7.65	0.90	1.87
	B27R095			0.95	1.87

注：检测依据GB/T3655-2000；
P_{17/50}表示在最大磁感应强度为1.7T，频率为50Hz时，单位kg试样的铁芯损耗；
B₈表示对应于磁场强度为800A/m时的磁感应强度。

Note: Detecting basis GB/T3655-2000
P_{17/50} means core loss of sample per kg at max. magnetic induction 1.7T and frequency 50Hz;
B₈ means magnetic induction corresponding to 800A/m magnetic field intensity.

典型电磁性能

Typical electromagnetic property

类型 Type	牌号 Grade	层间电阻 Resistivity ($\Omega\text{m}^2/\text{片}$)	铁损 Core loss (W/kg)		磁感 Induction (T)	
			P _{15/50}	P _{17/50}	B ₈	B ₂₅
普通型 Common type	B27G120	140	0.78	1.16	1.85	1.92
	B27G130		0.83	1.22	1.84	1.91
	B30G120	190	0.83	1.17	1.85	1.93
	B30G130		0.85	1.23	1.85	1.93
	B30G140		0.89	1.31	1.84	1.92
高磁感型 High induction type	B27P100	280	0.72	0.97	1.90	1.94
	B27P110		0.80	1.05	1.89	1.93
	B30P105	280	0.77	1.02	1.90	1.94
	B30P110		0.80	1.06	1.89	1.93
	B30P120		0.88	1.14	1.89	1.93
磁畴细化 高磁感型 Domain refined high induction type	B27R095	280	0.68	0.90	1.89	1.93

典型机械性能

Typical mechanical property

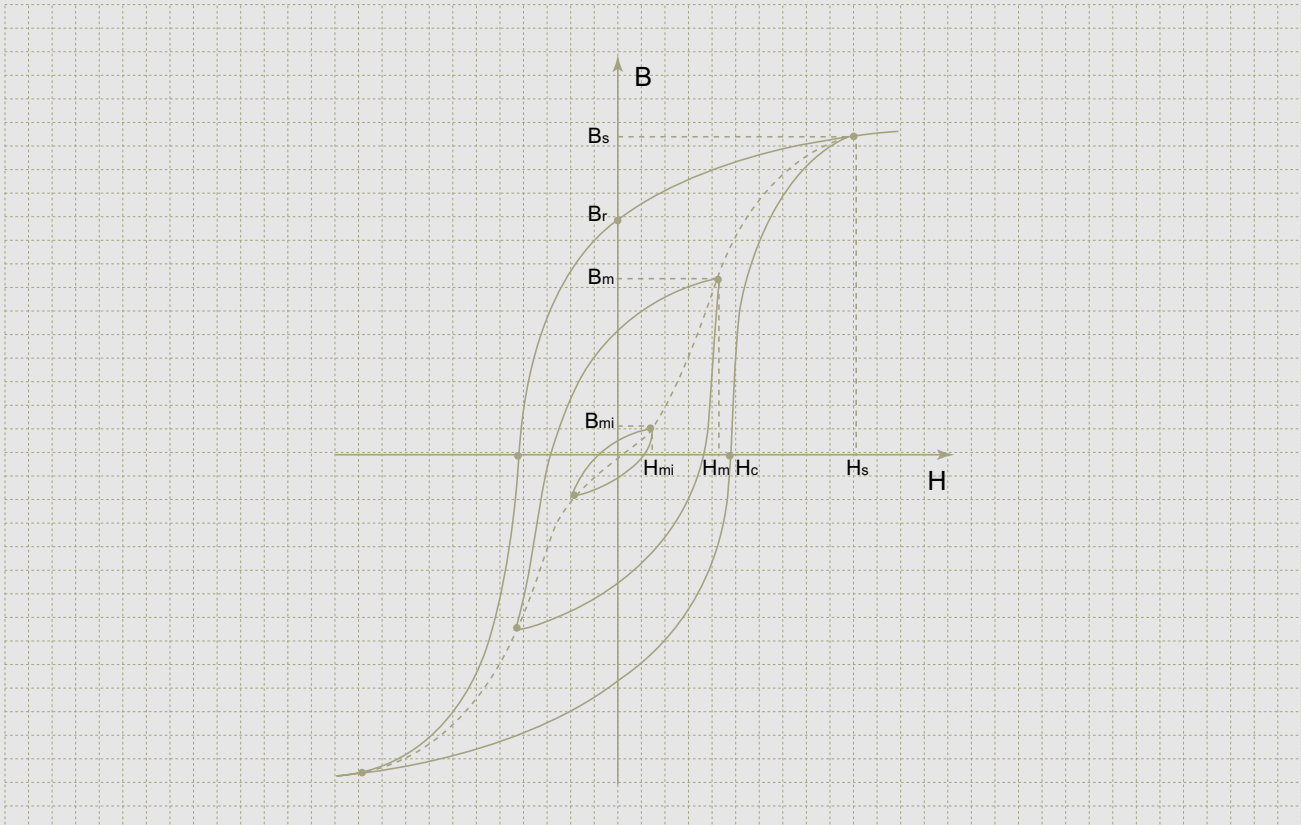
类型 Type	公称厚度 Thickness (mm)	抗拉强度L Yield strength (N/mm ²)	屈服强度L Tensile strength (N/mm ²)	延伸率L Elongation (%)	硬度 Hardness (Hv1)	弯曲次数L Number of bends	叠装系数 Lamination factor (%)
普通型 Common type	0.27	335	305	12	190	25	97
	0.30	345	310	12	190	20	98
高磁感型 High induction type	0.27	350	325	12	195	20	97
	0.30	350	310	11	195	17	98
磁畴细化 高磁感型 Domain refined high induction type	0.27	355	330	10	200	18	97

Electromagnetic Property Curves

电磁性能曲线

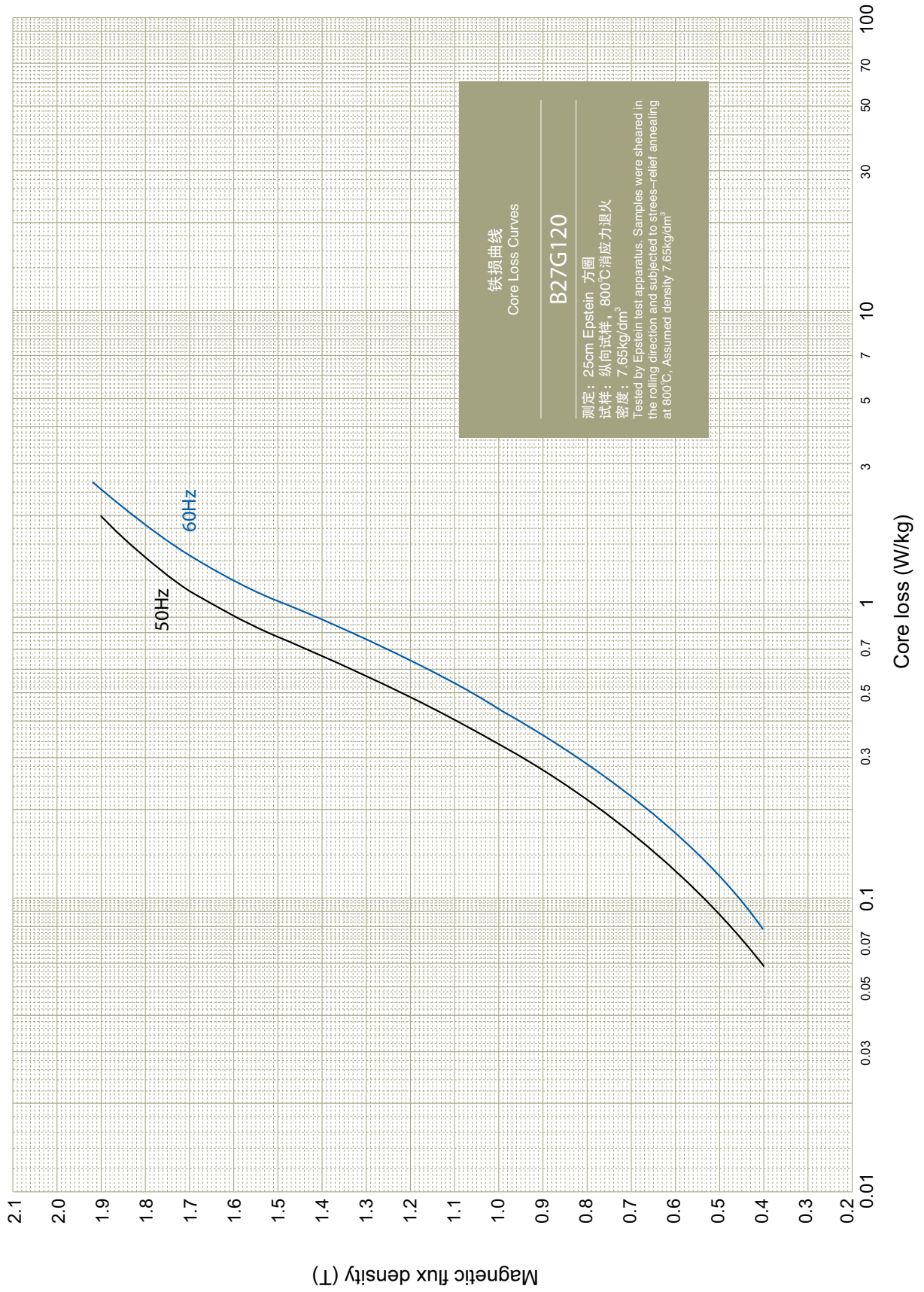
- 铁损曲线 50Hz/60Hz
- 直流磁化曲线和直流磁导率曲线
- 直流磁滞回线 1.0T/1.5T/1.7T
- 交流激磁功率曲线 50Hz/60Hz
- 交流激磁曲线 50Hz
- 高频铁损曲线 50/100/200/400Hz

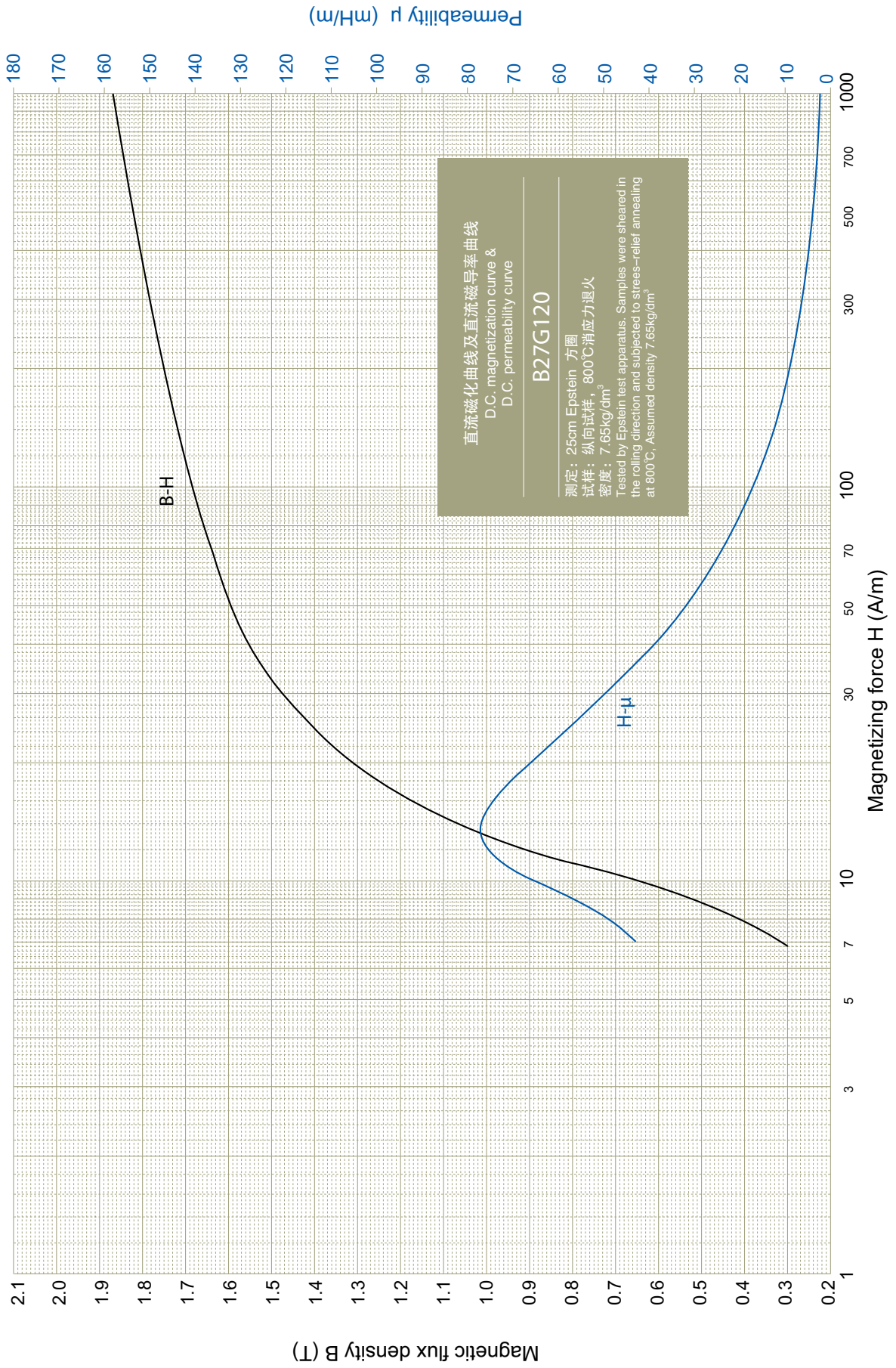
- | | | | | | |
|--------|---------|---------|---------|---------|---------|
| □ 普通型 | B27G120 | B27G130 | B30G120 | B30G130 | B30G140 |
| □ 高磁感型 | B27P100 | B27P110 | B30P105 | B30P110 | B30P120 |



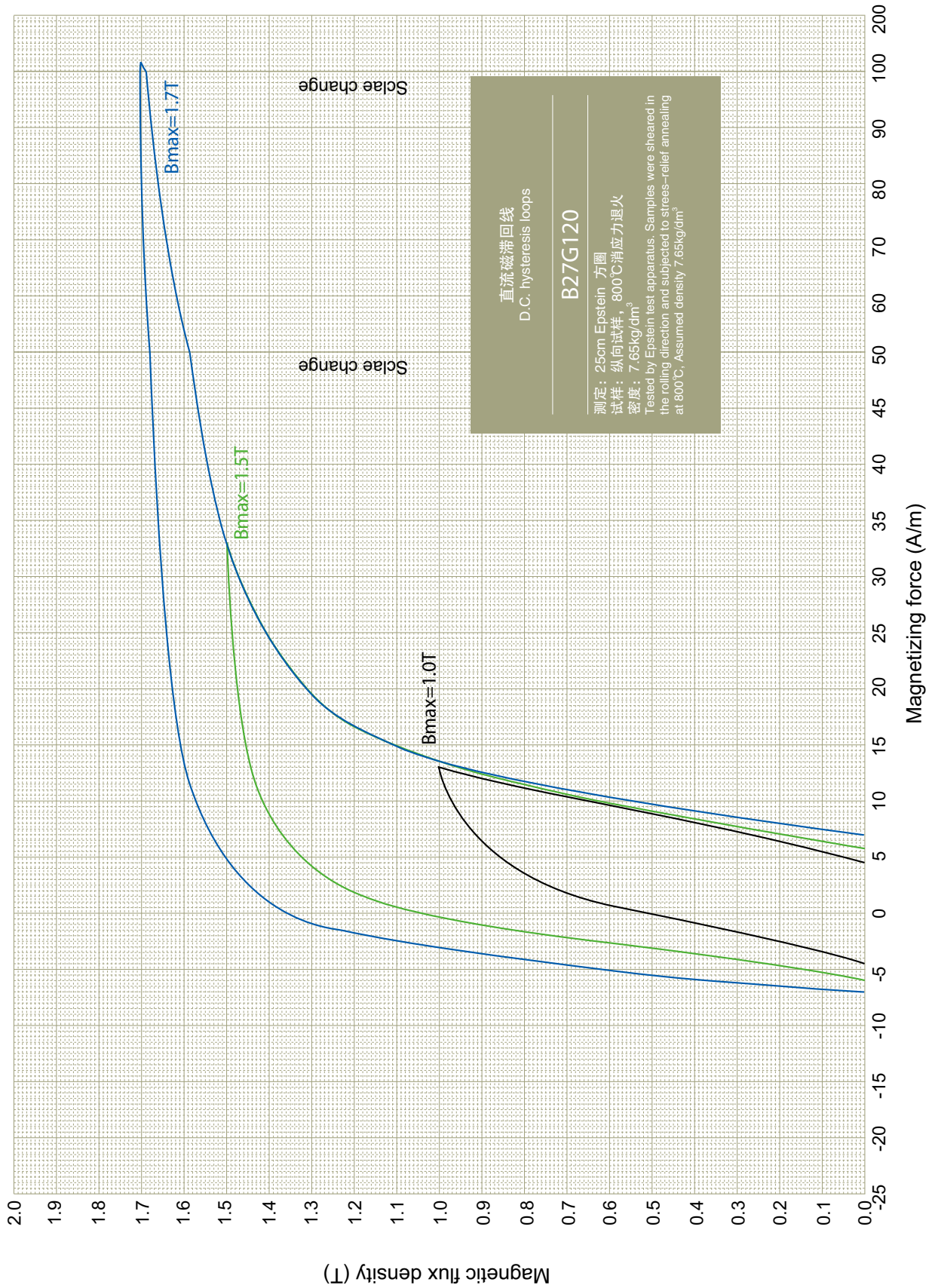
- Core Loss Curves 50Hz/60Hz
- D.C. Magnetization Curves/D.C. Permeability Curves
- D.C. Hysteresis Loops 1.0T/1.5T/1.7T
- A.C. Exciting Power Curves 50Hz/60Hz
- A.C. Exciting Curves 50Hz
- Core Loss Curves at High Frequency 50/100/200/400Hz

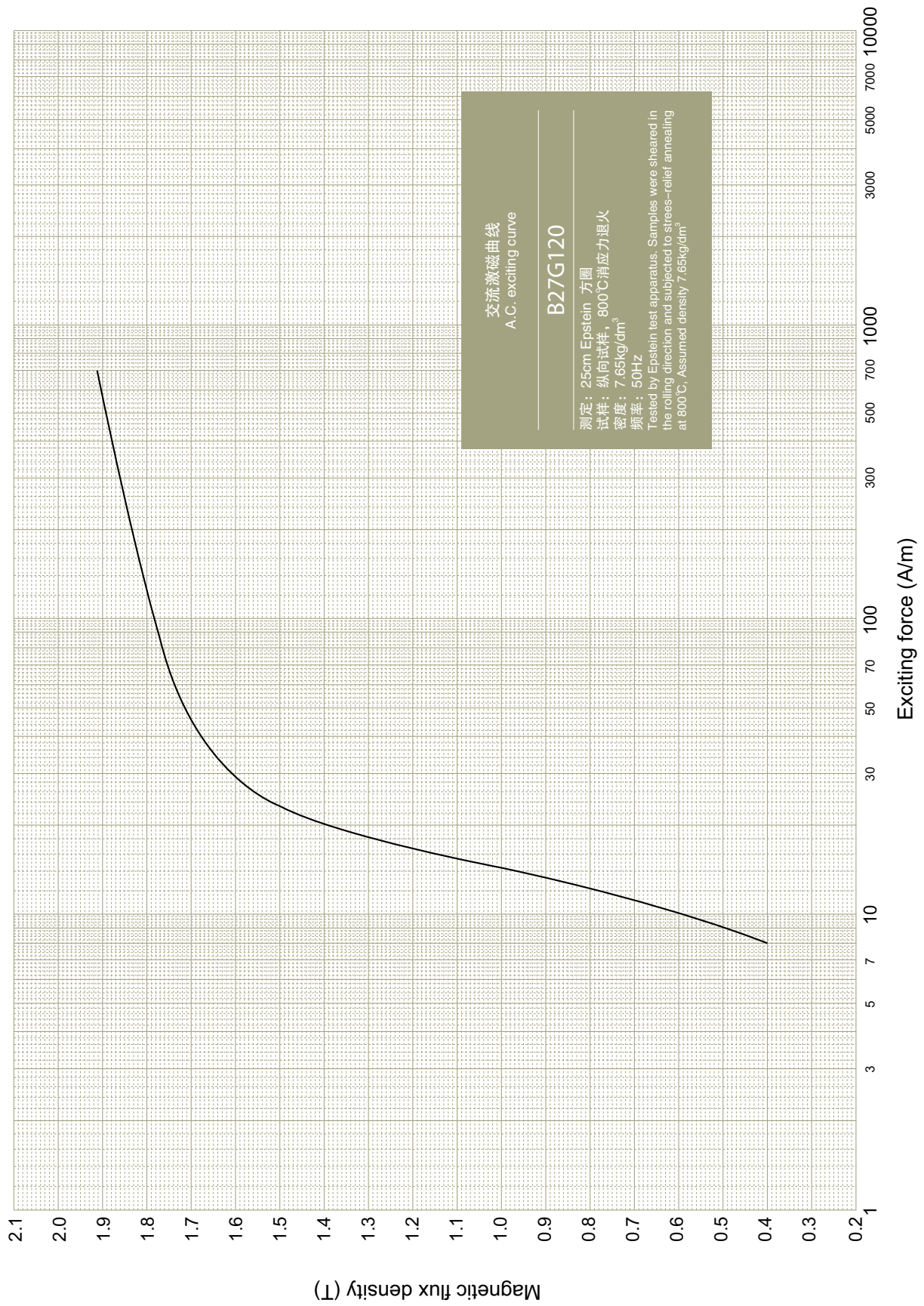
- | | | | | | |
|--|---------|---------|---------|---------|---------|
| <input type="checkbox"/> Common type | B27G120 | B27G130 | B30G120 | B30G130 | B30G140 |
| <input type="checkbox"/> High induction type | B27P100 | B27P110 | B30P105 | B30P110 | B30P120 |

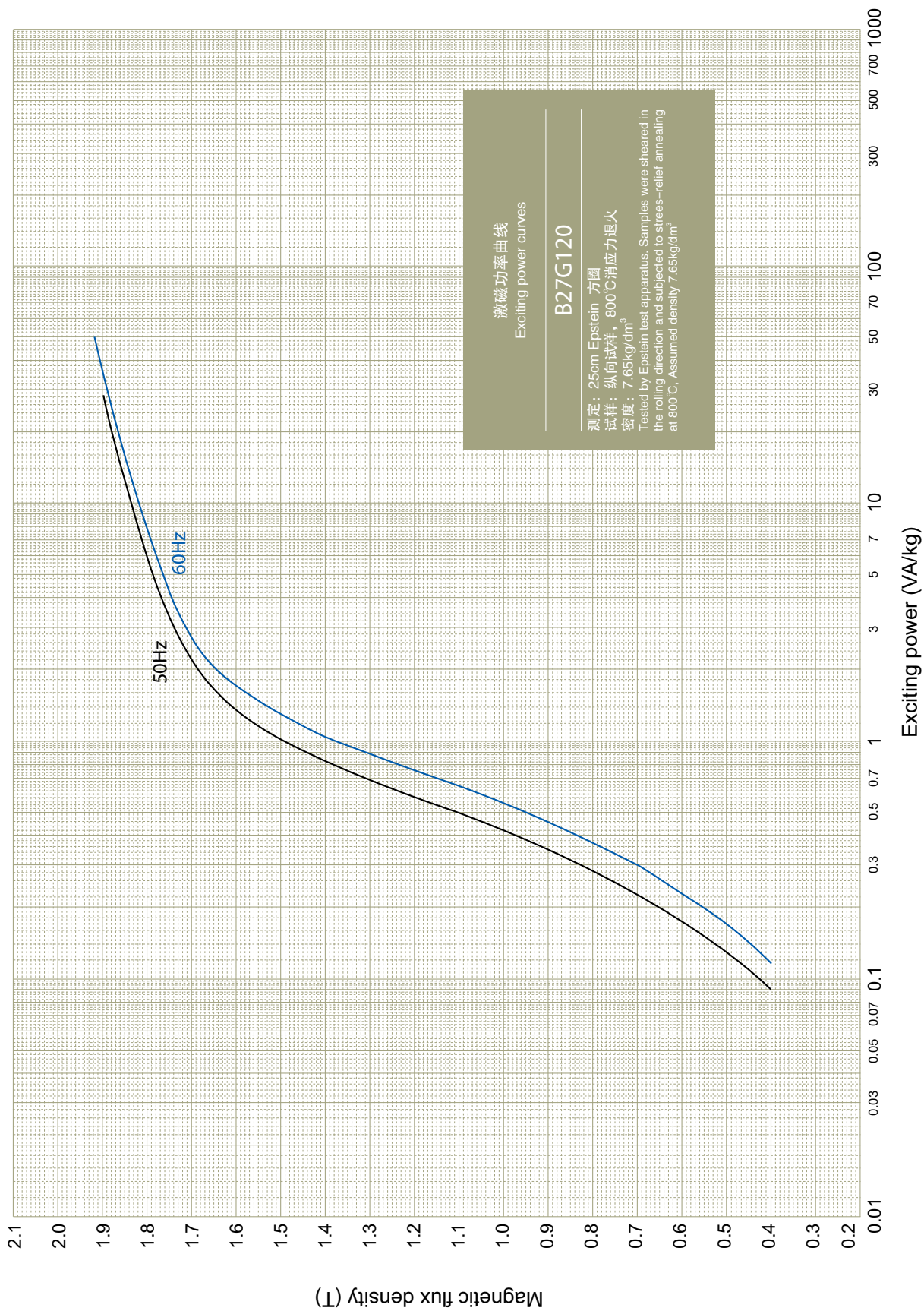


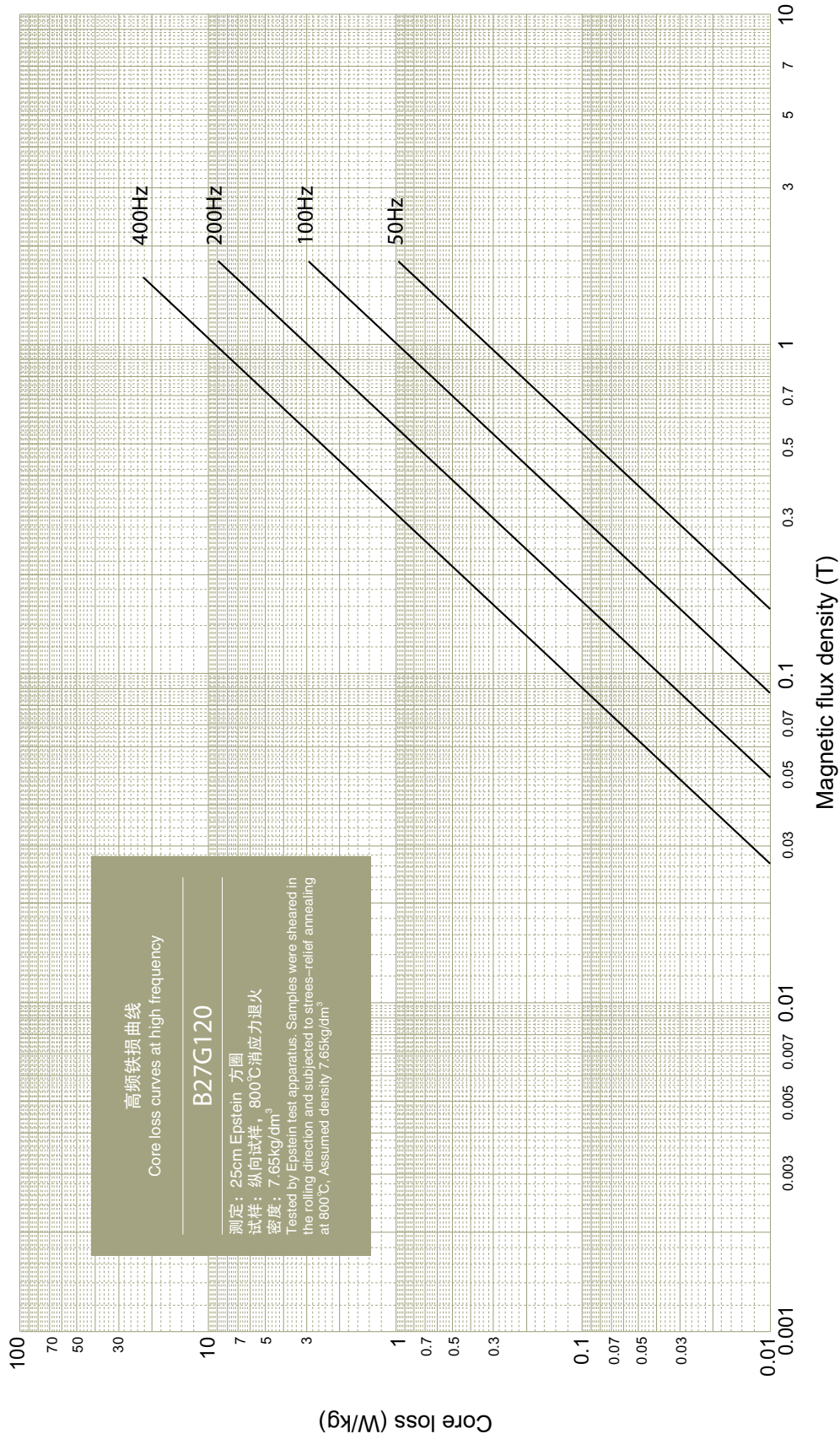


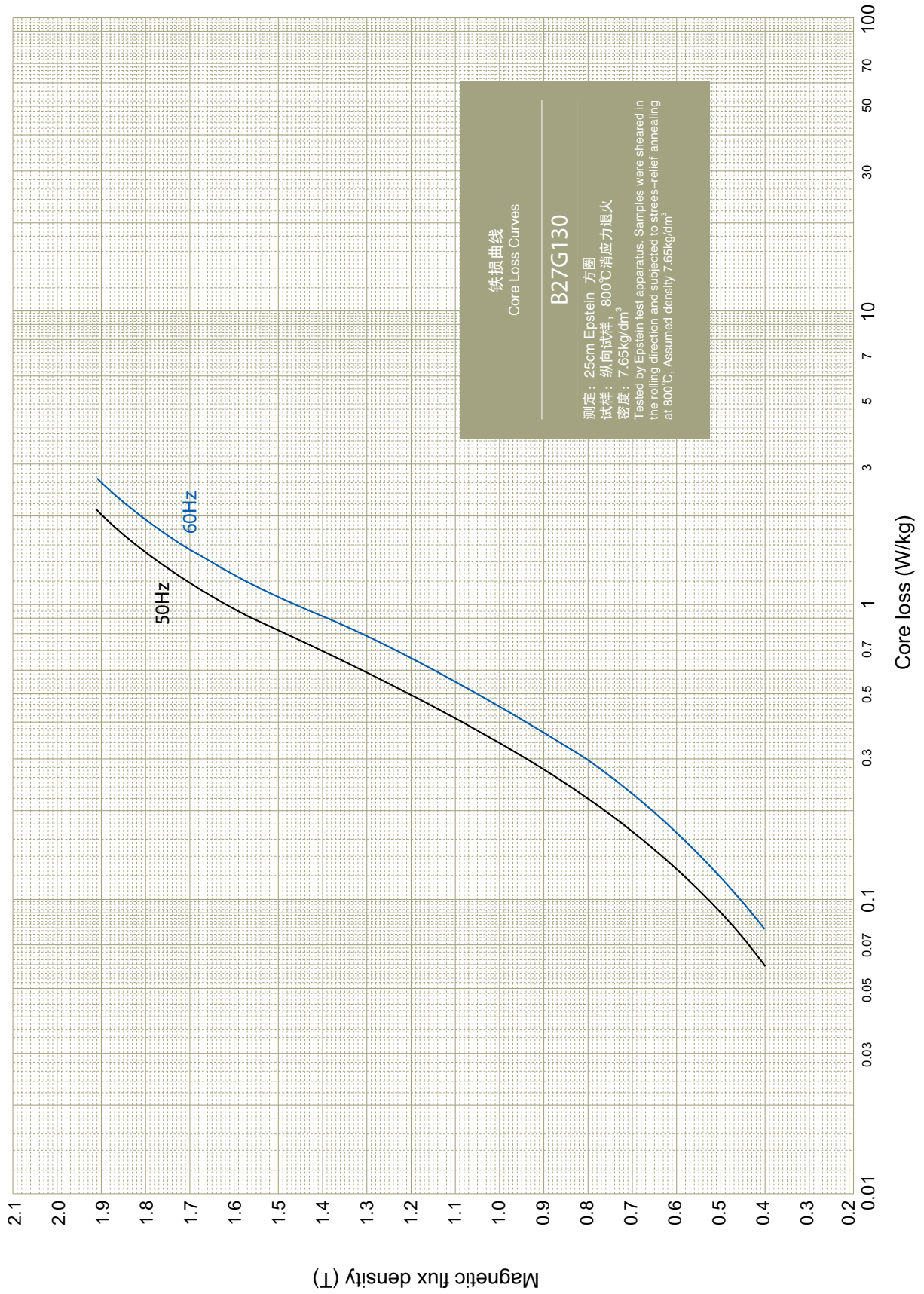
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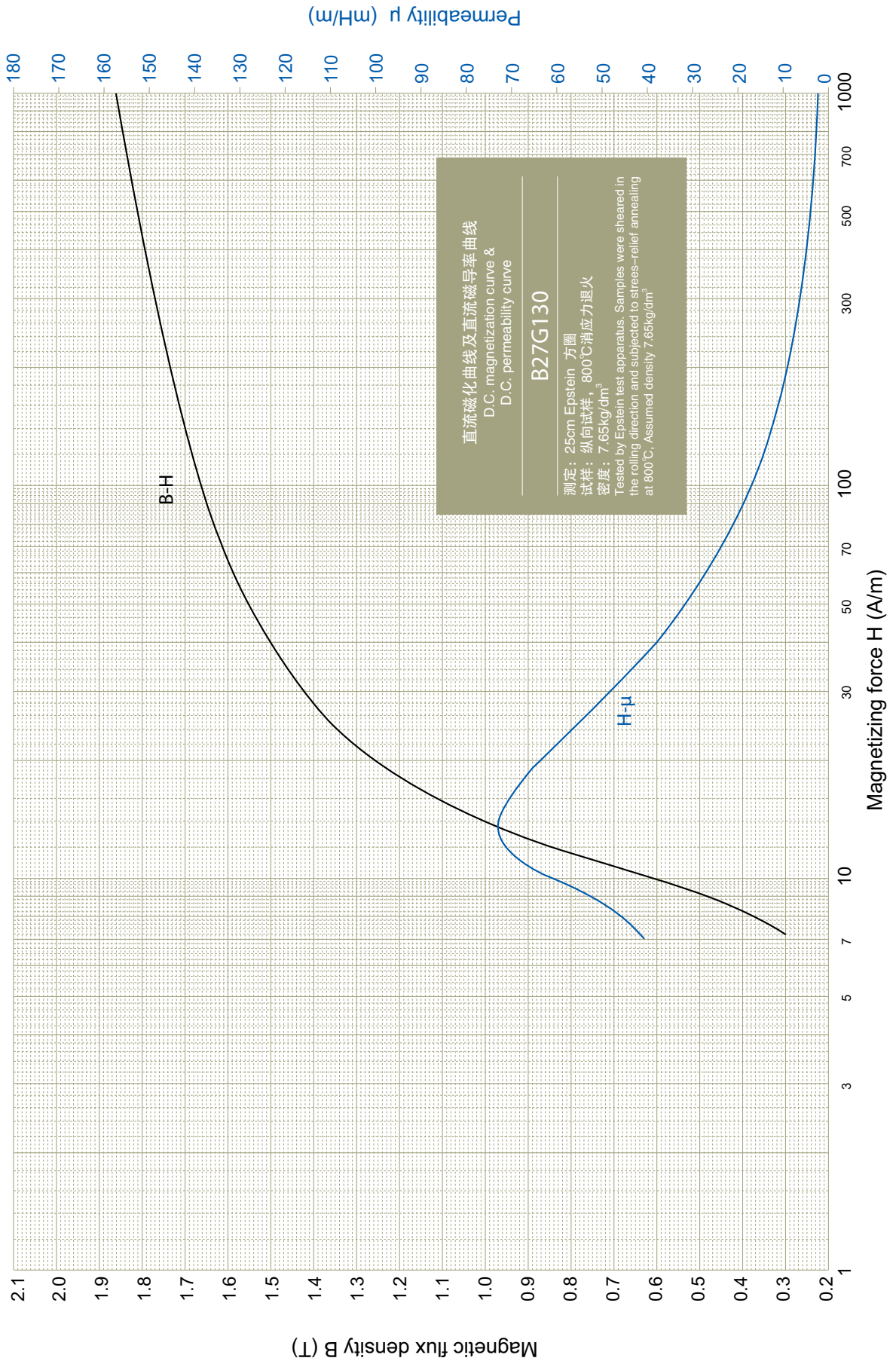




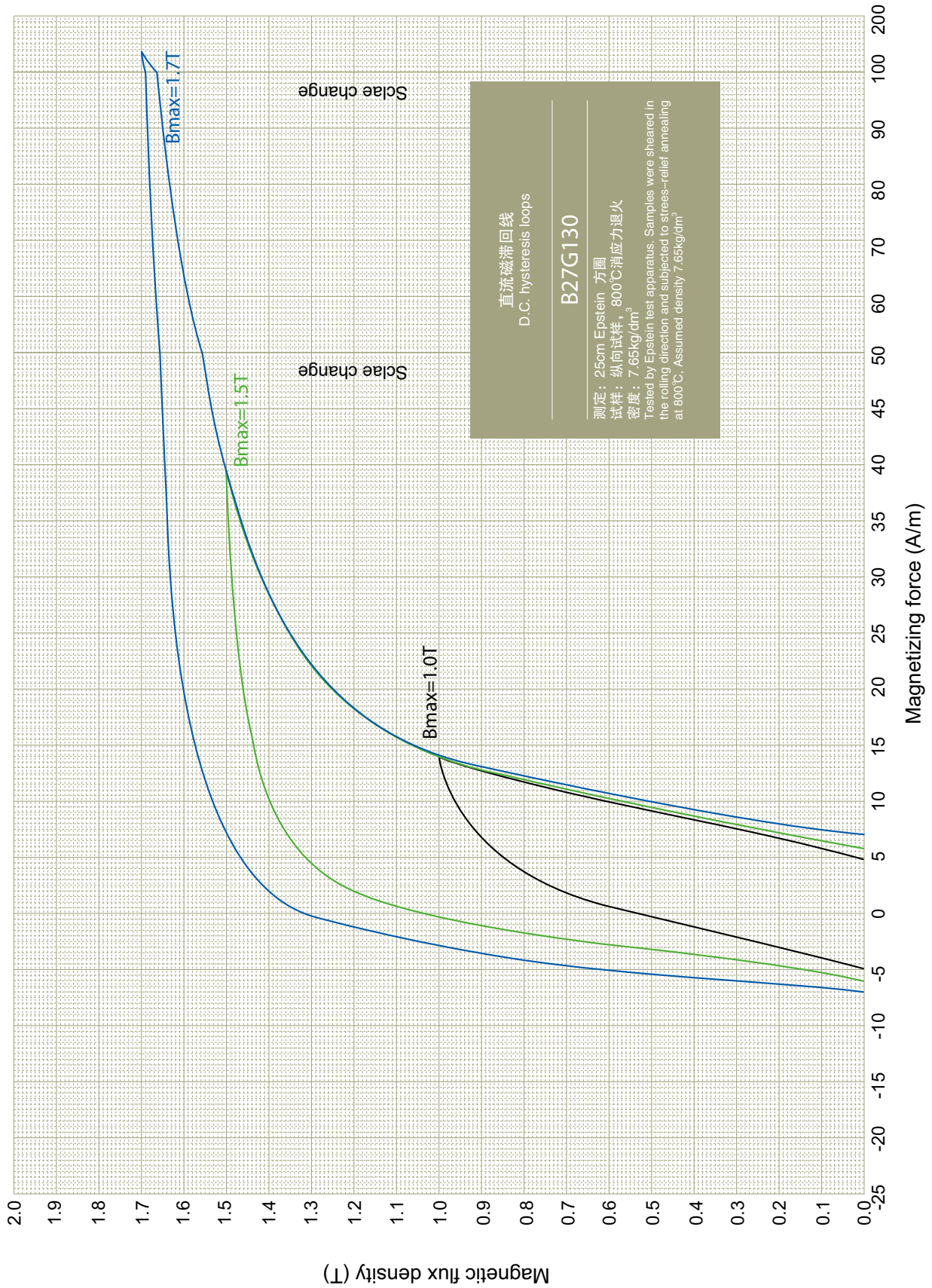


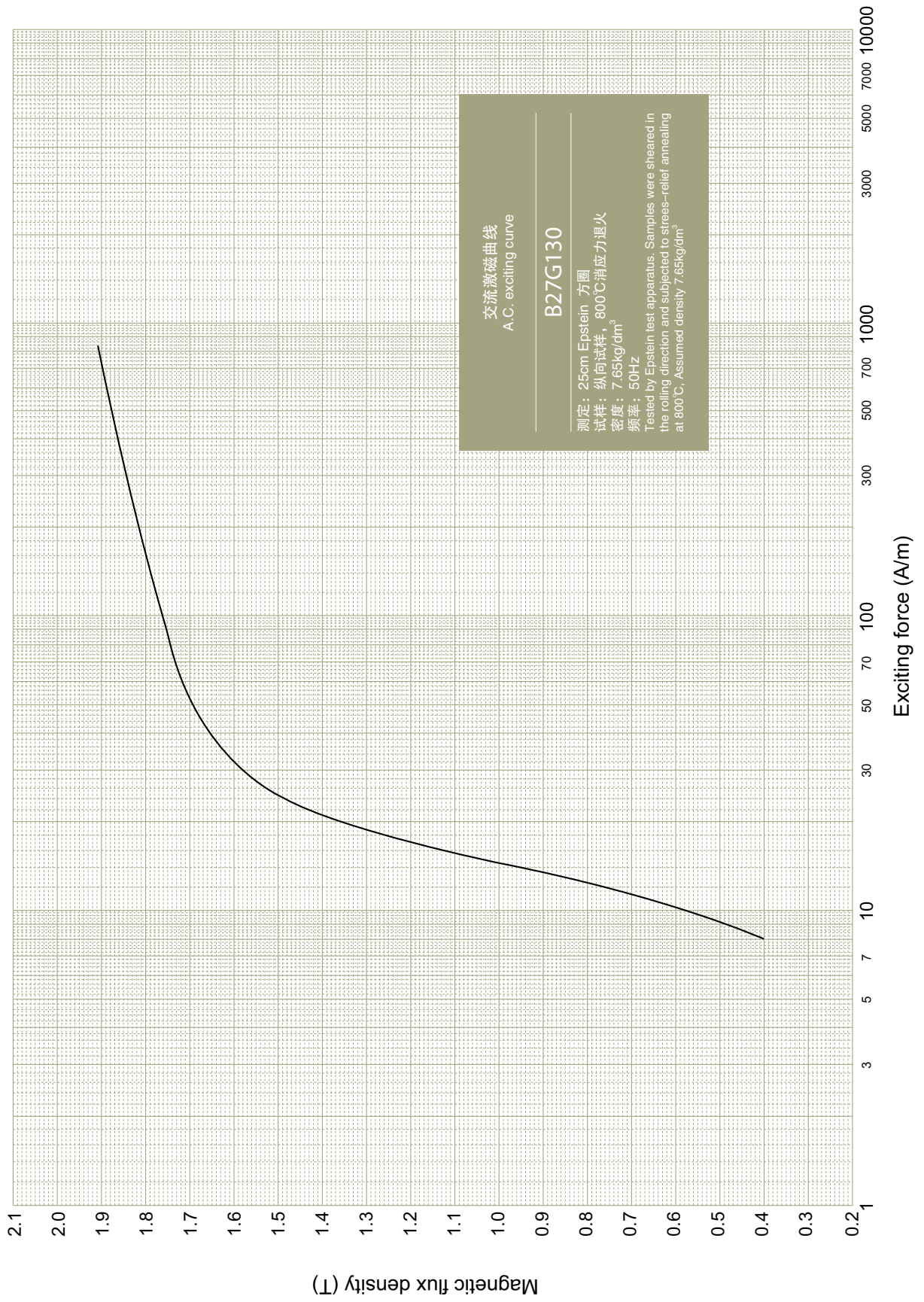




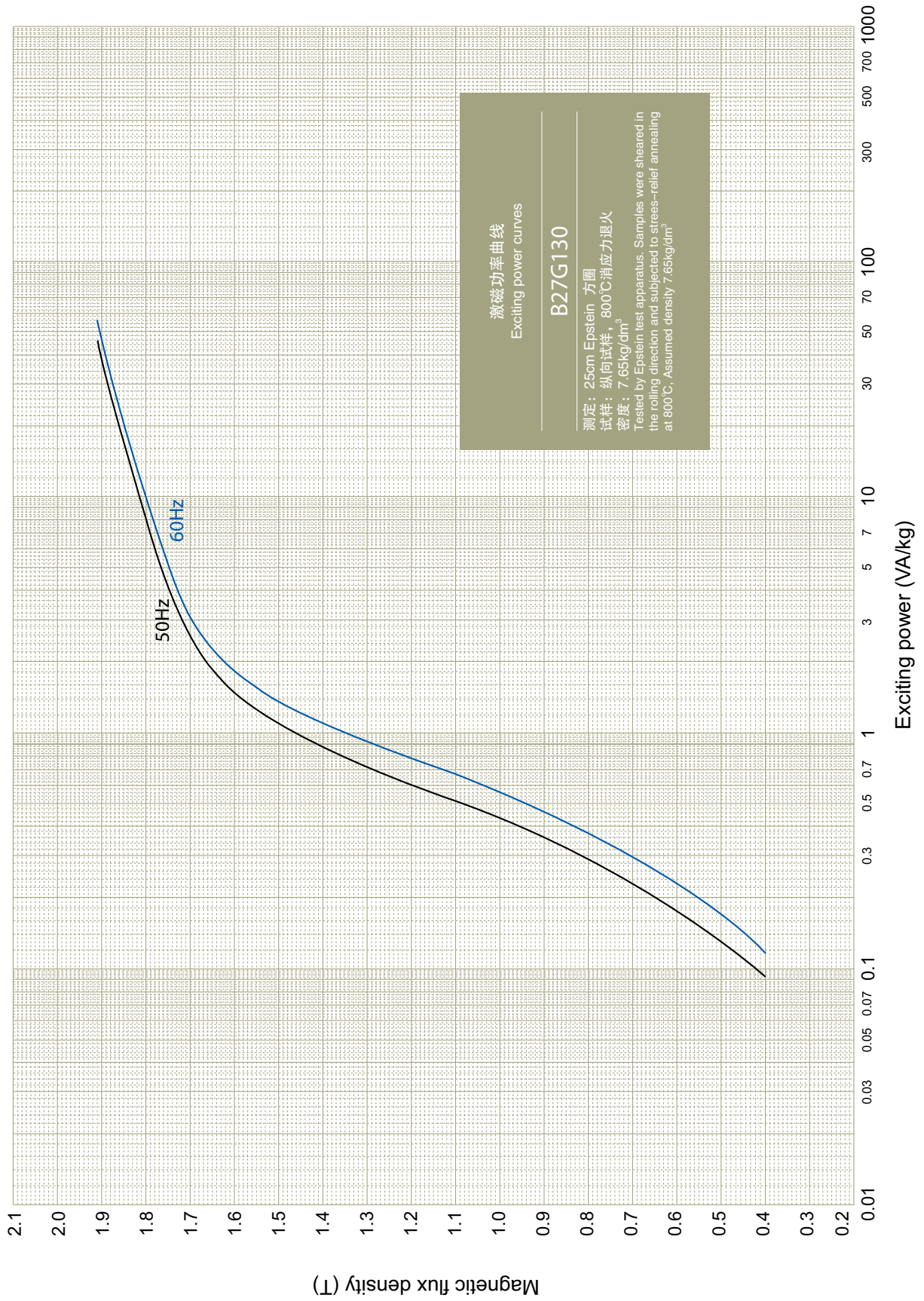


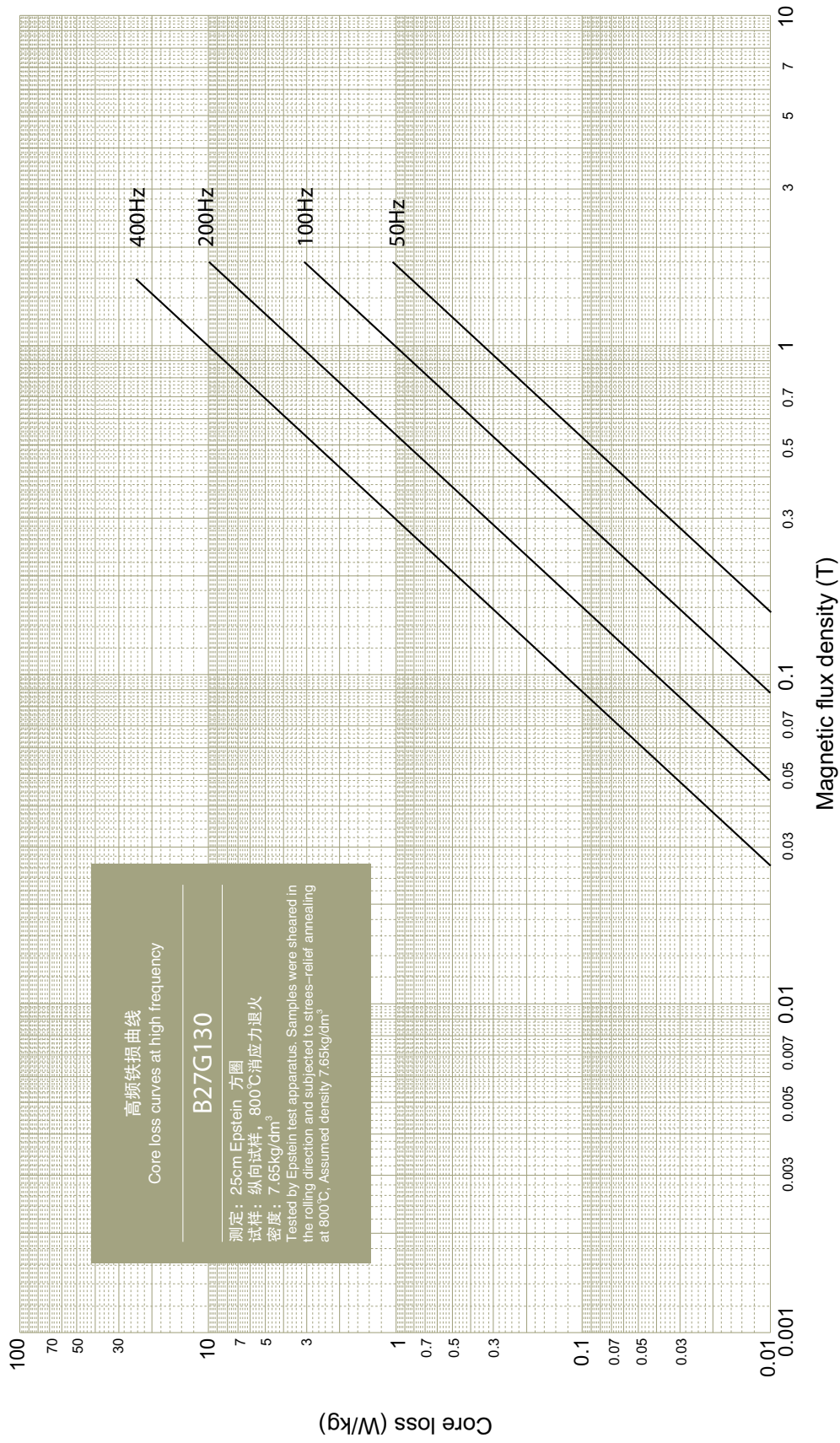
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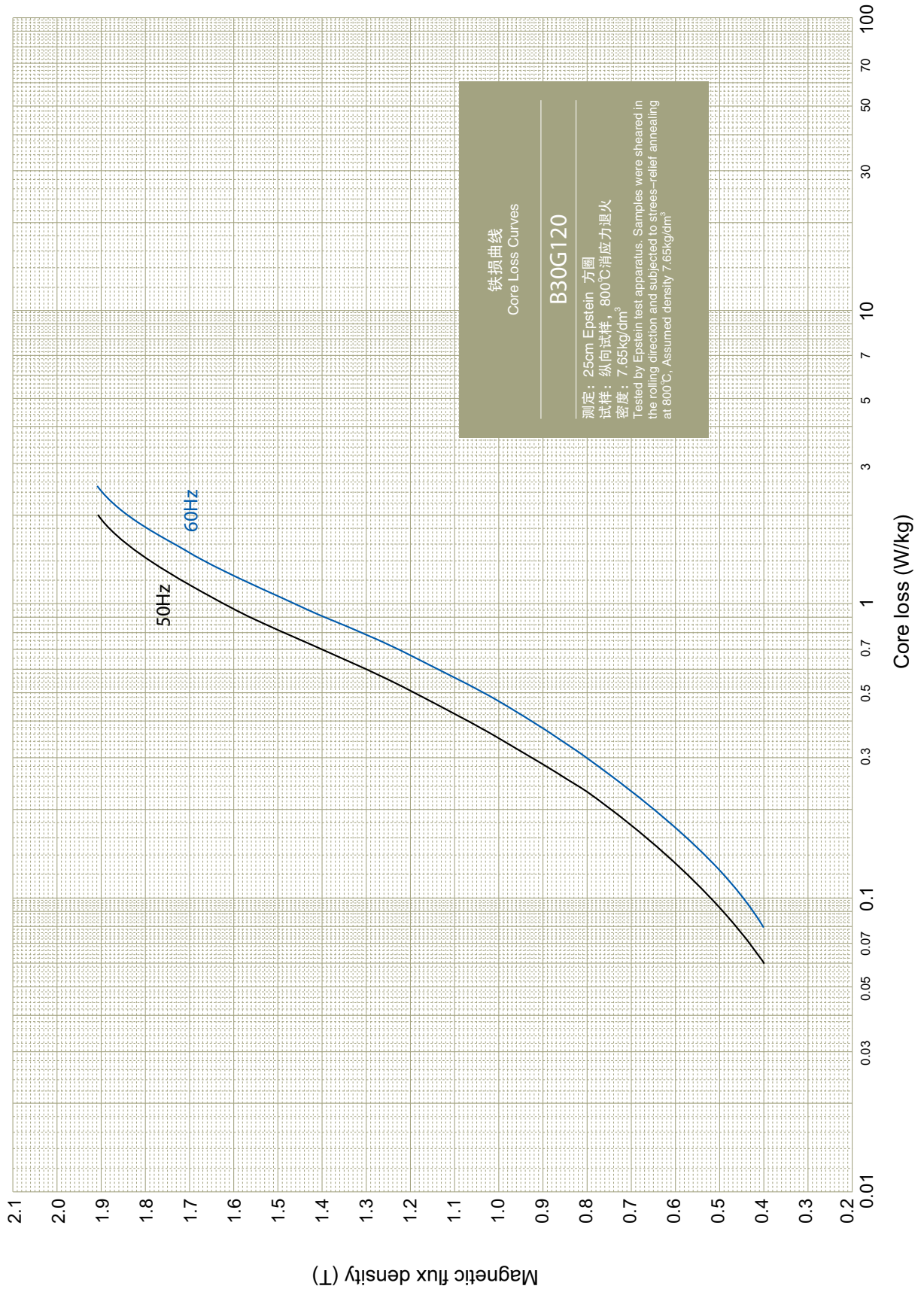


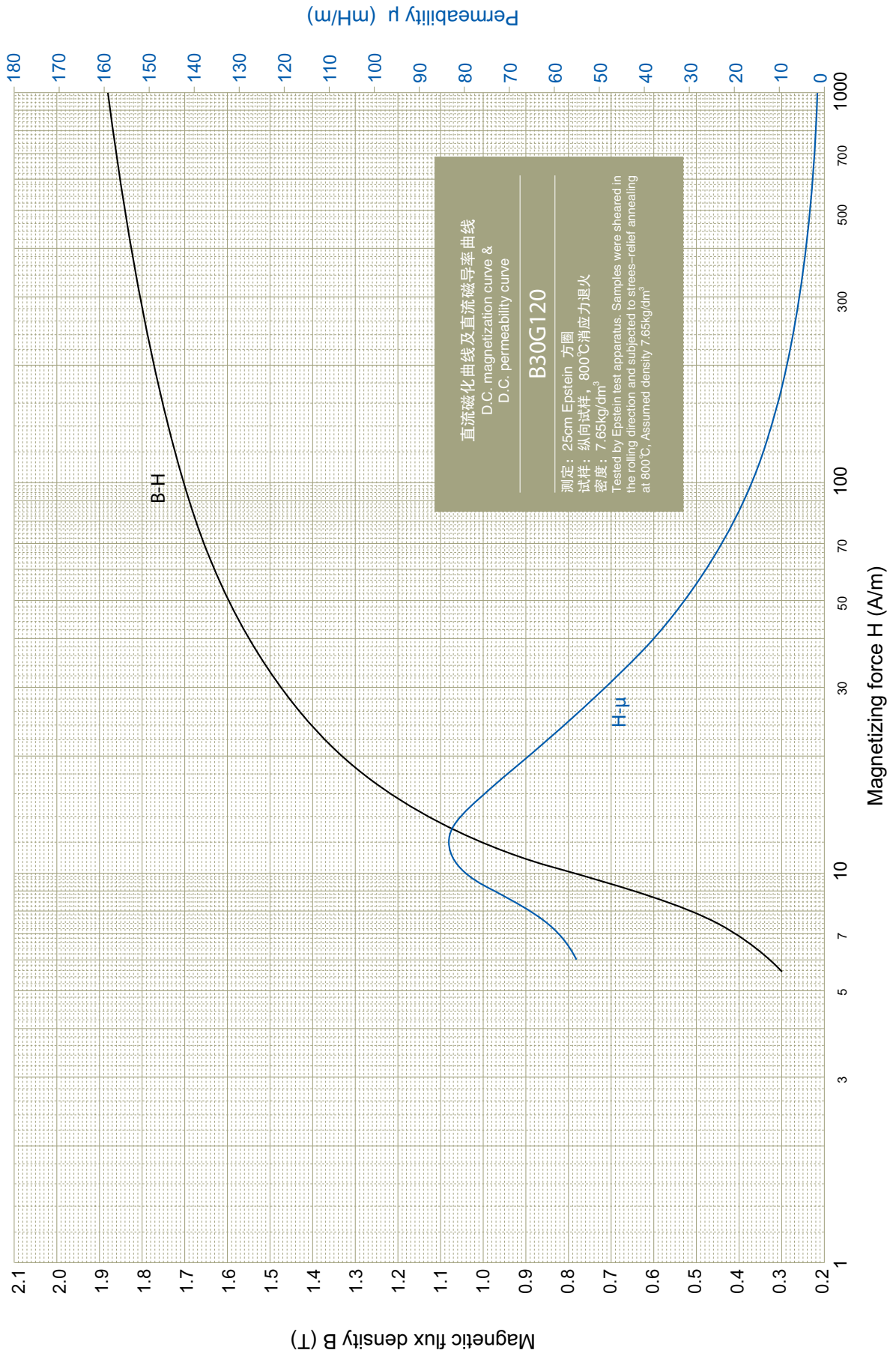


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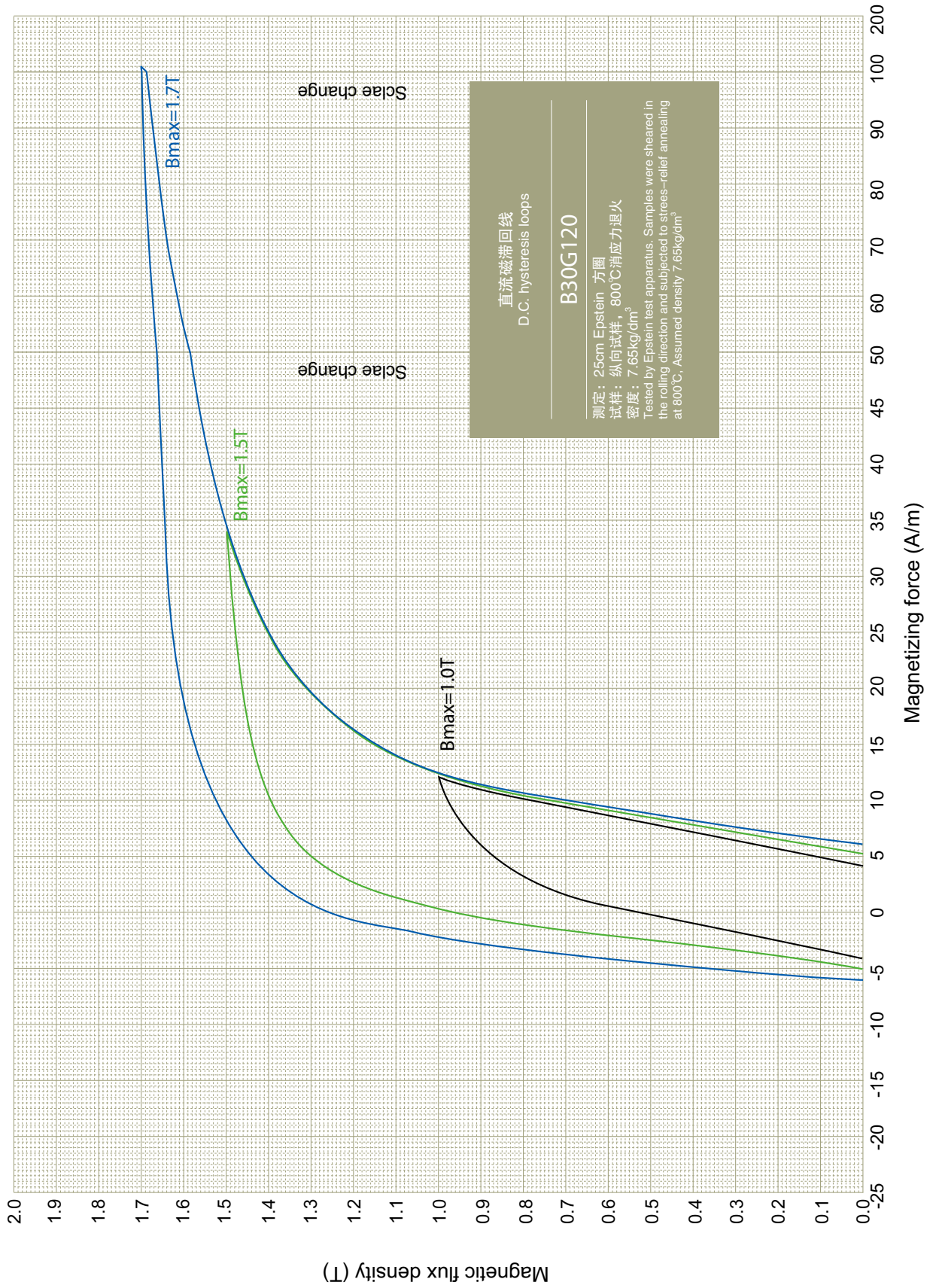


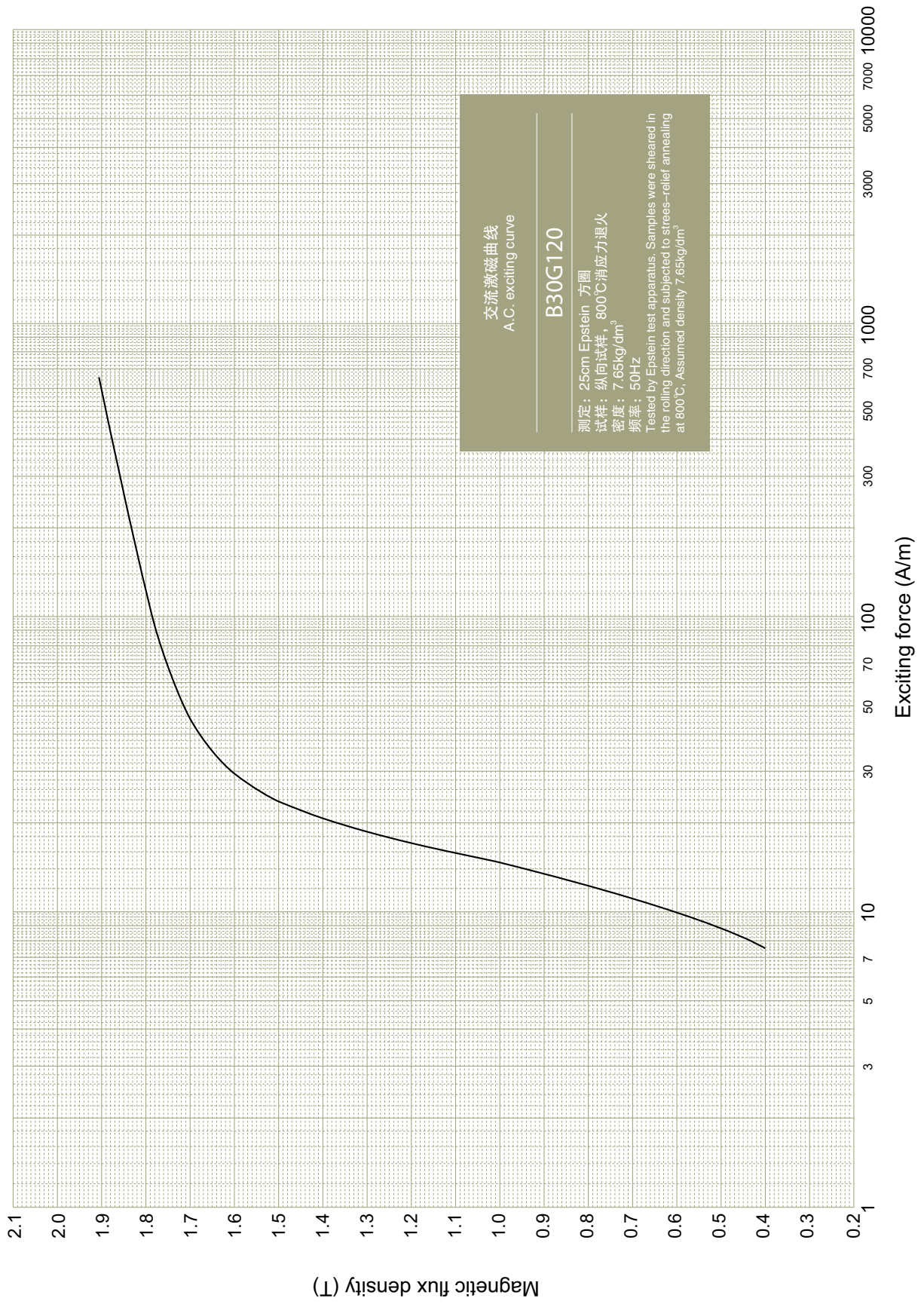




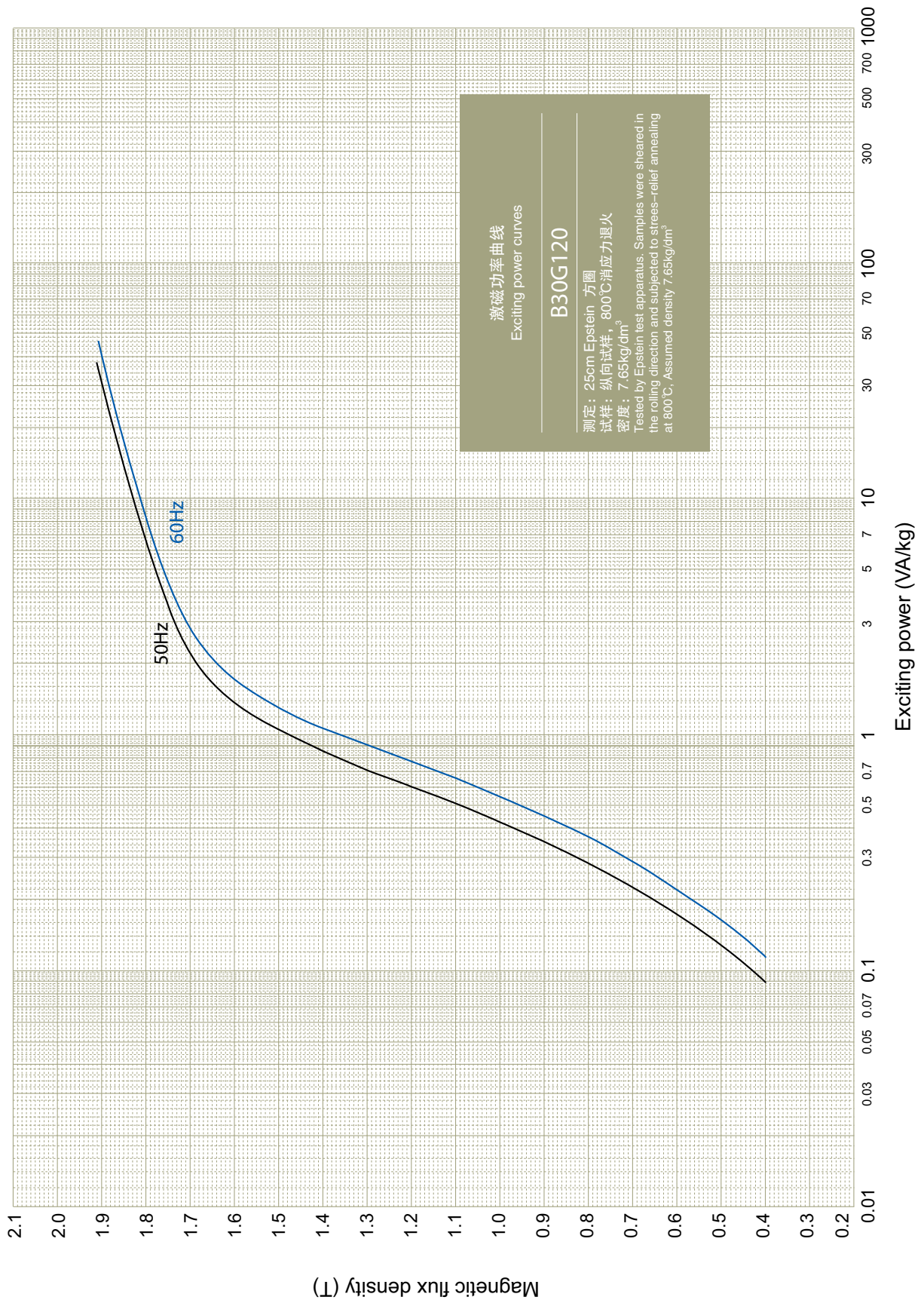


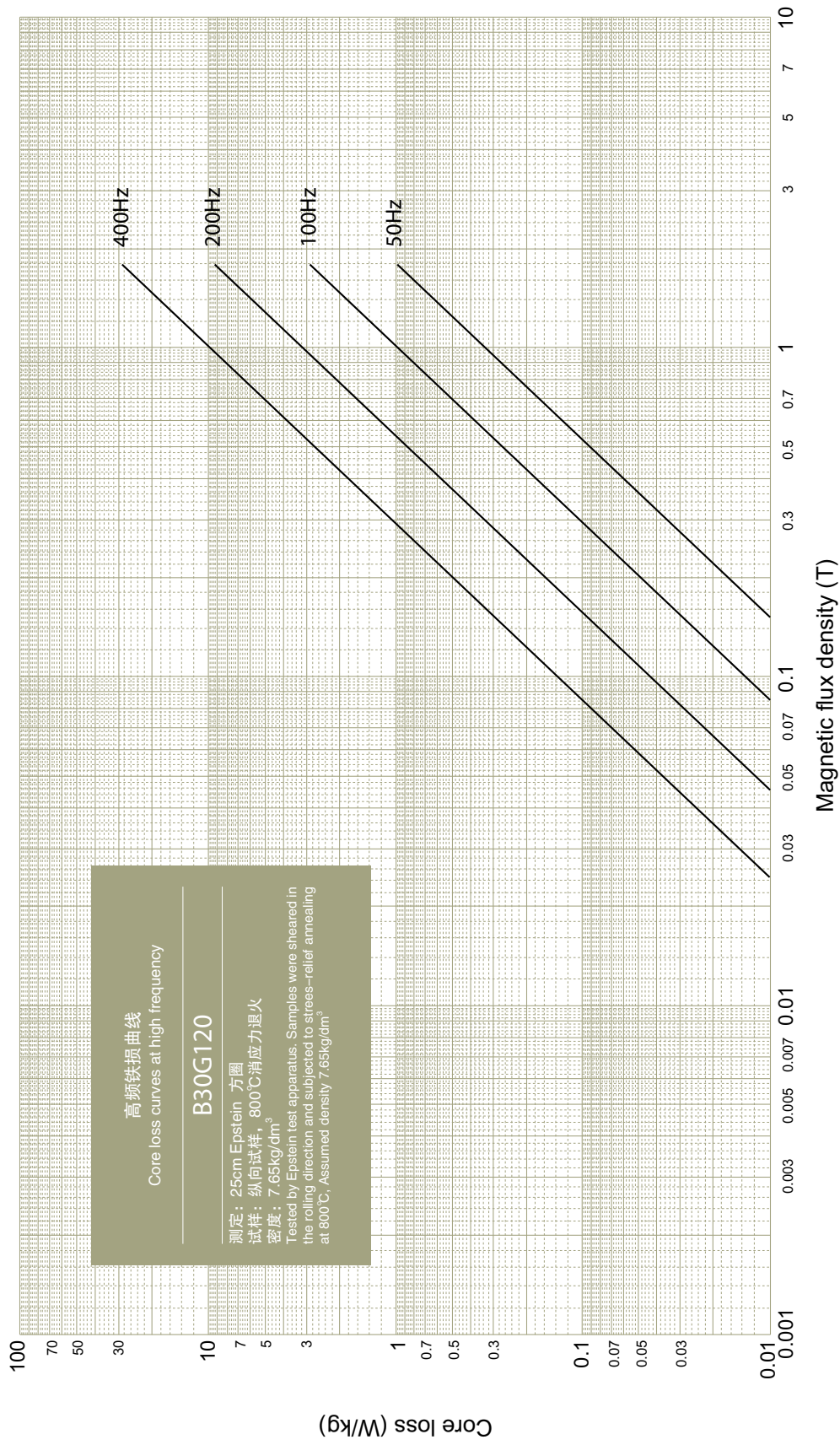
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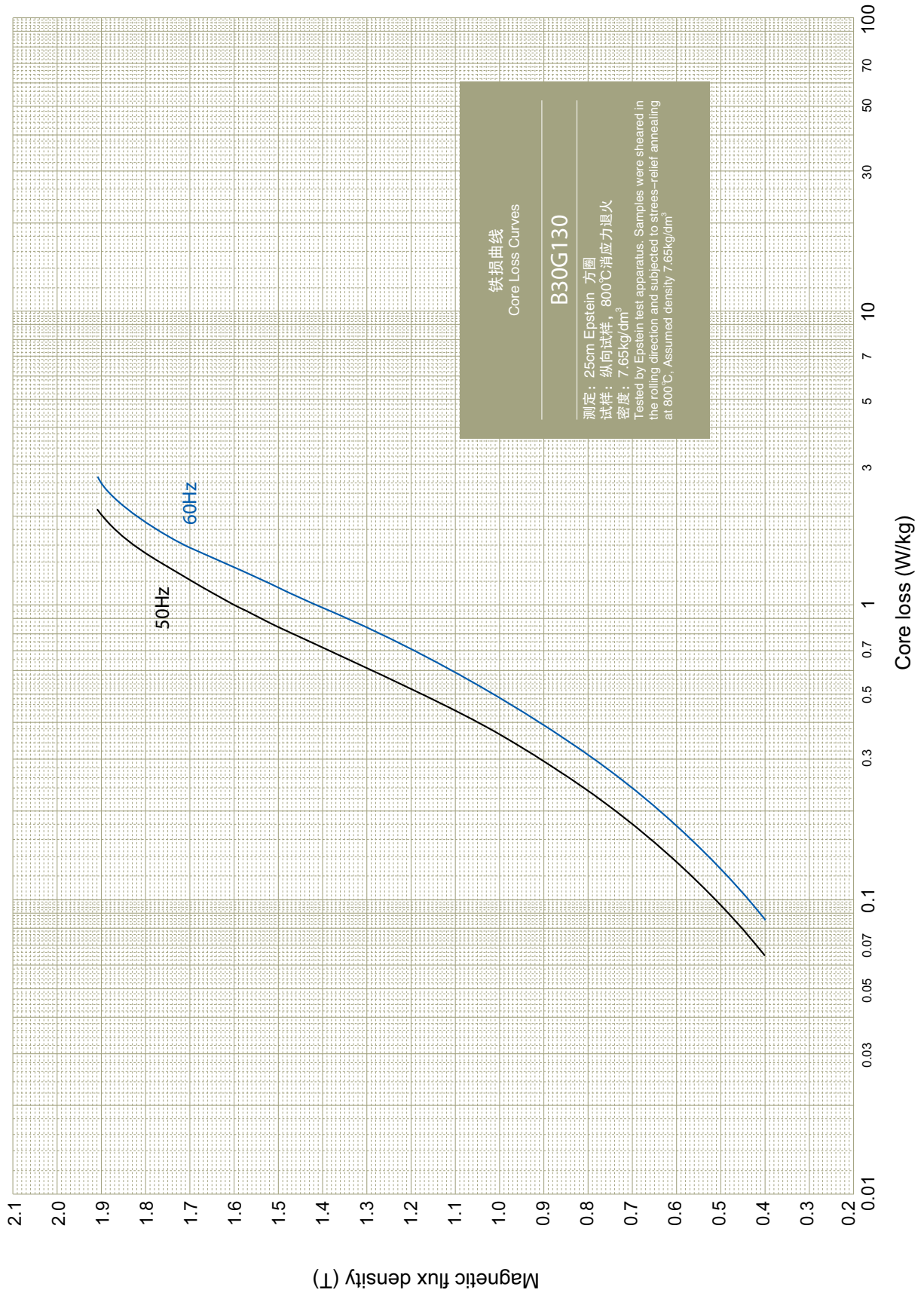


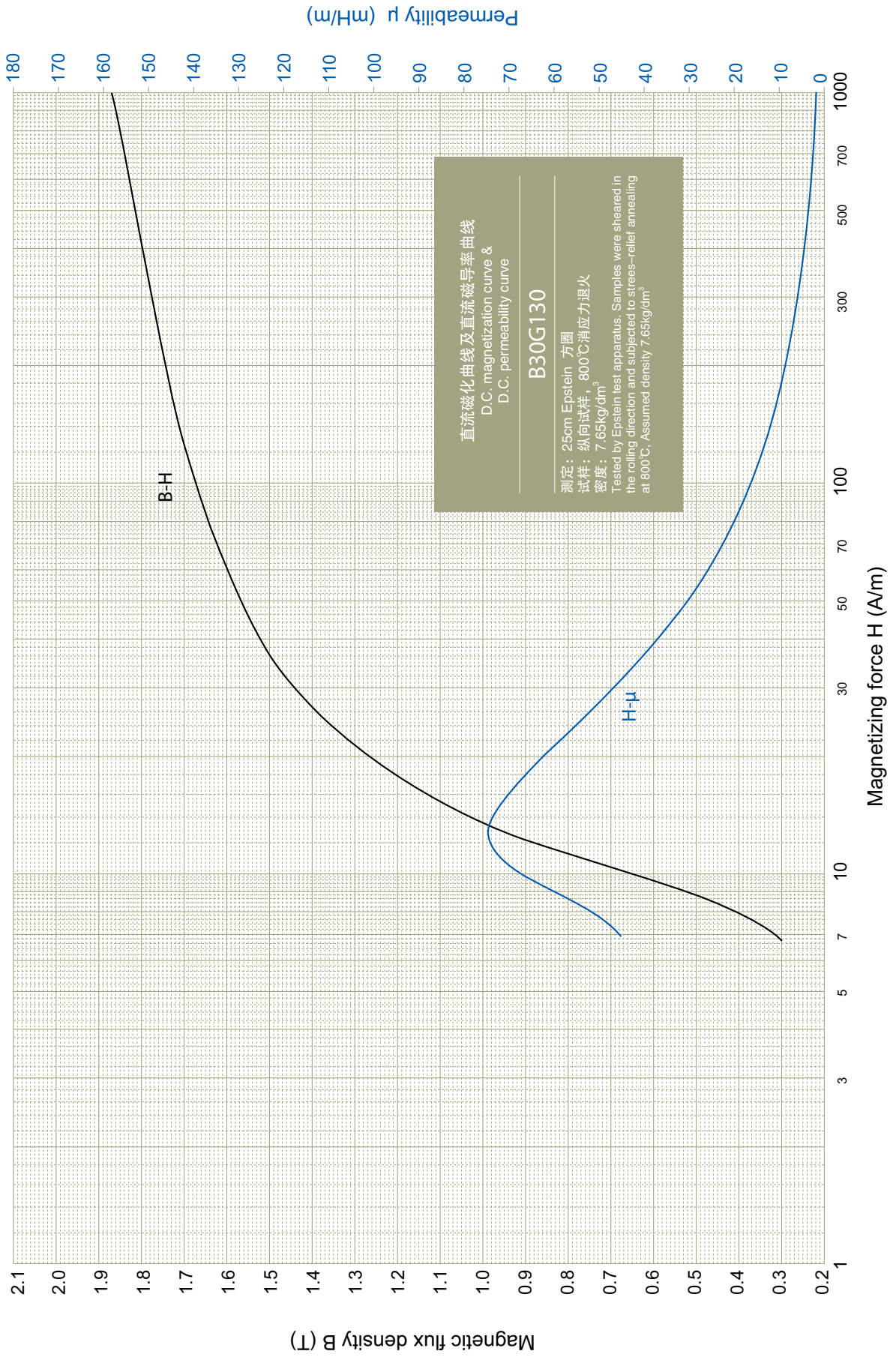
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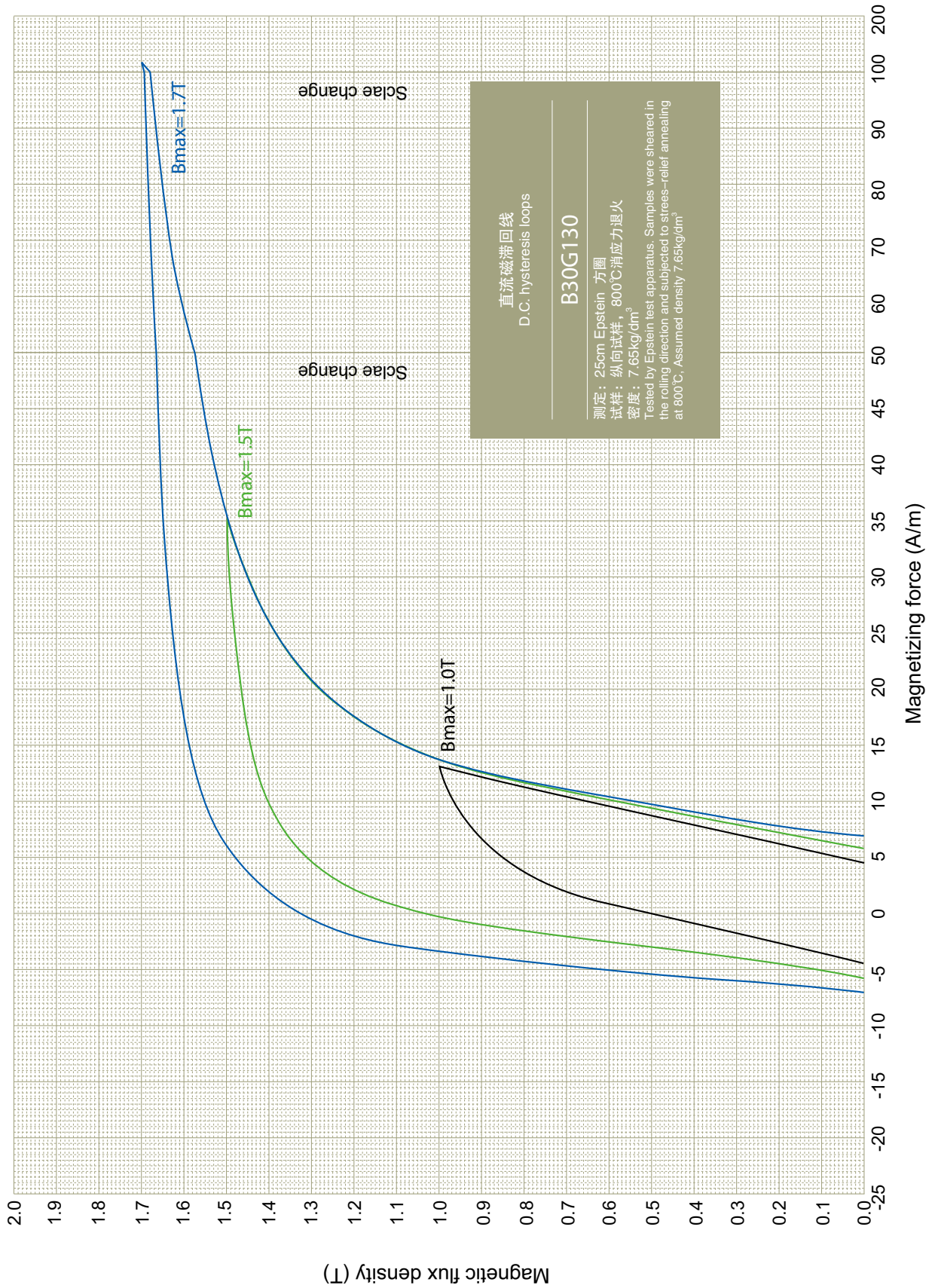
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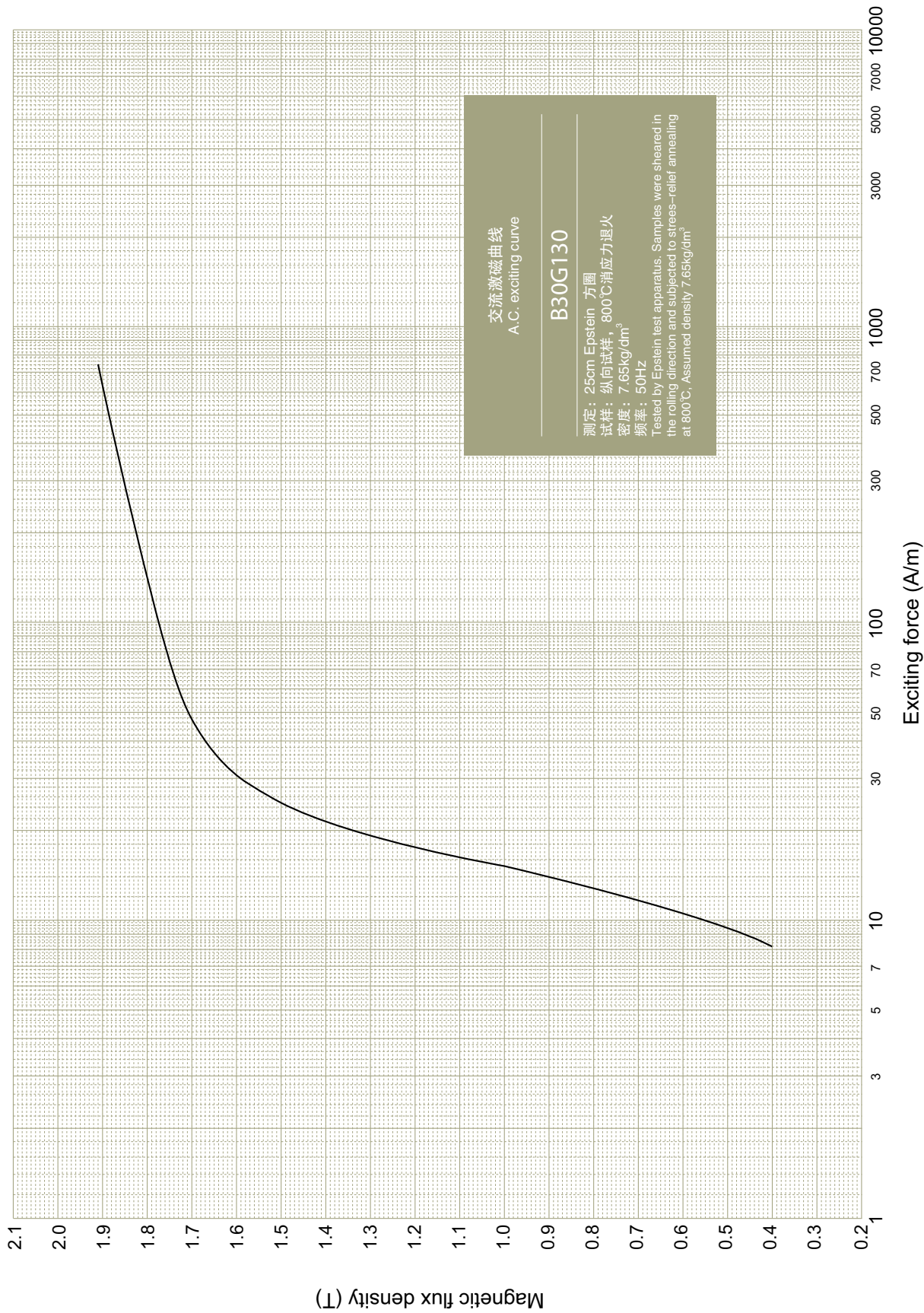




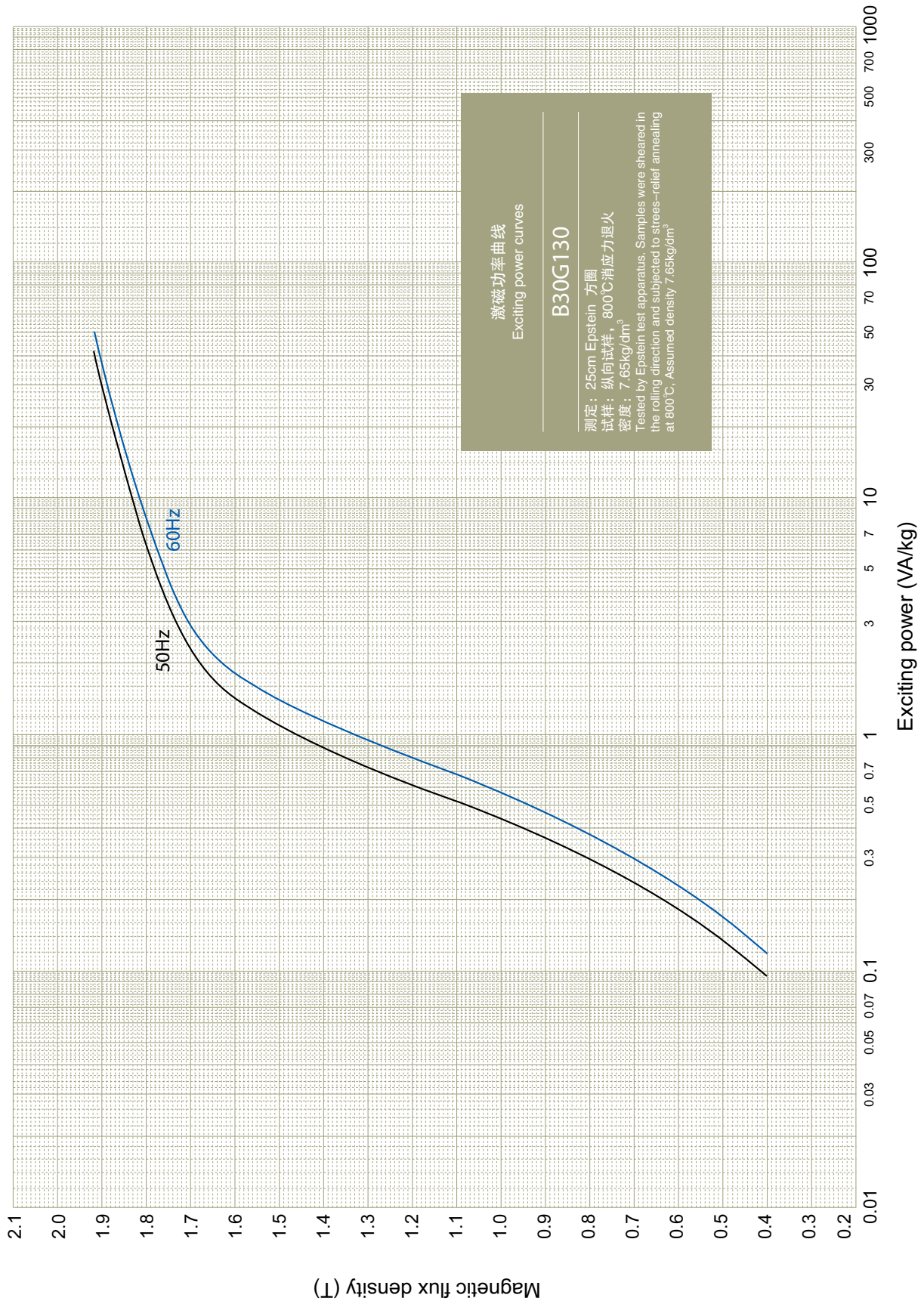
直流磁化曲线及直流磁导率曲线
 D.C. magnetization curve &
 D.C. permeability curve
B30G130
 测定: 25cm Epstein 方圈
 试样: 纵向试样, 800°C消应力退火
 密度: 7.66kg/dm³
 Tested by Epstein test apparatus. Samples were sheared in
 the rolling direction and subjected to stress-relief annealing
 at 800°C. Assumed density 7.66kg/dm³

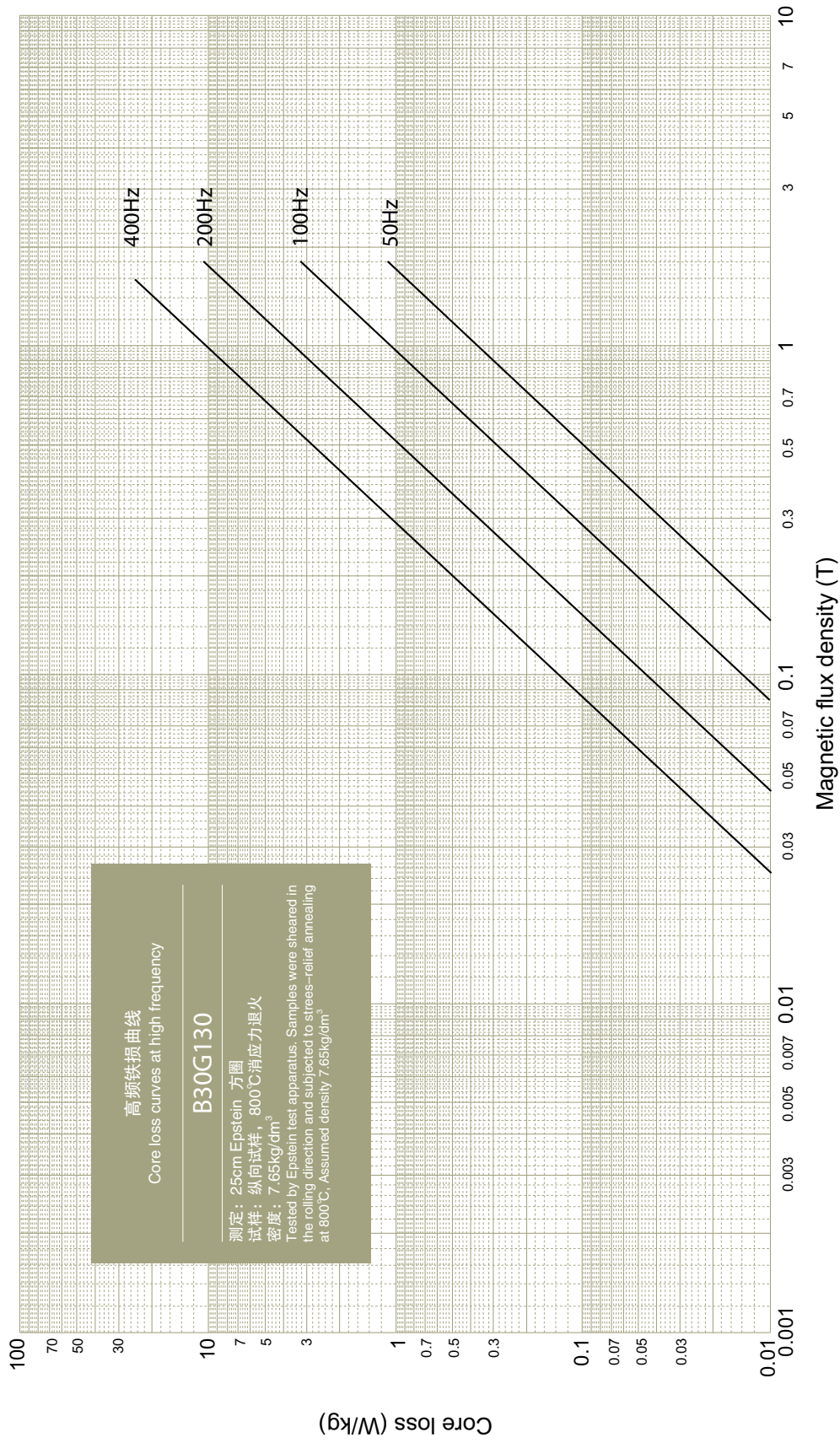
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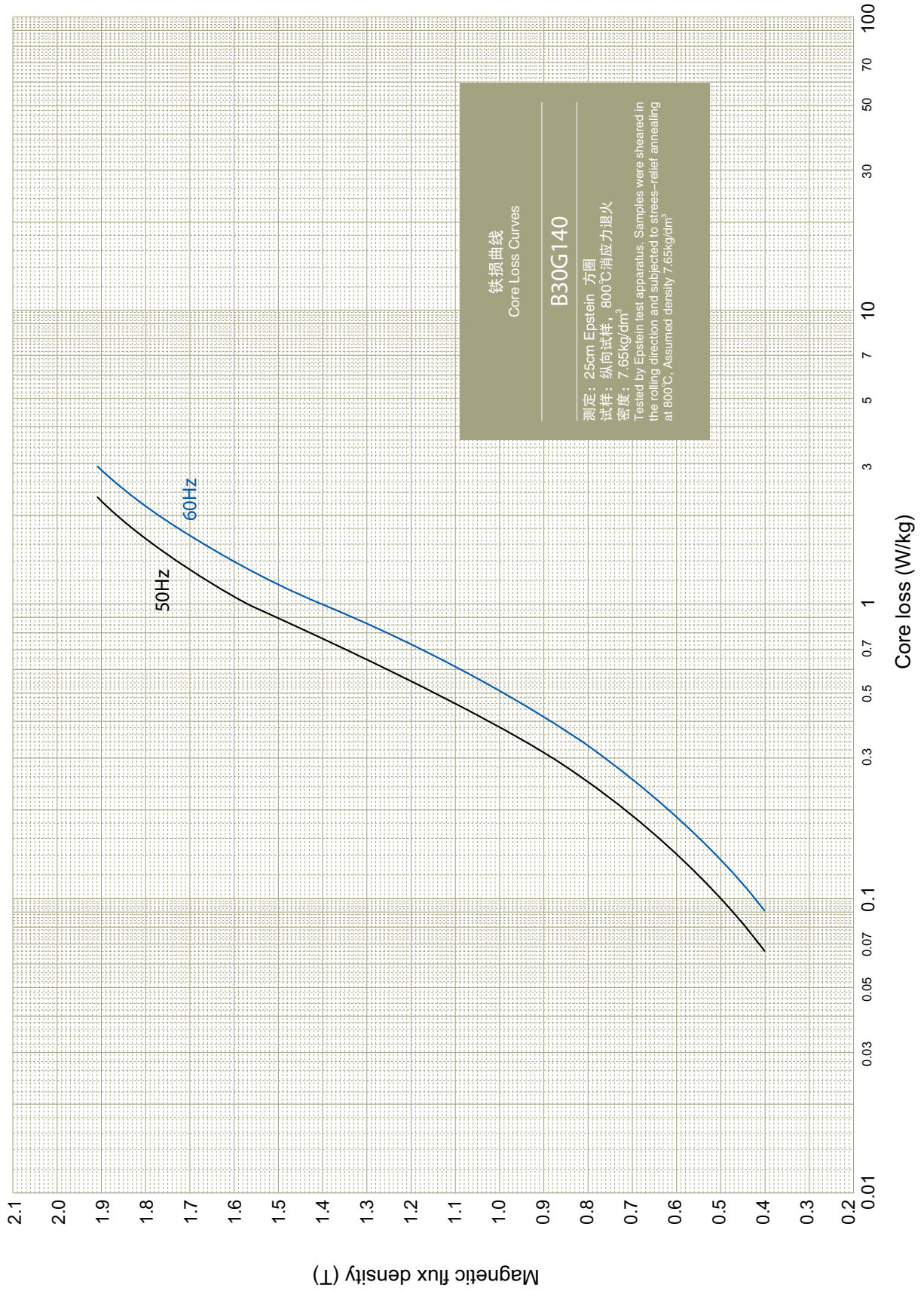


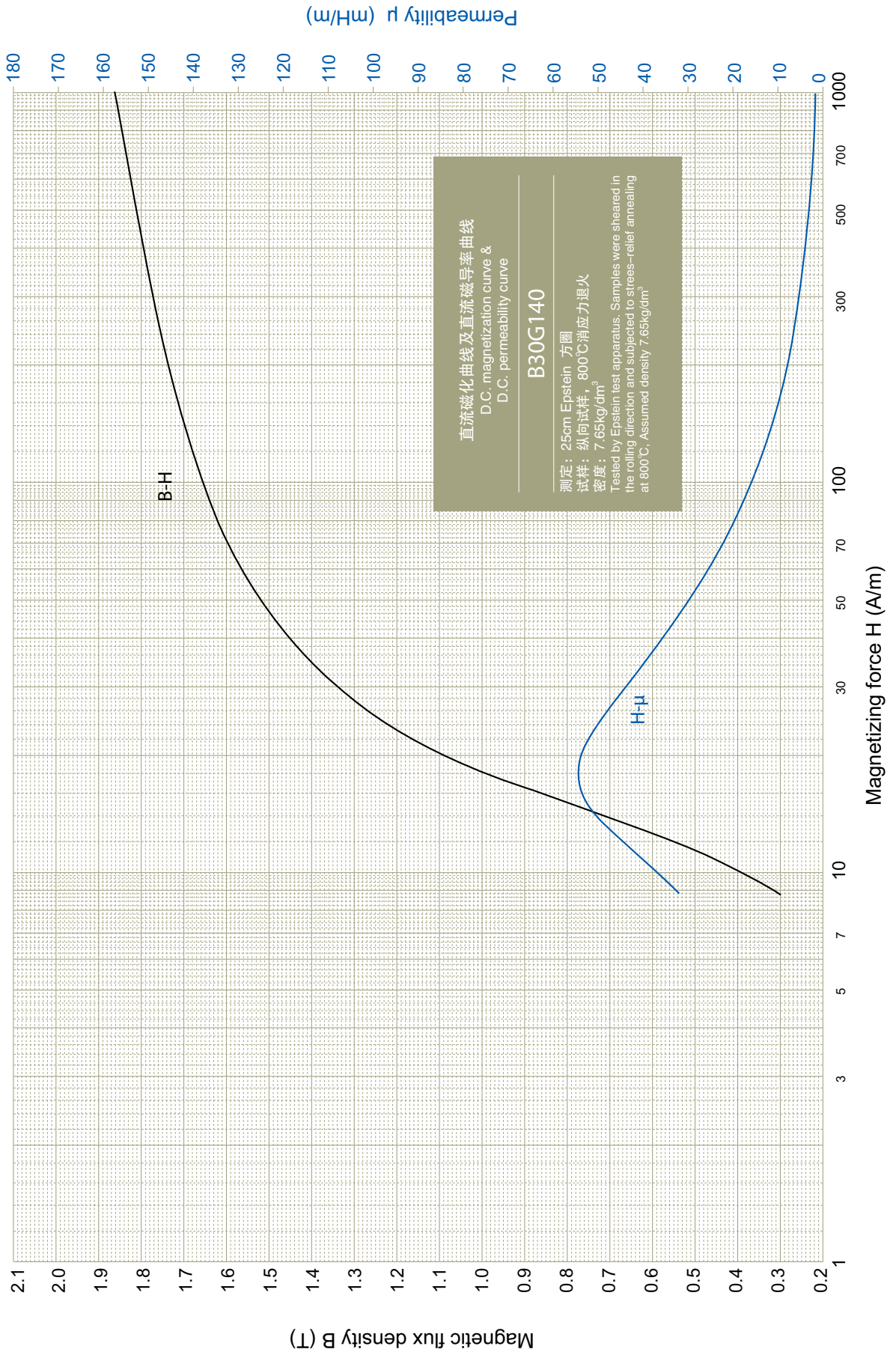


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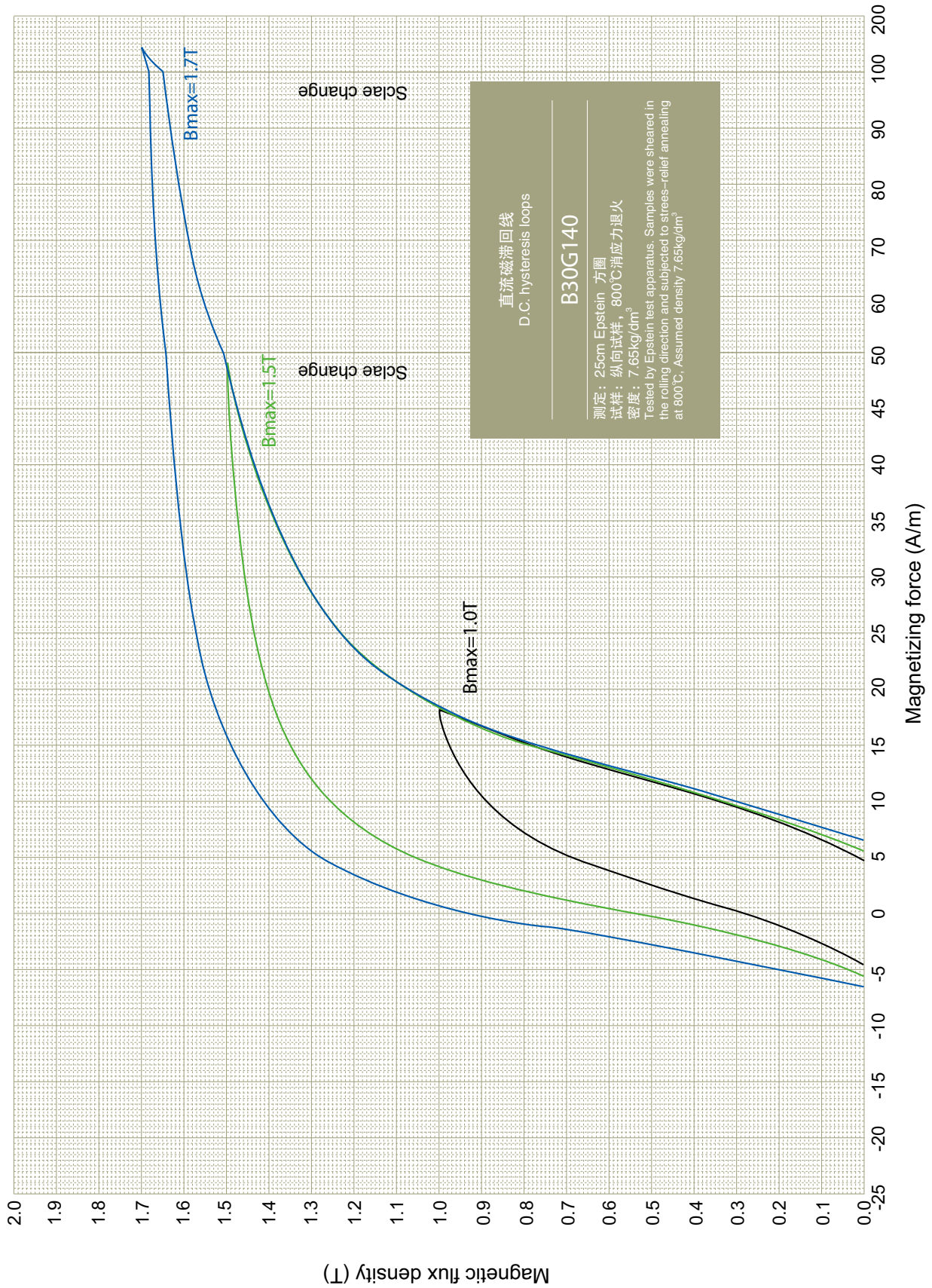


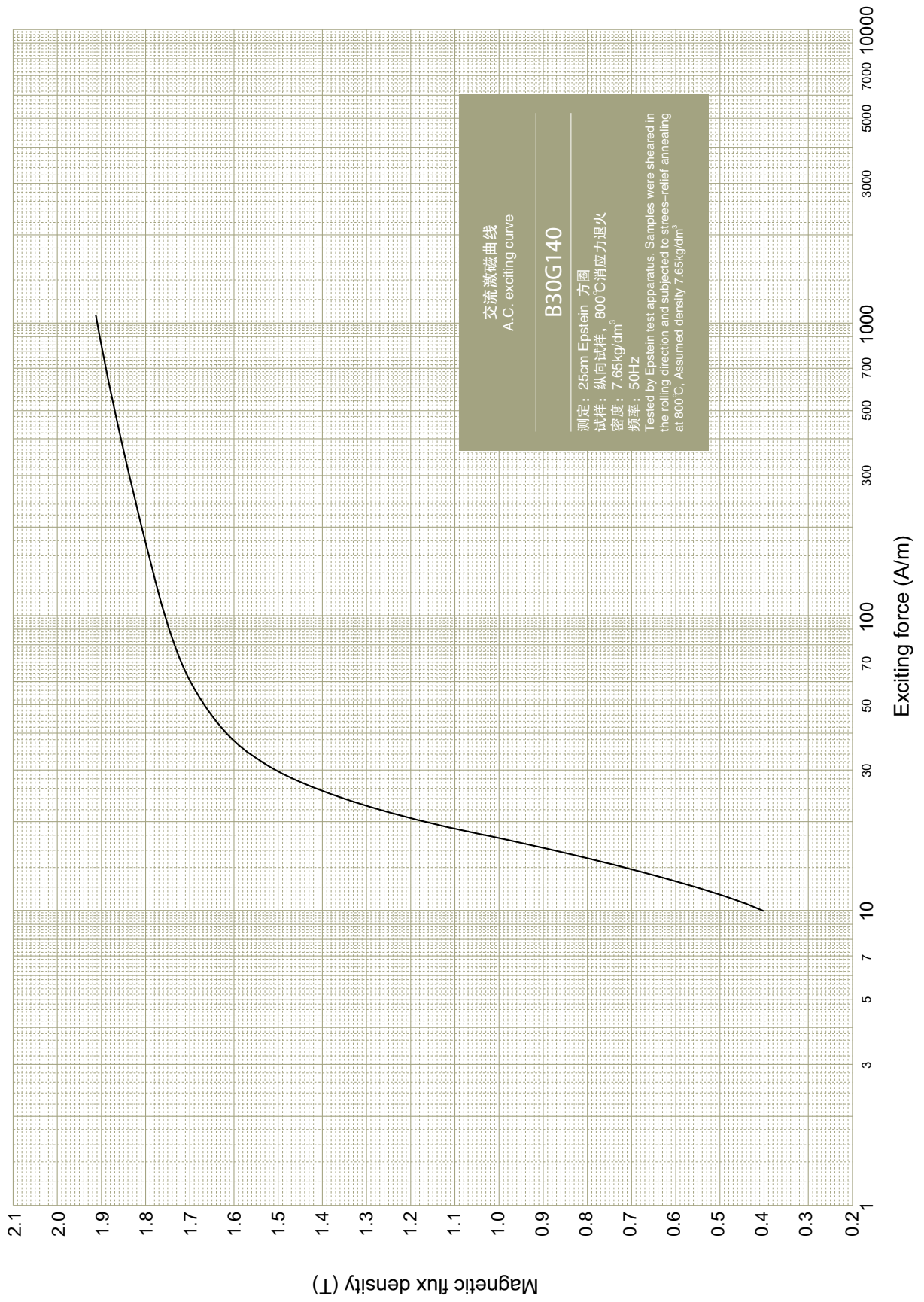




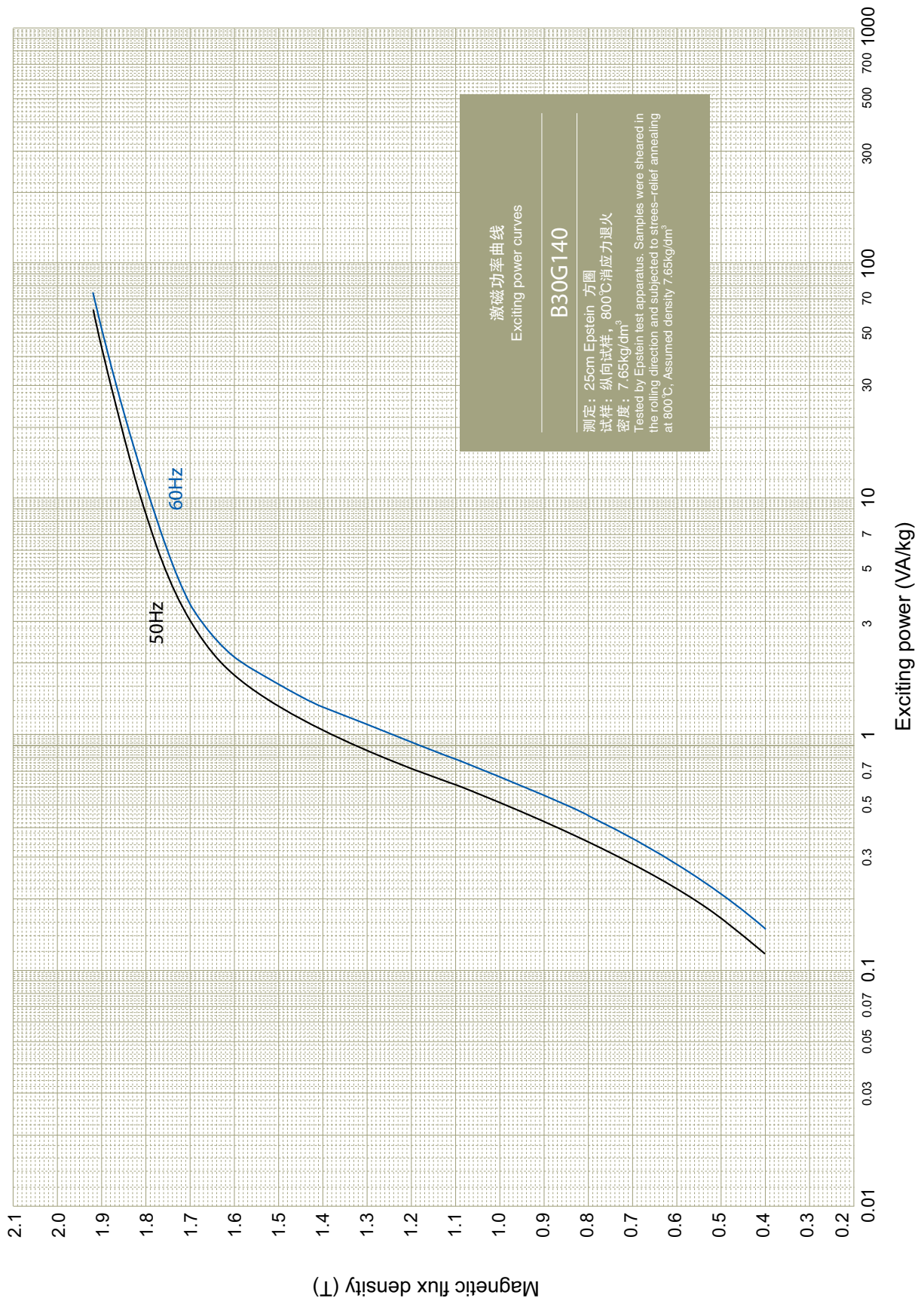


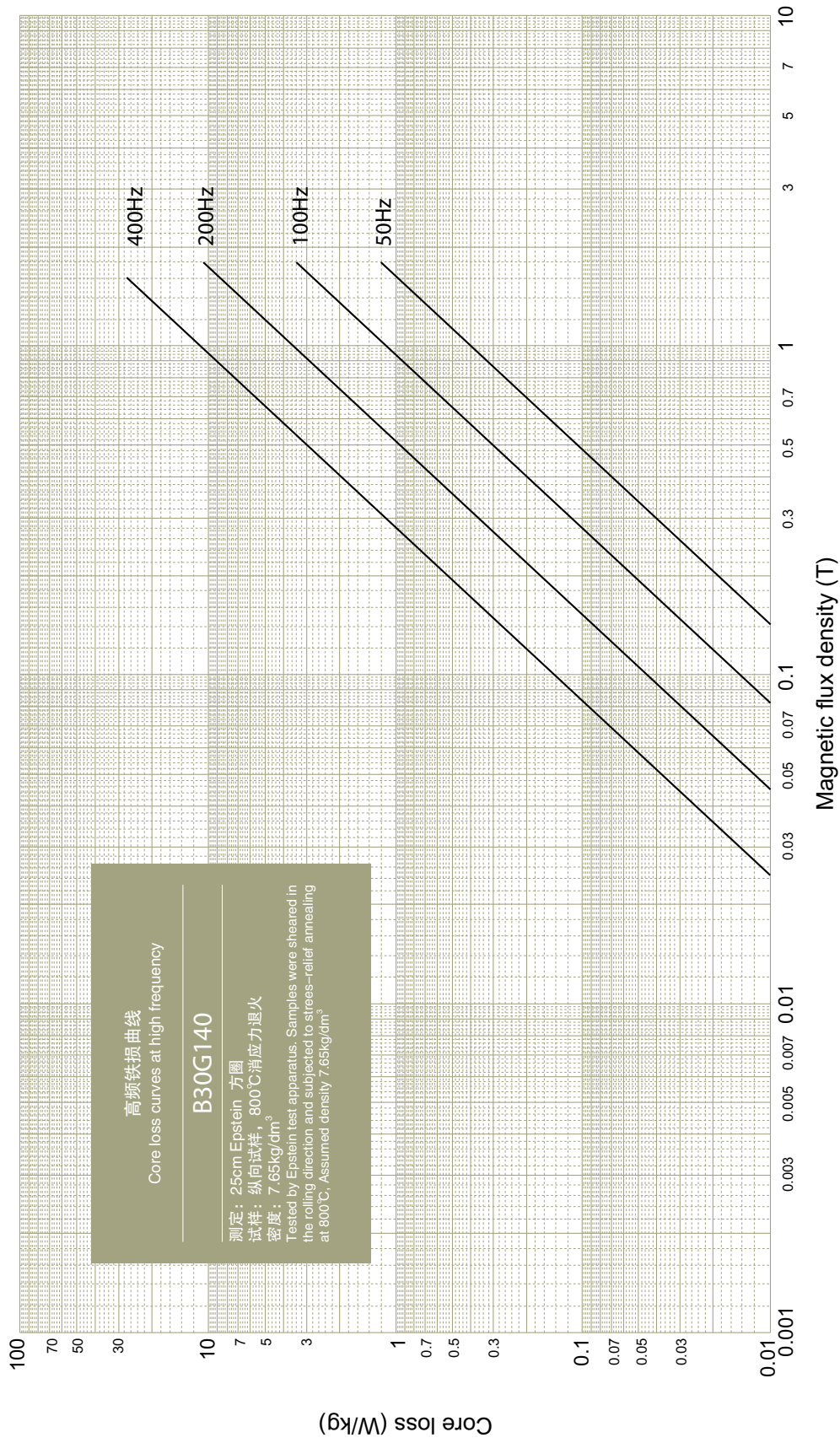
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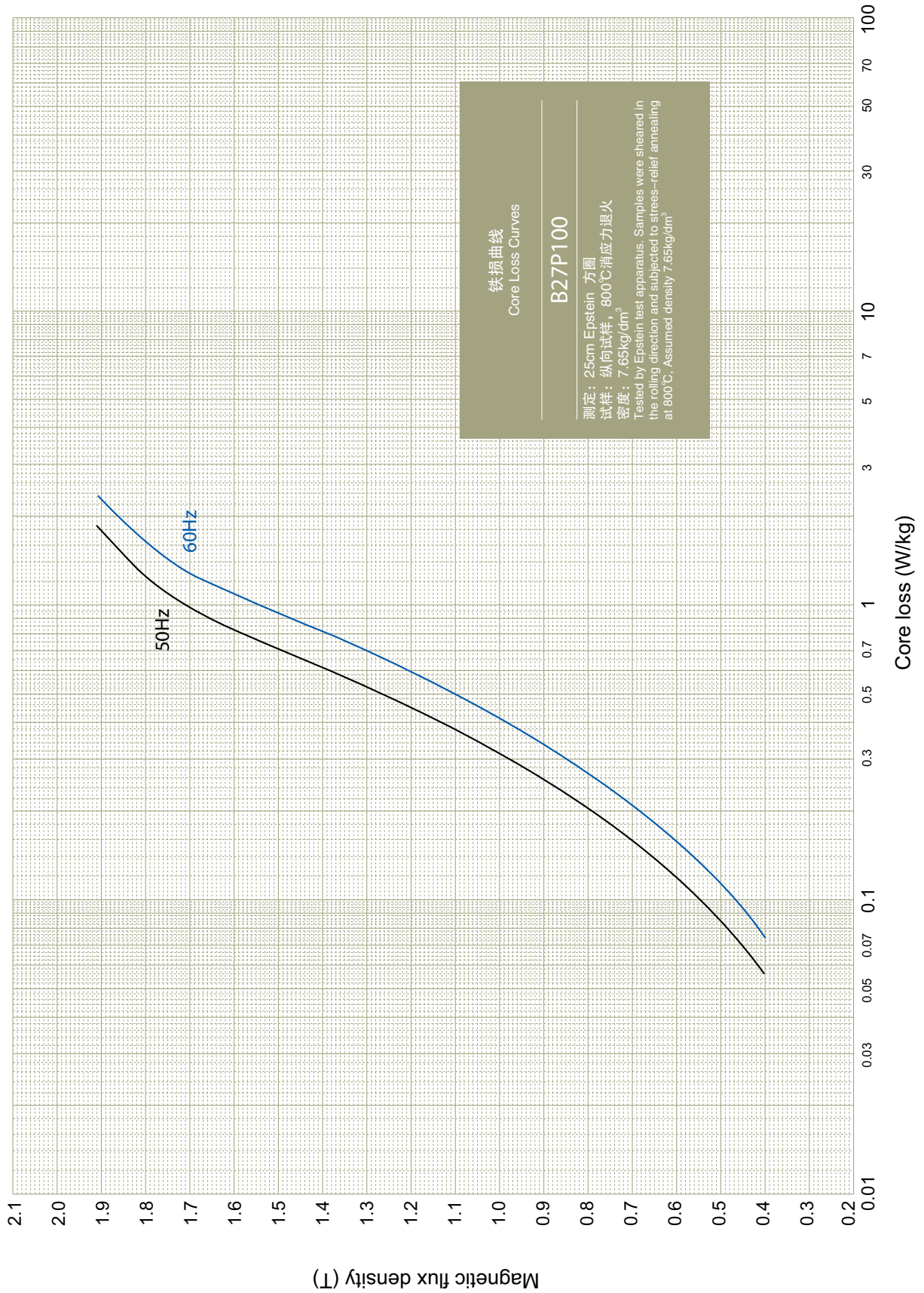


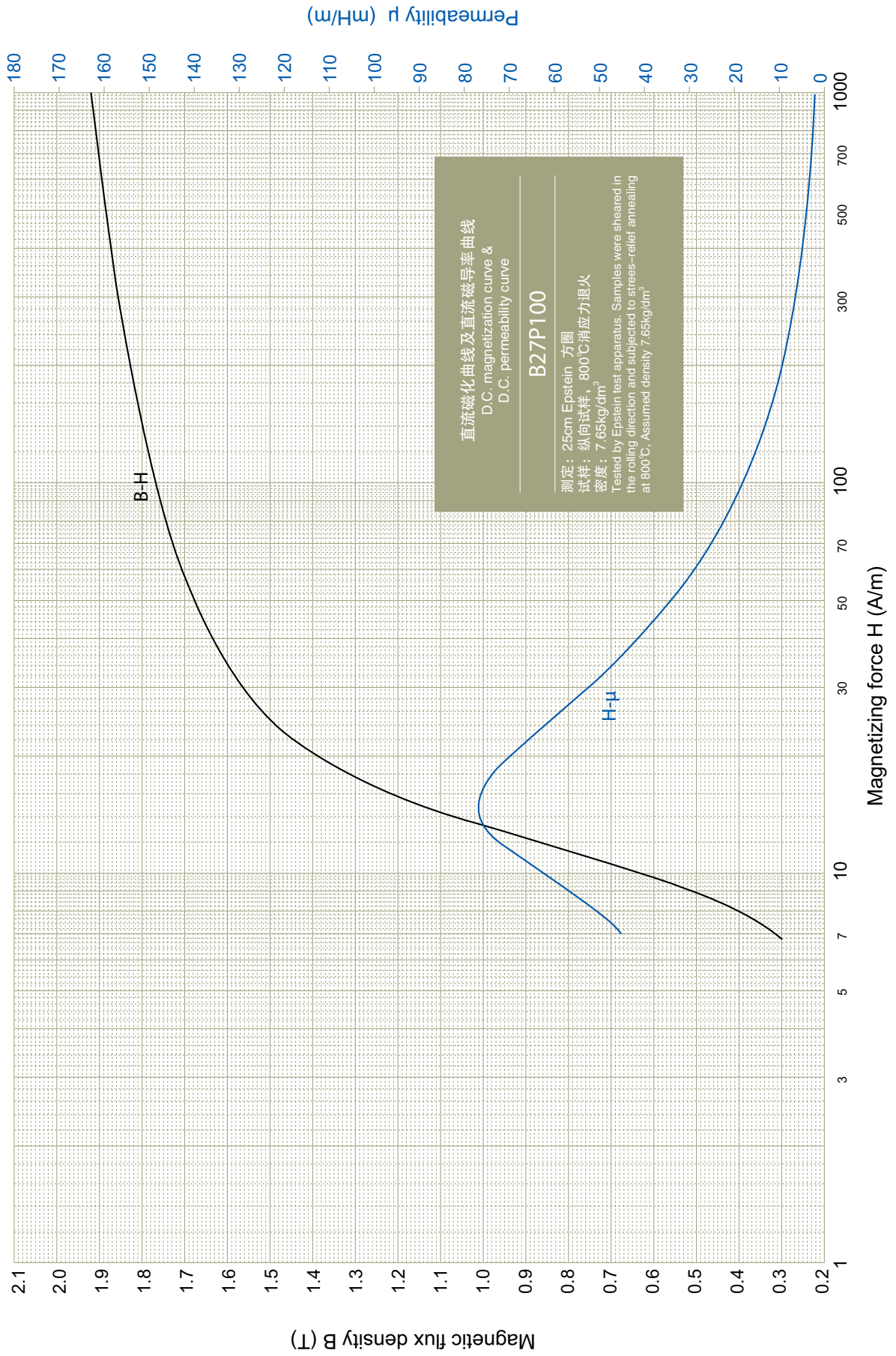
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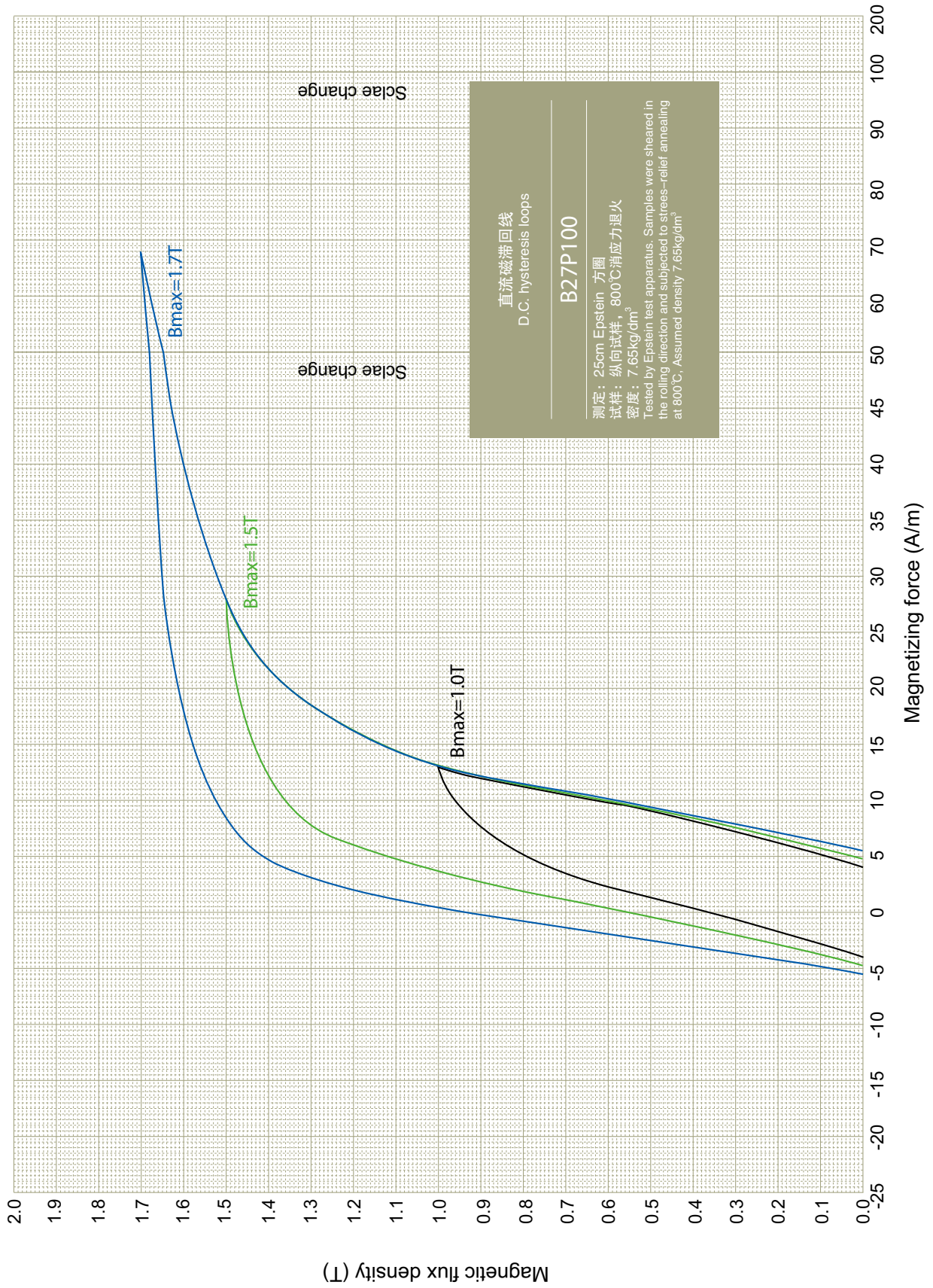


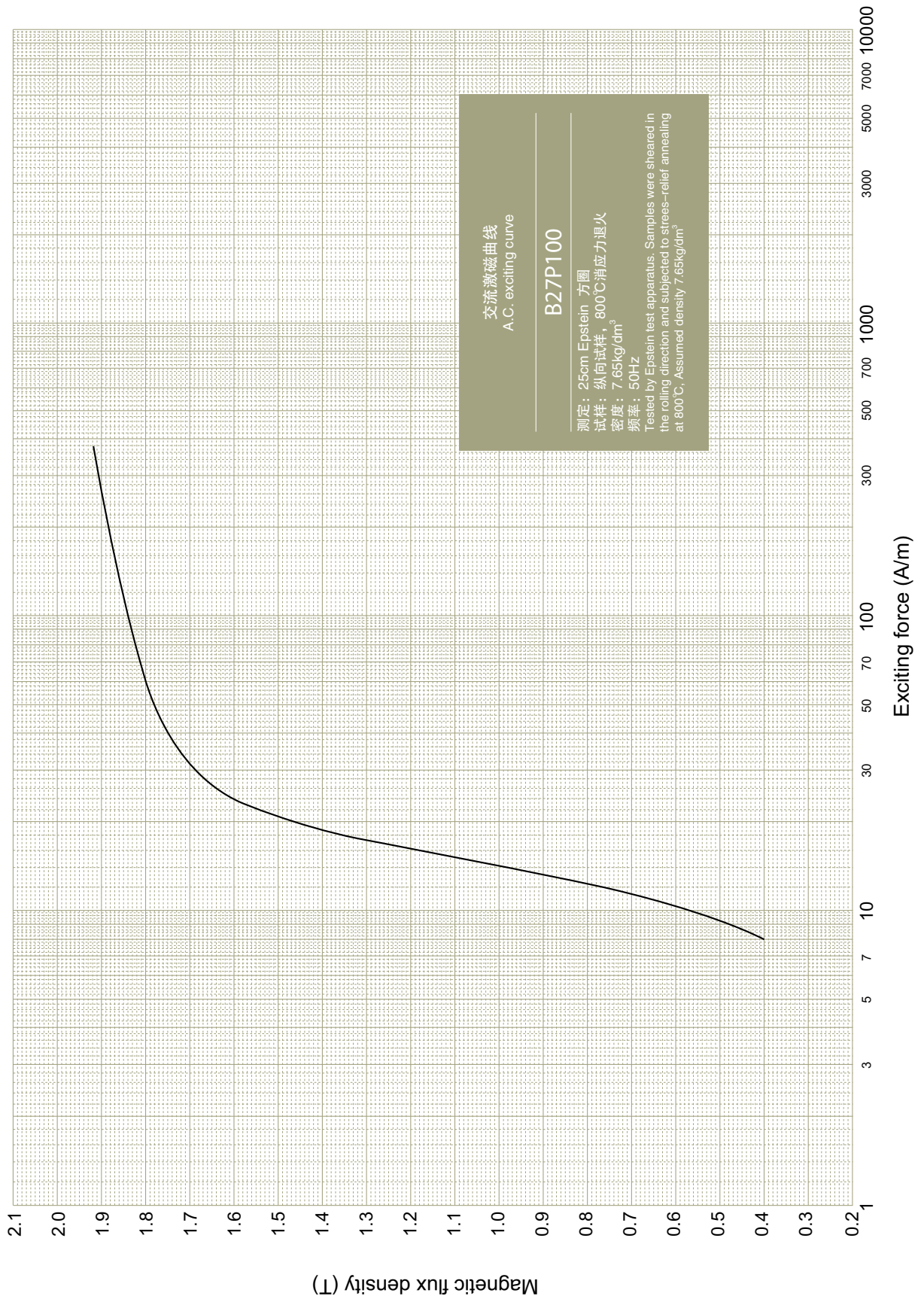
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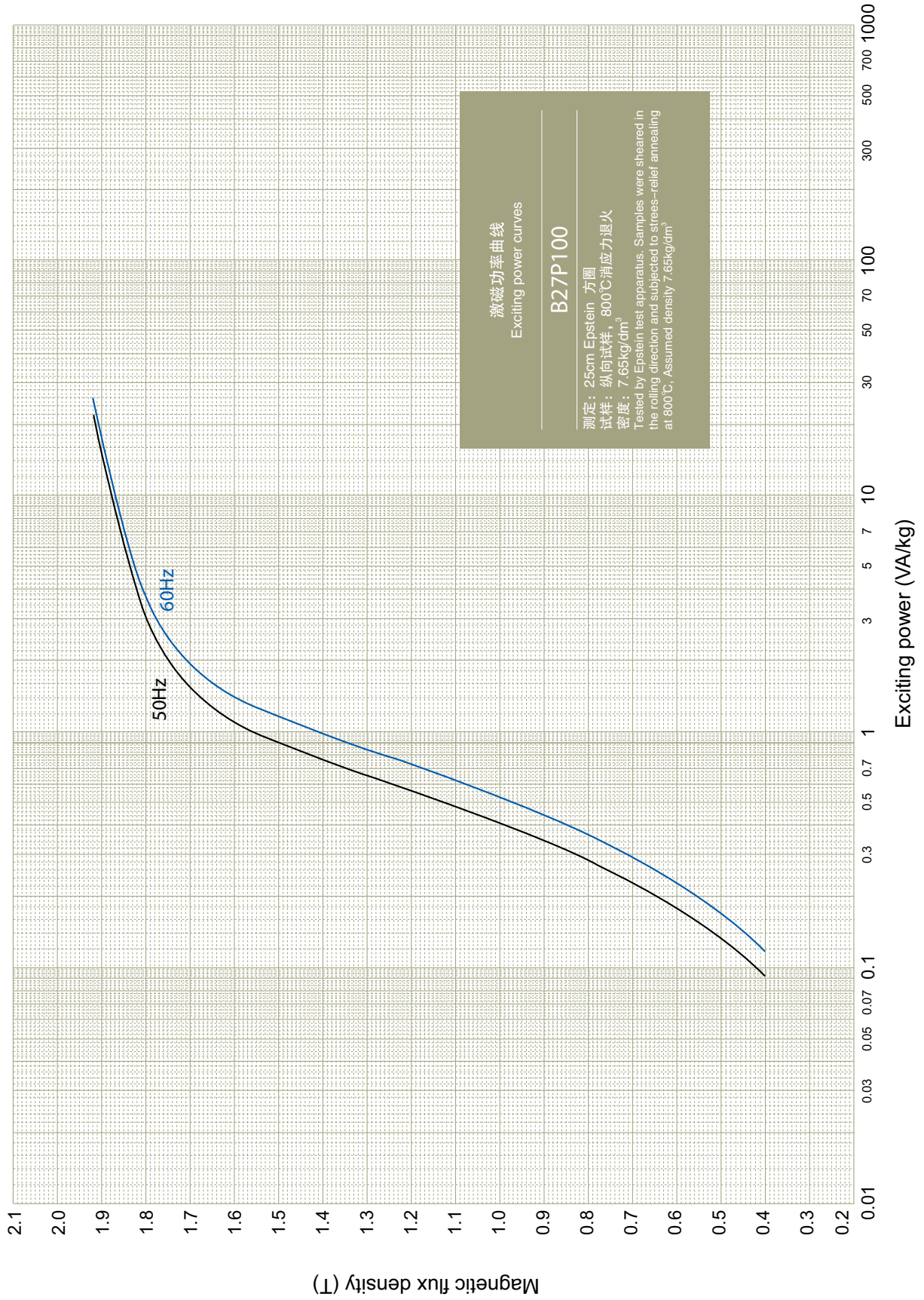


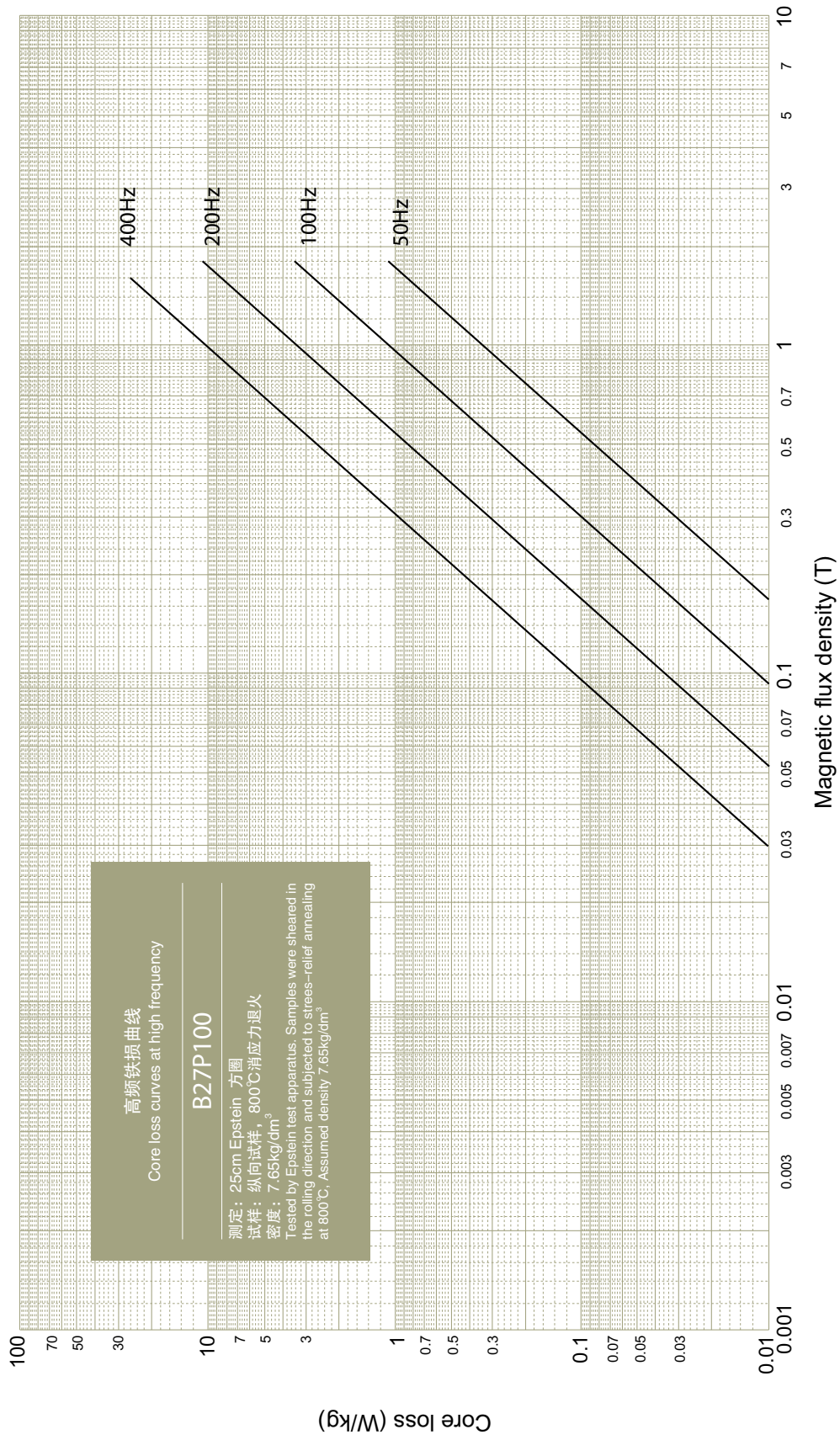
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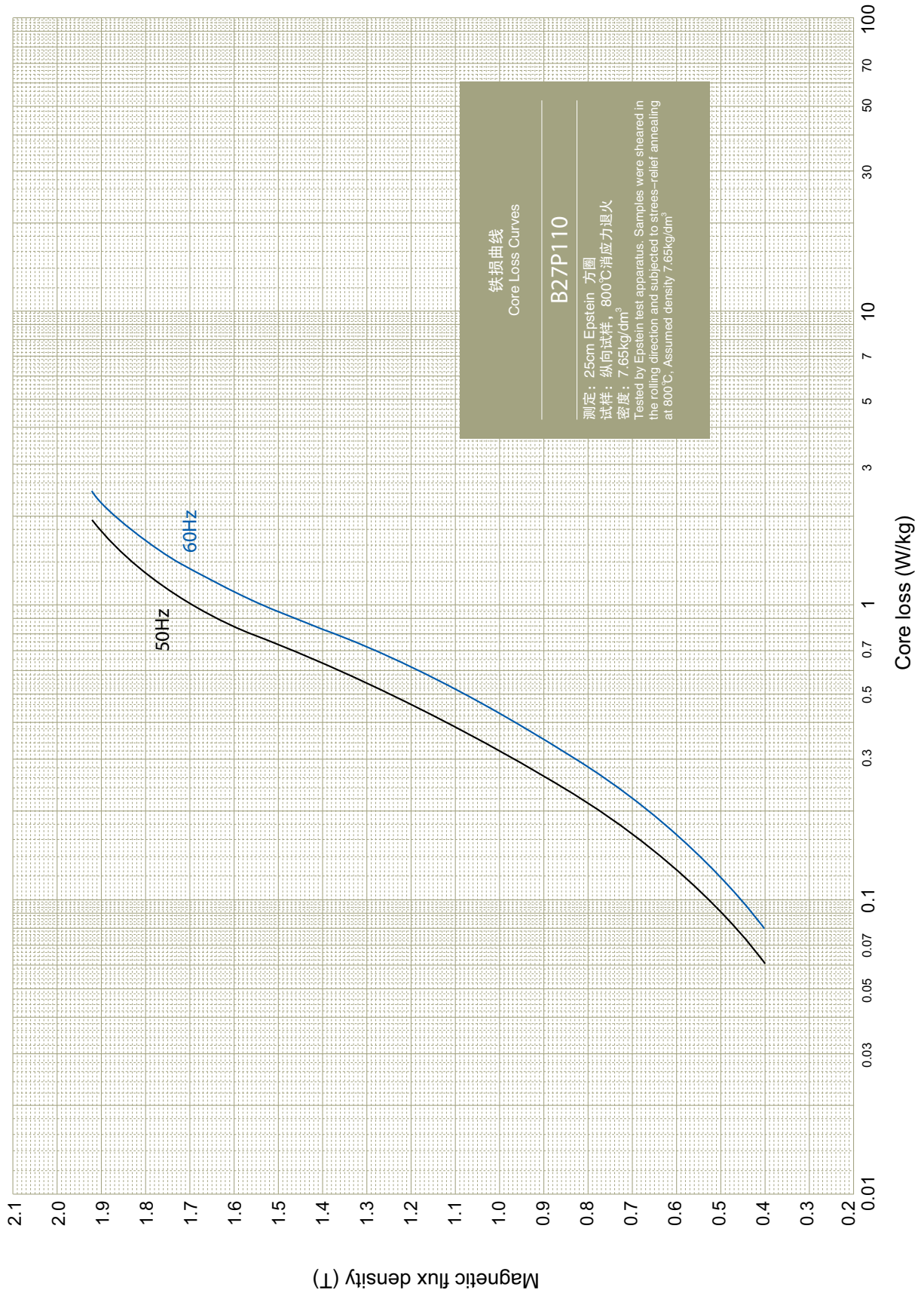


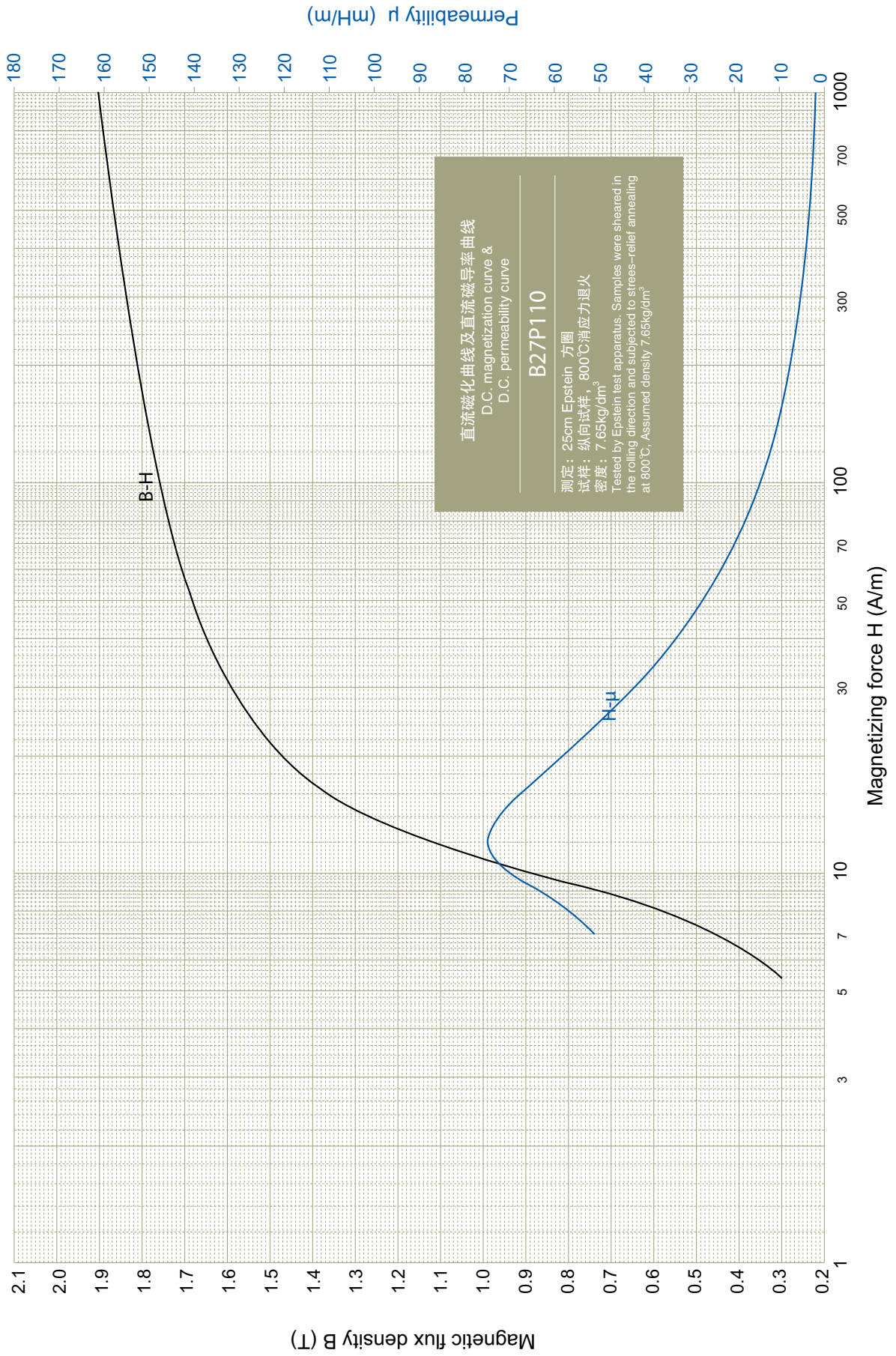
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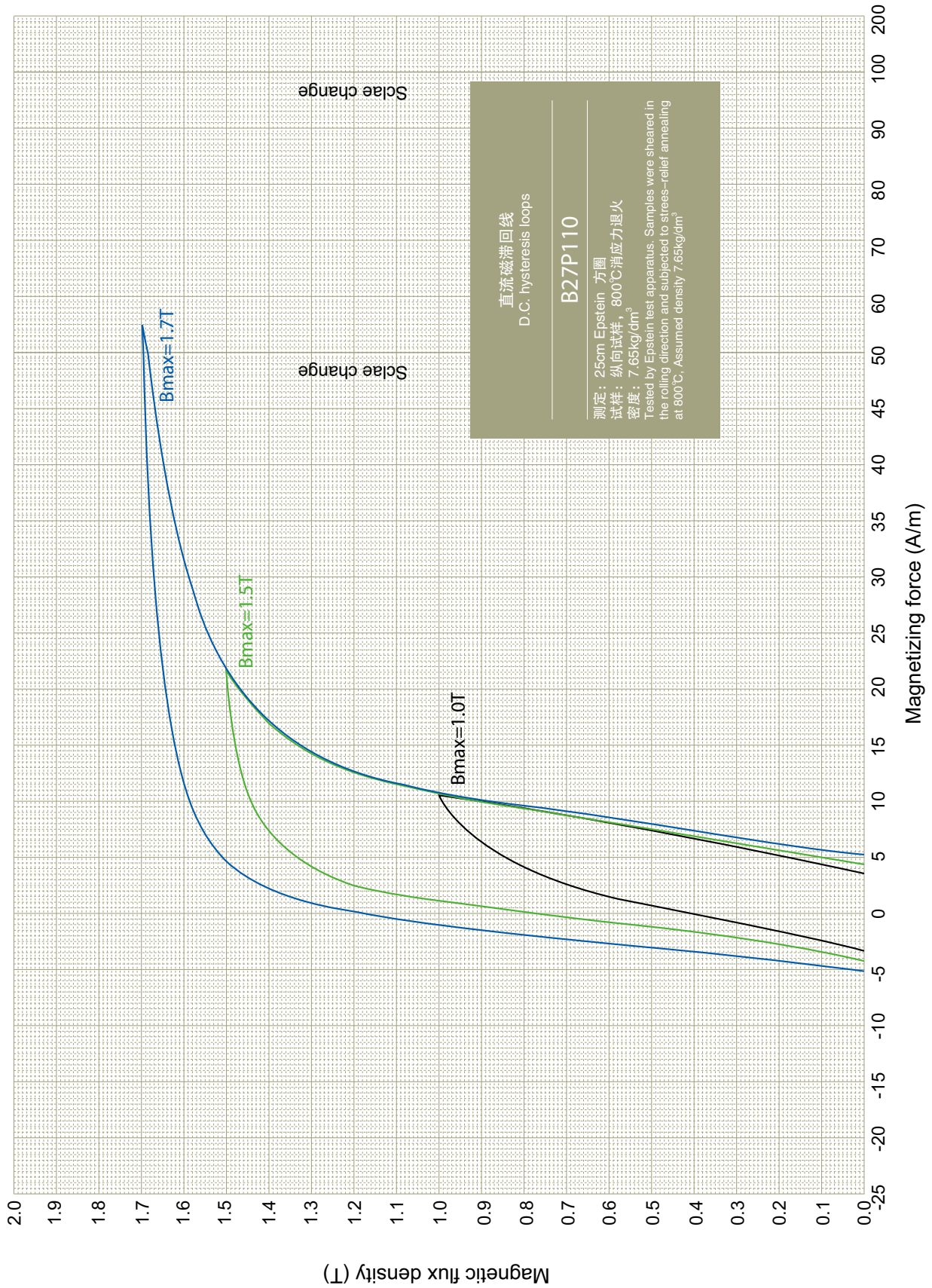


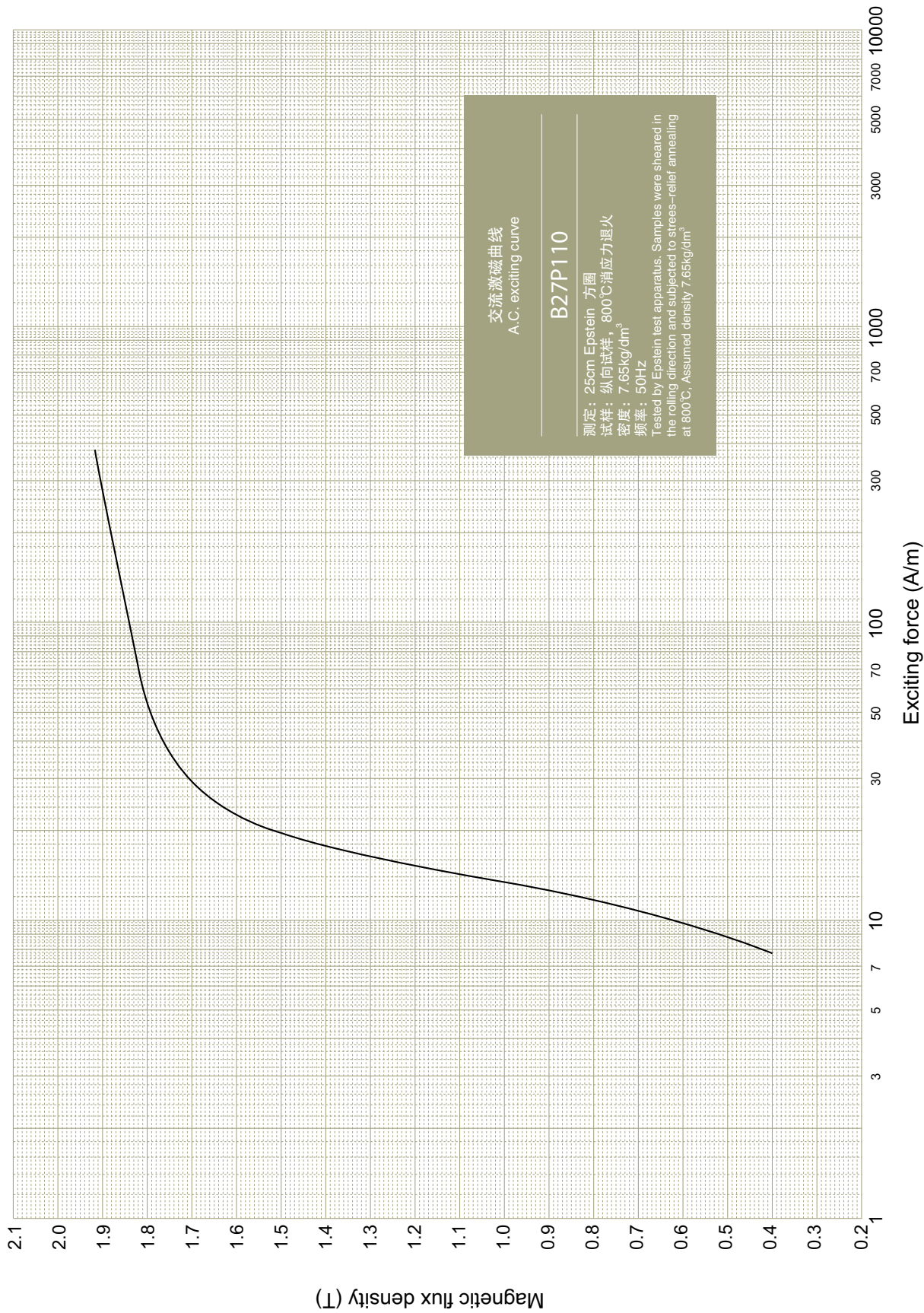
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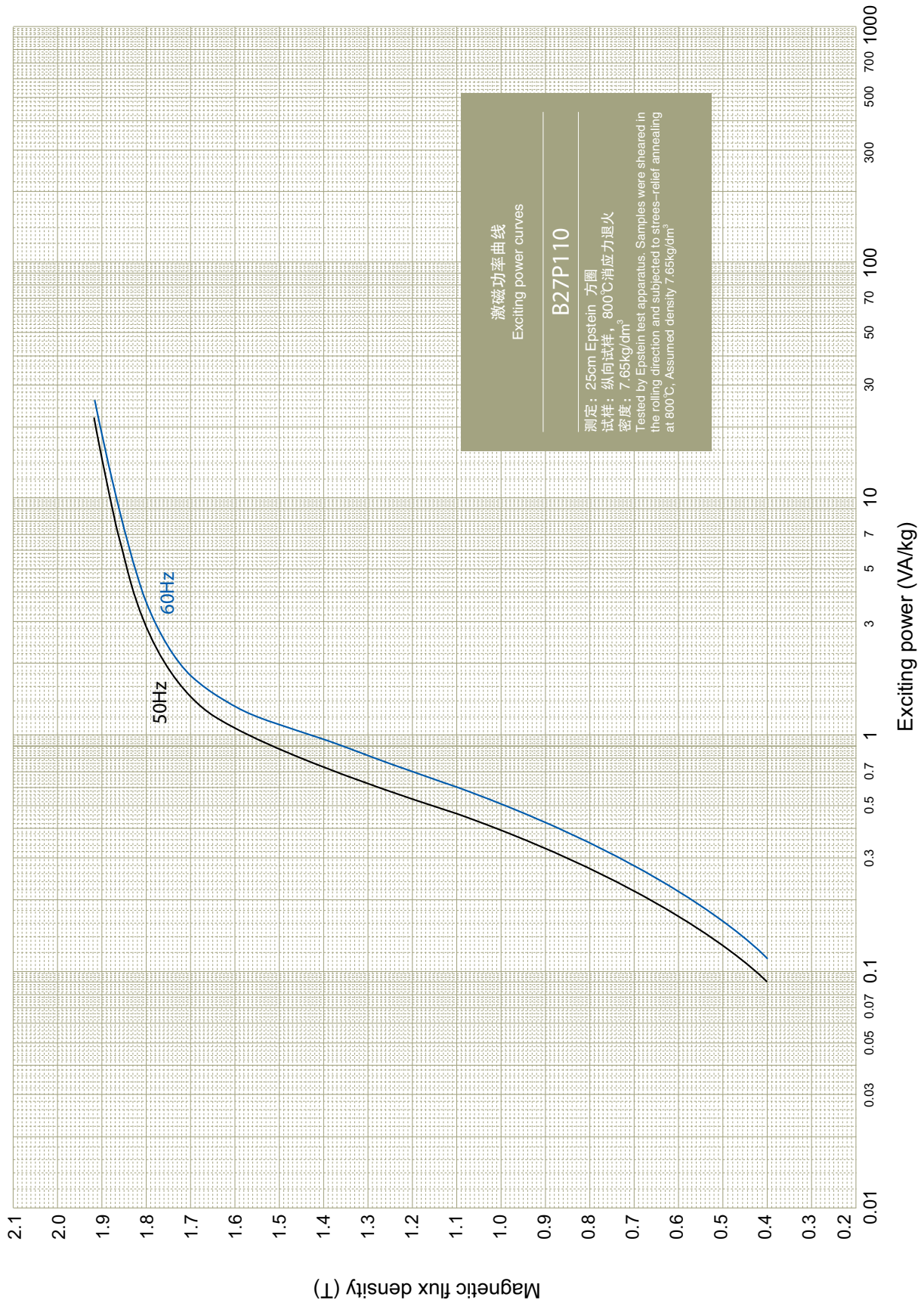


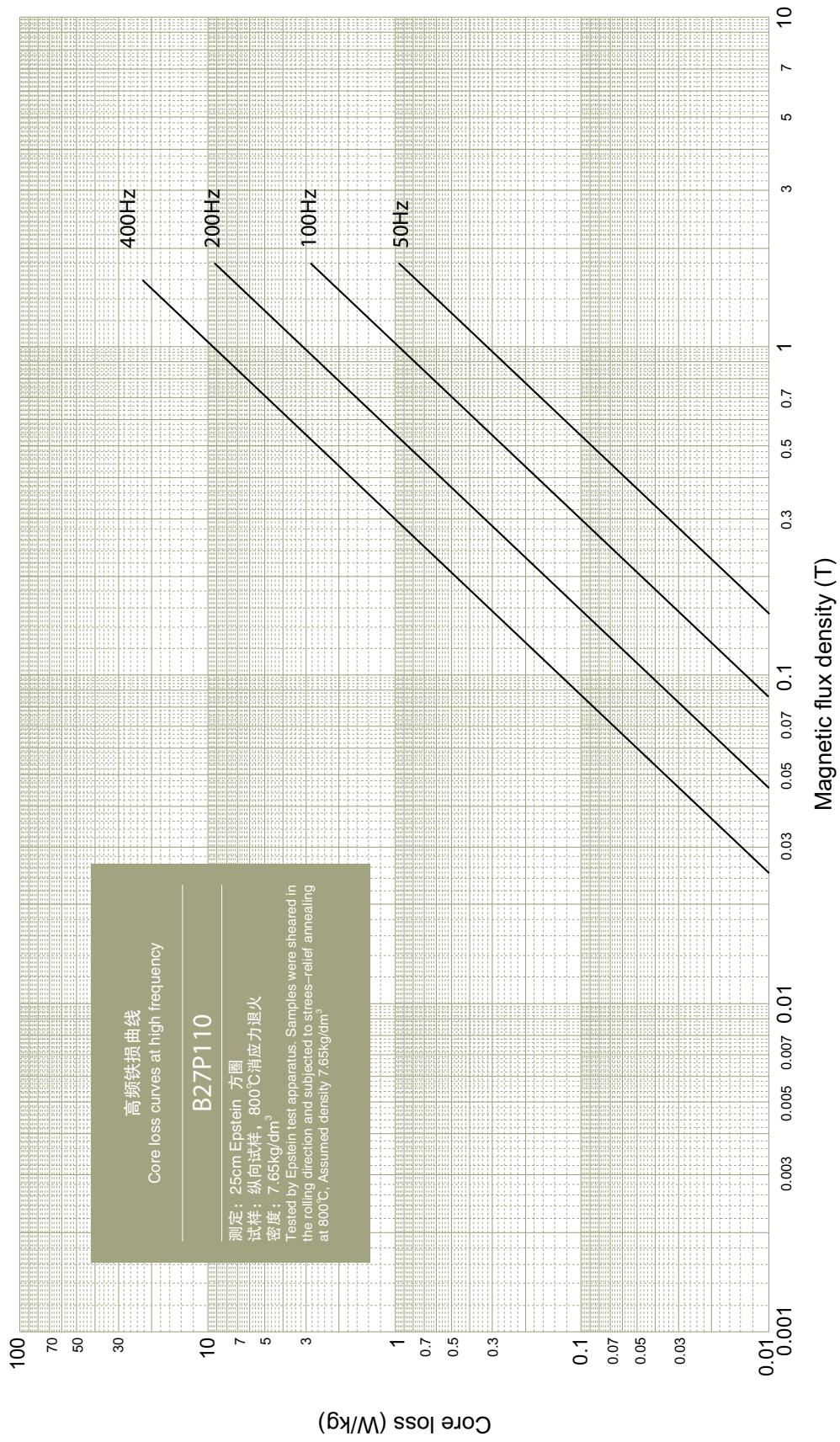
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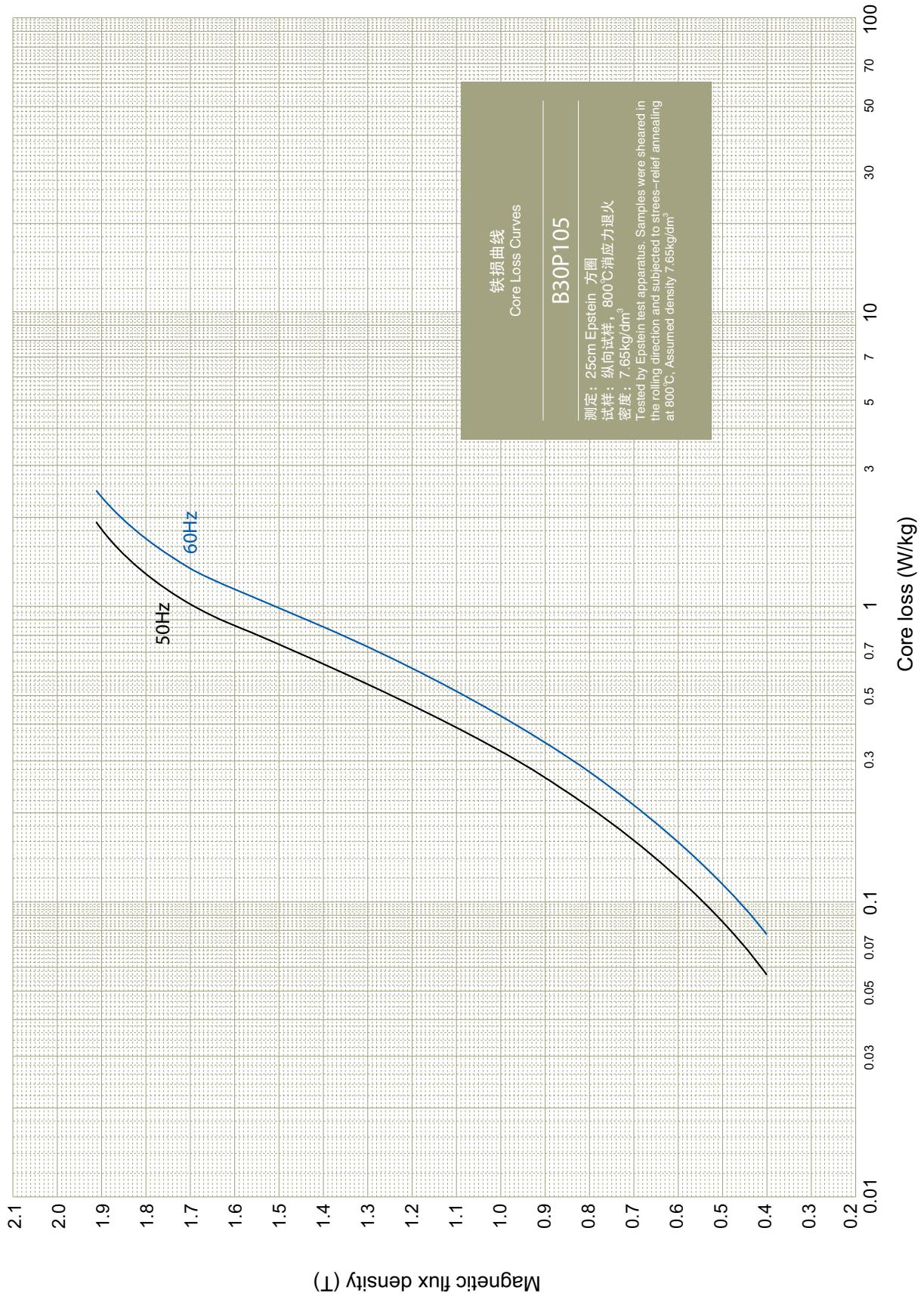


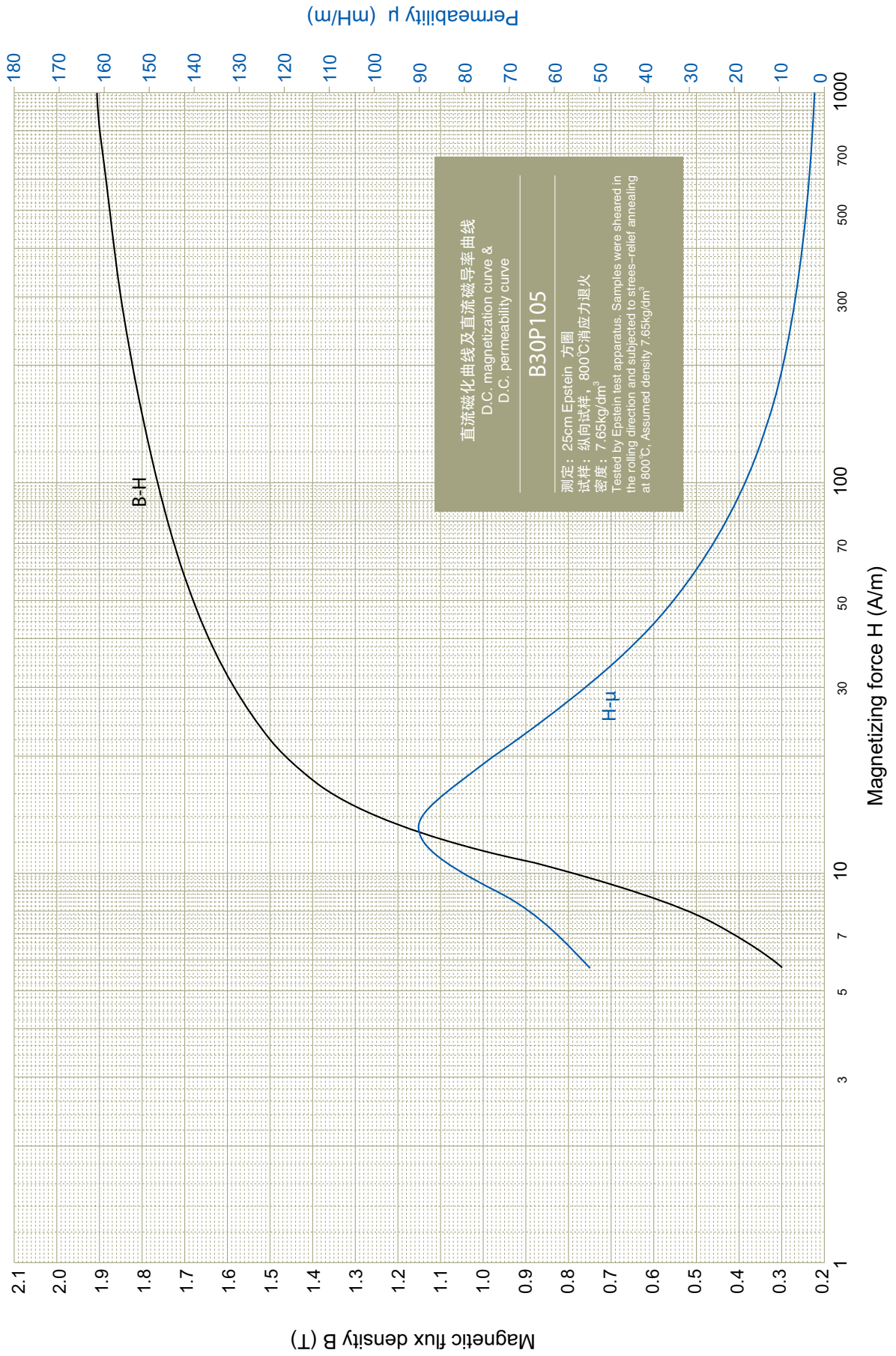
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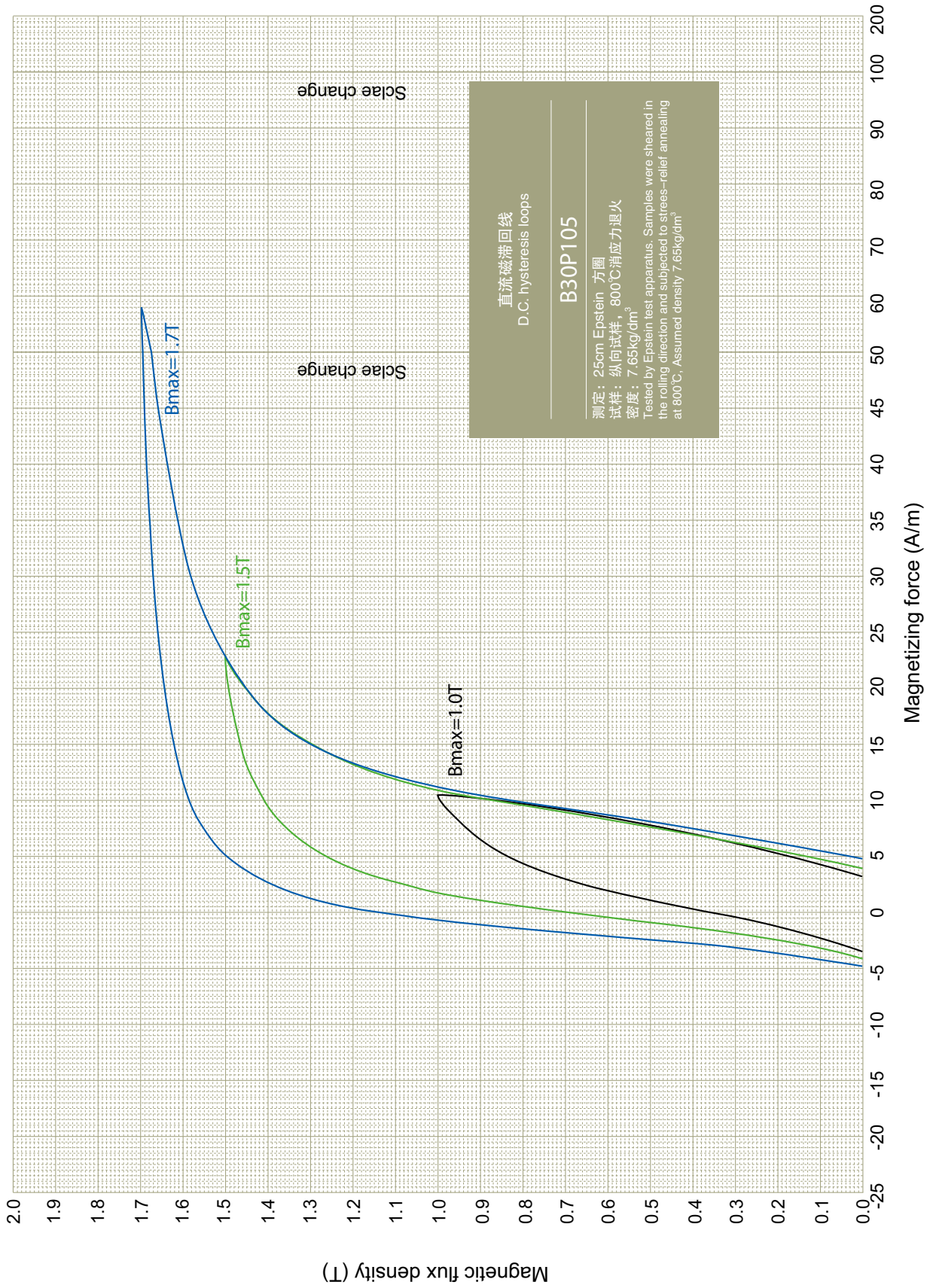


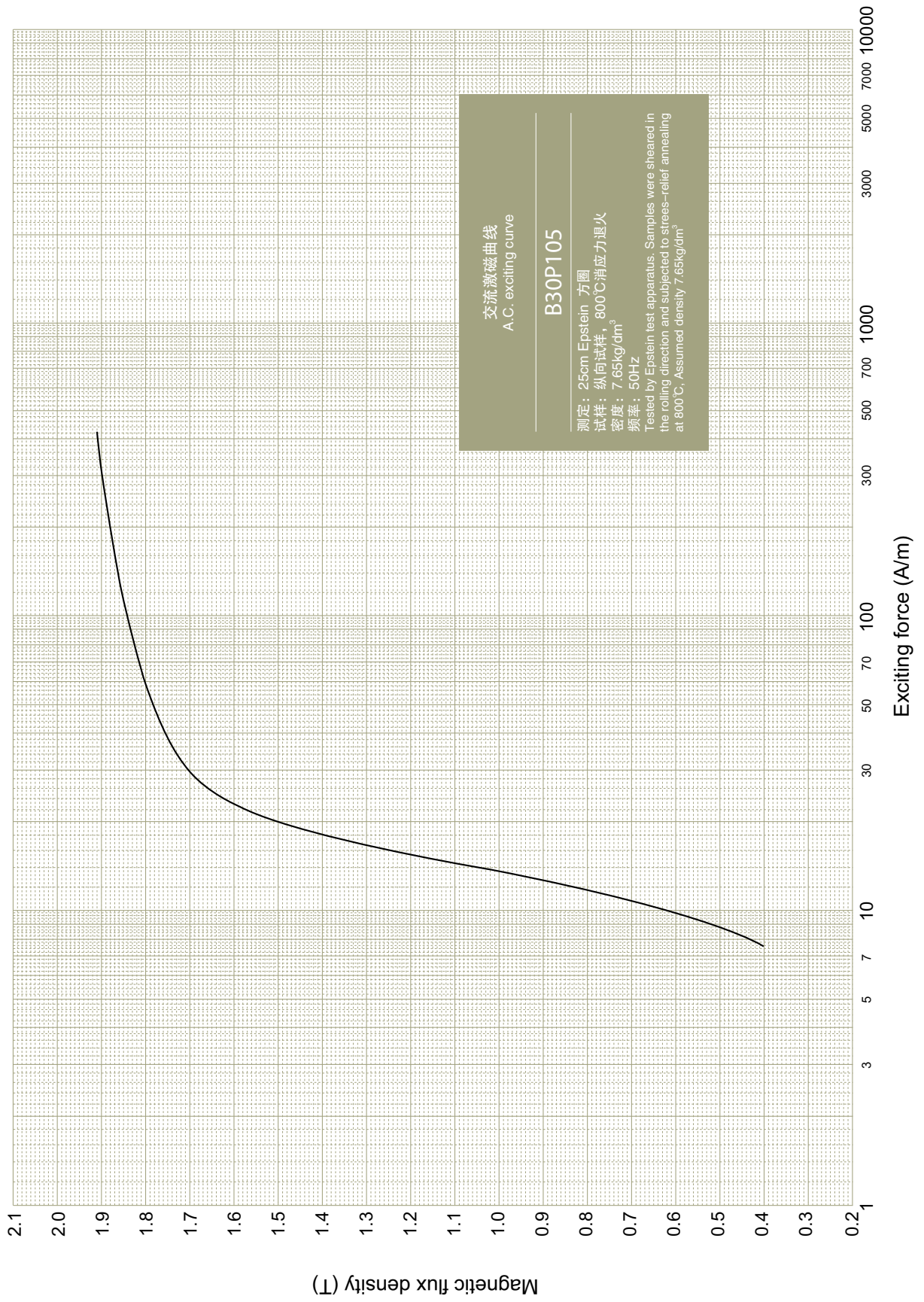


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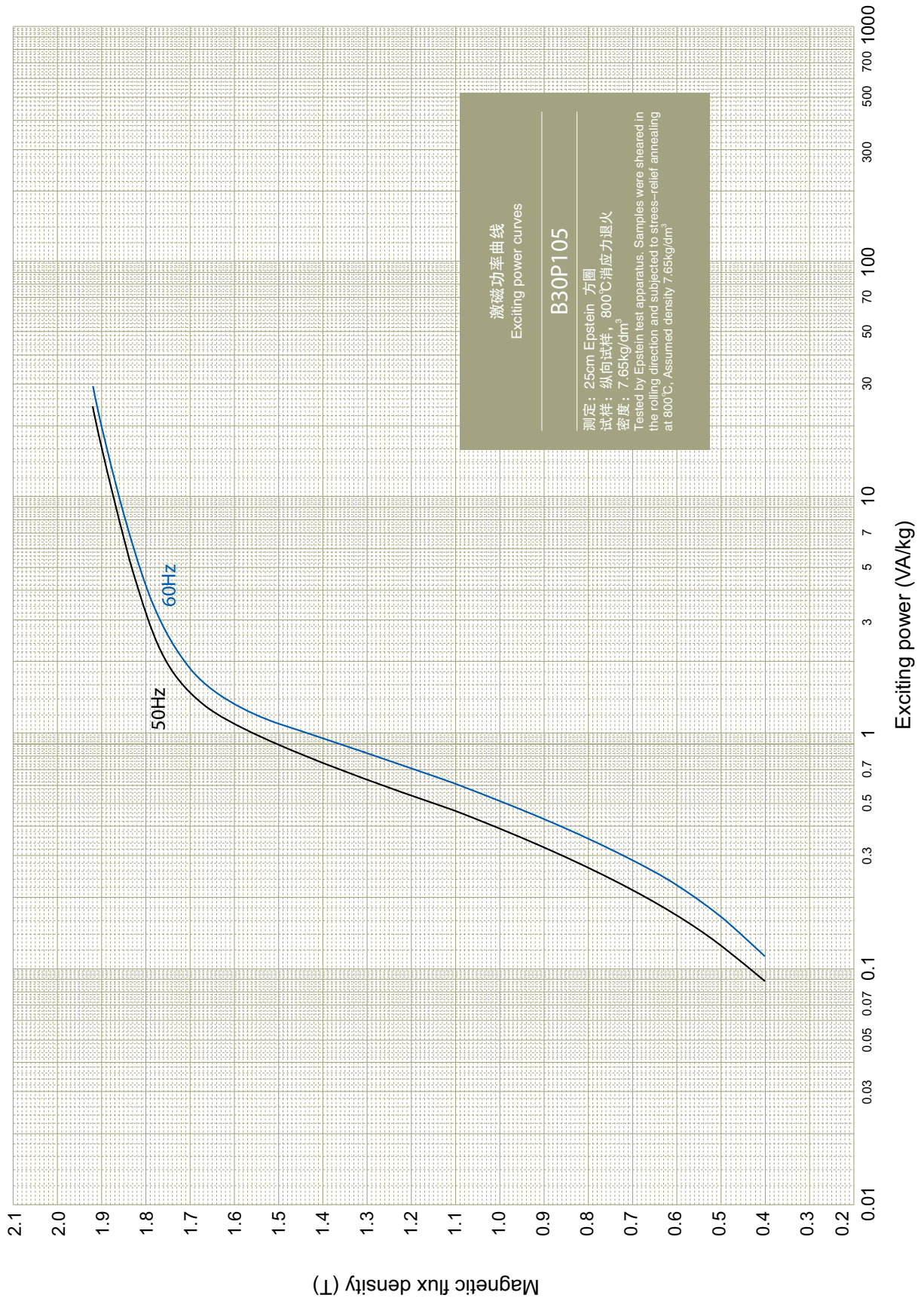


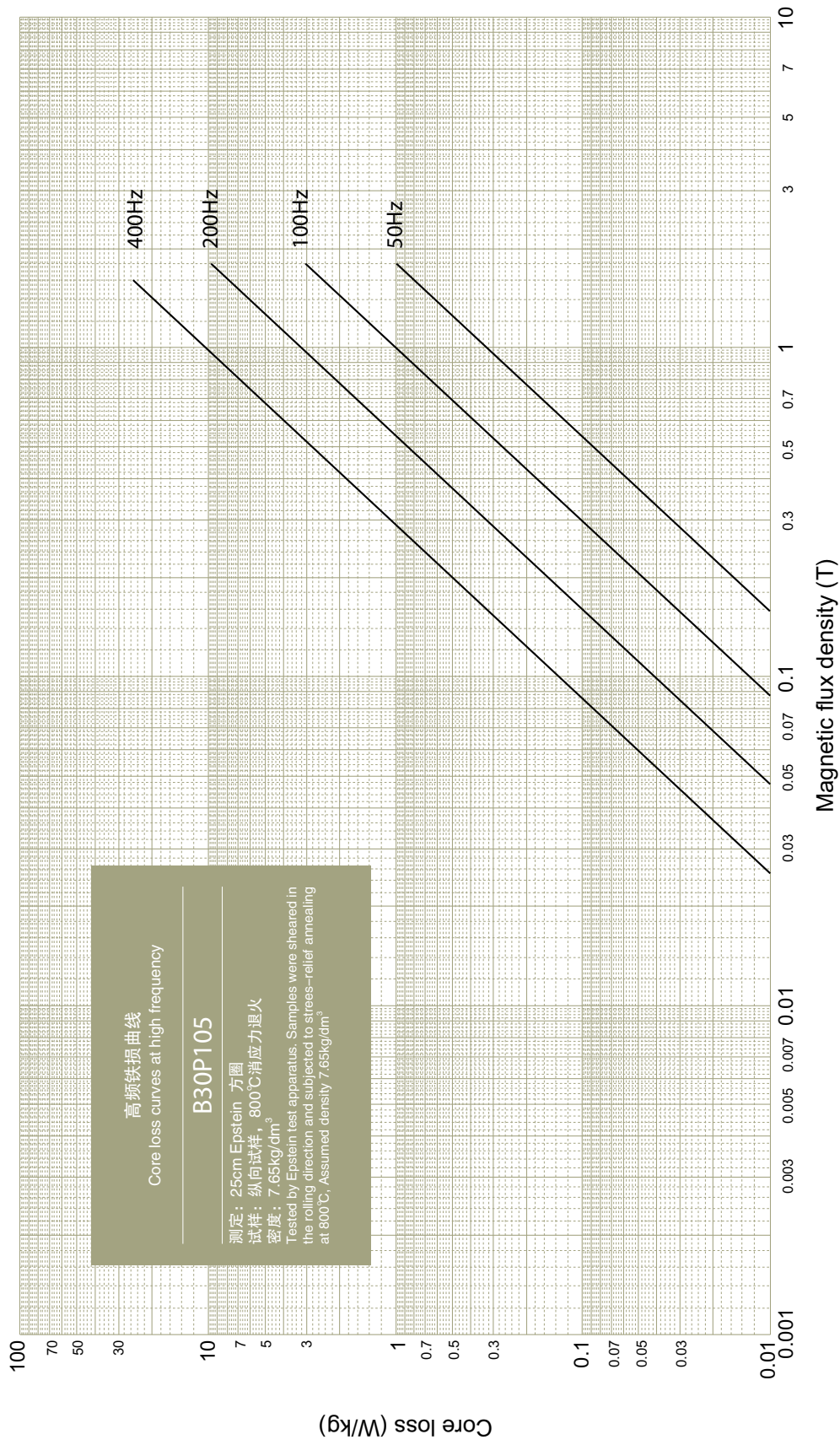




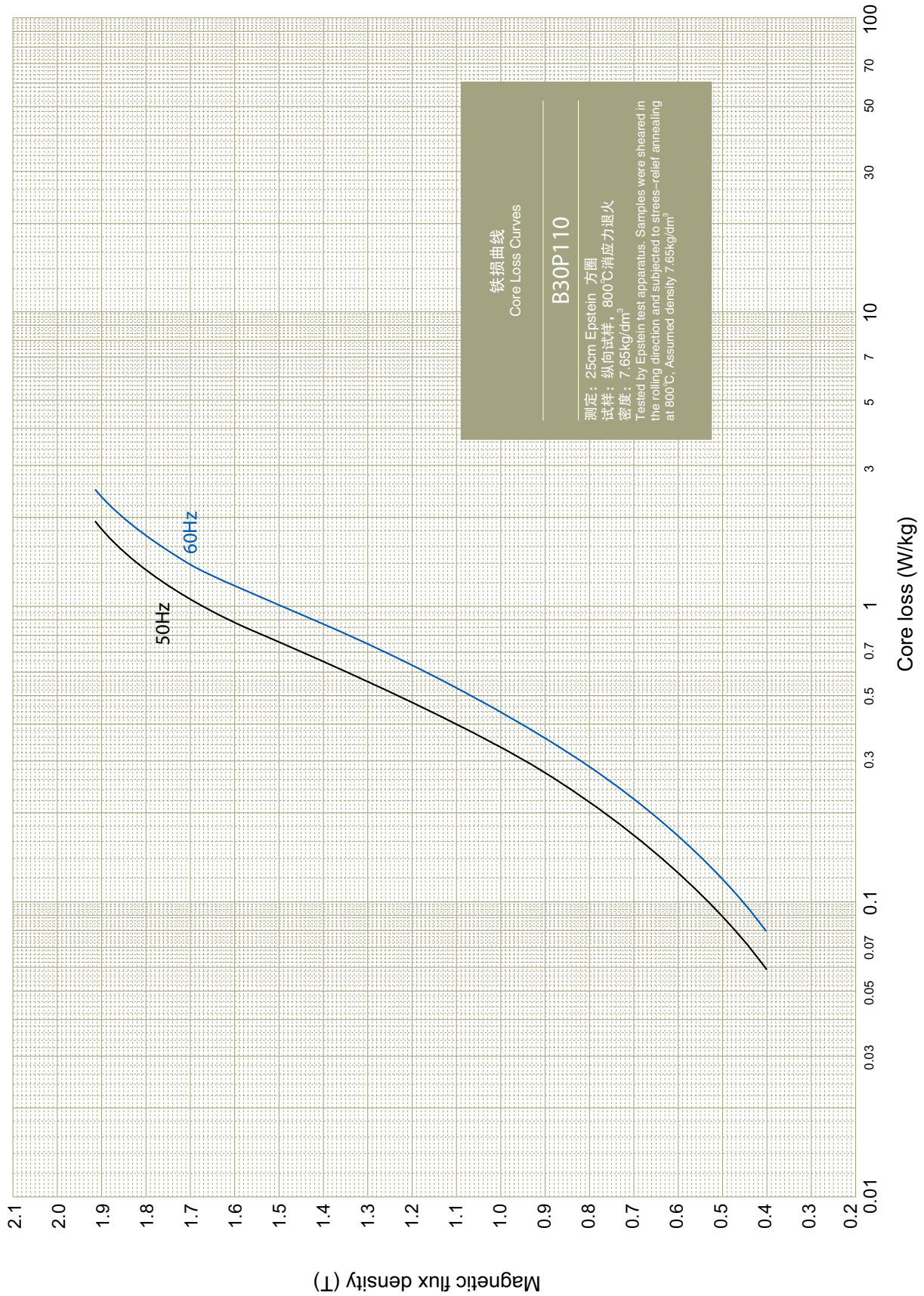


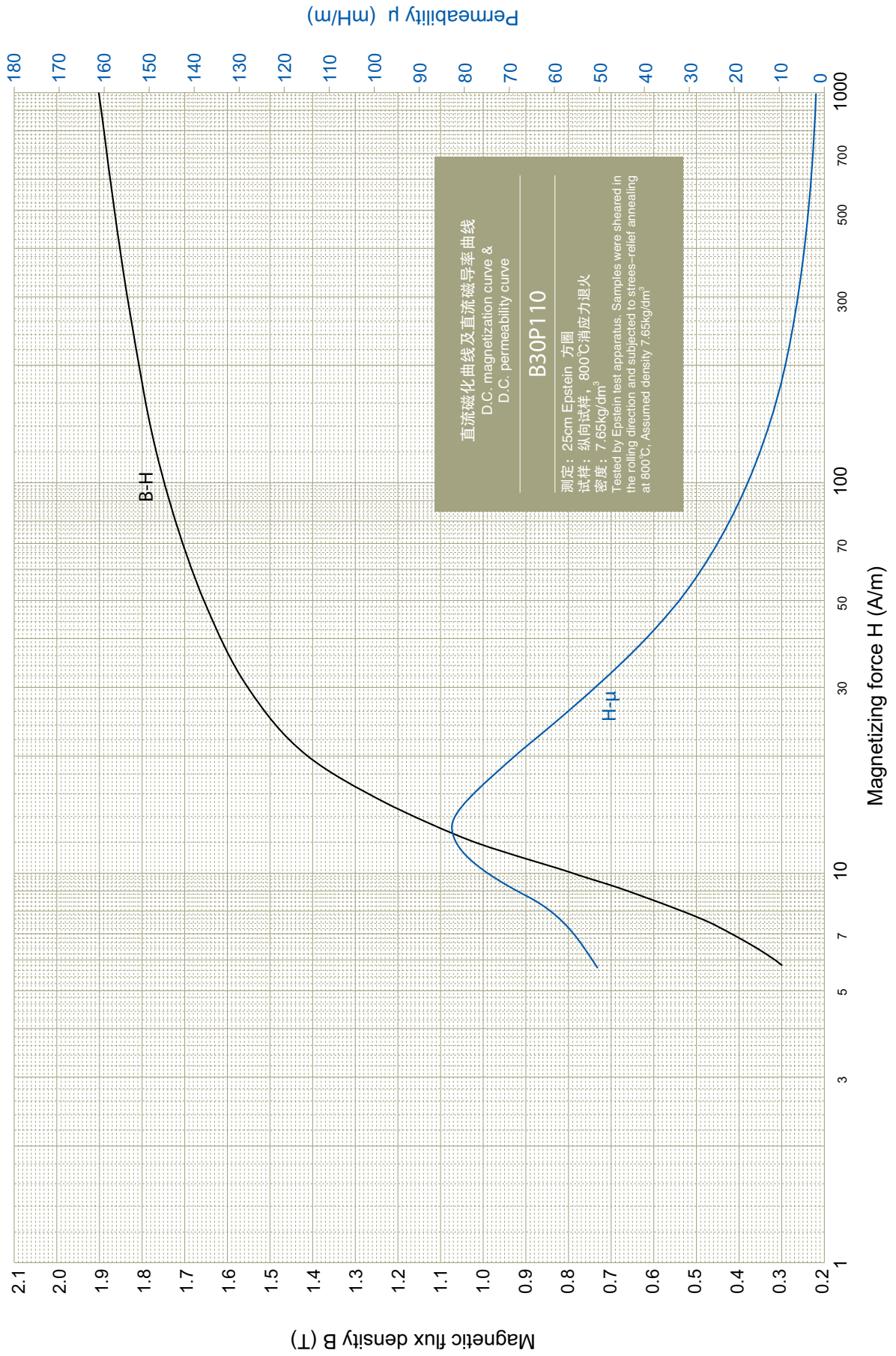
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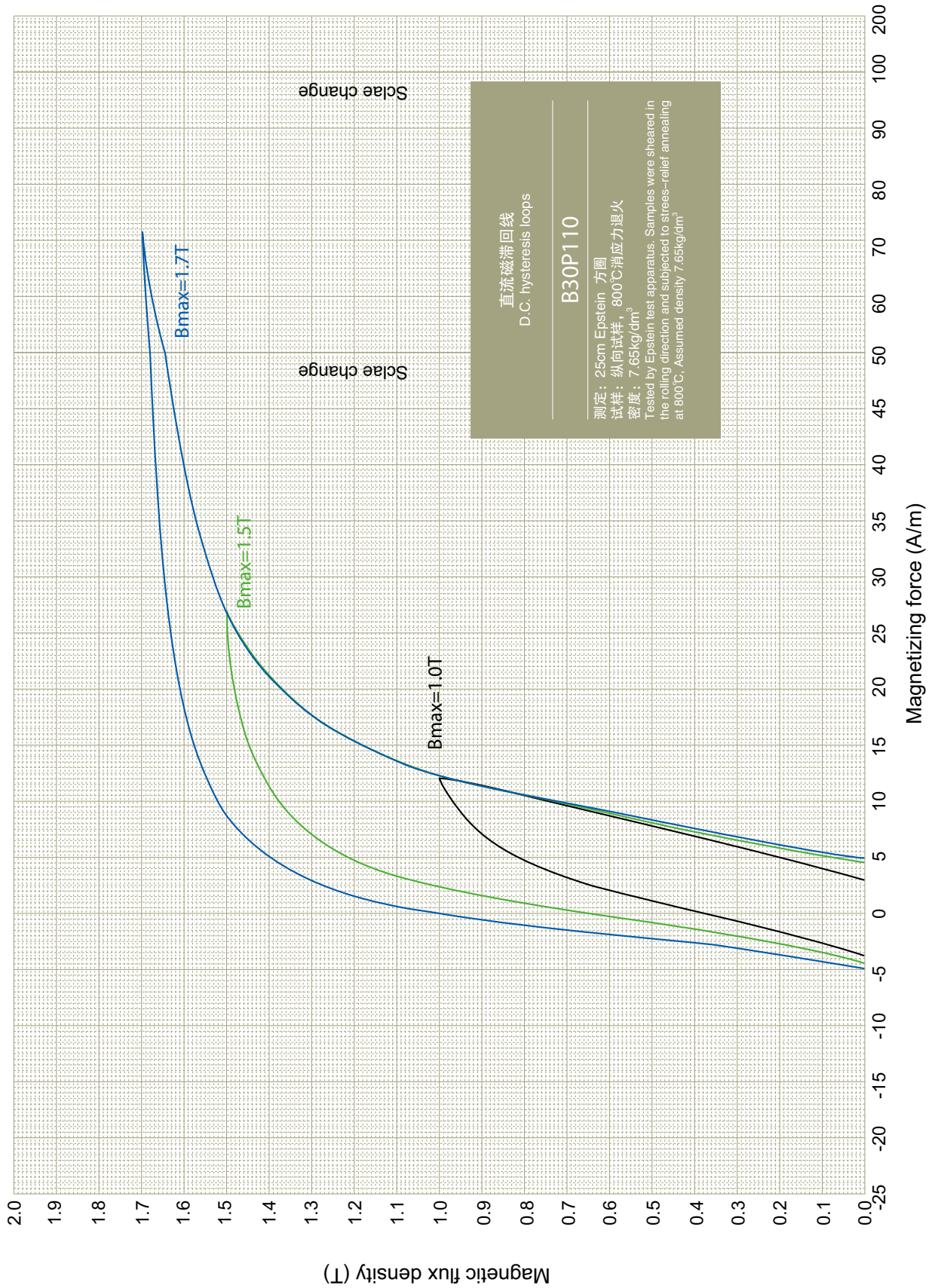


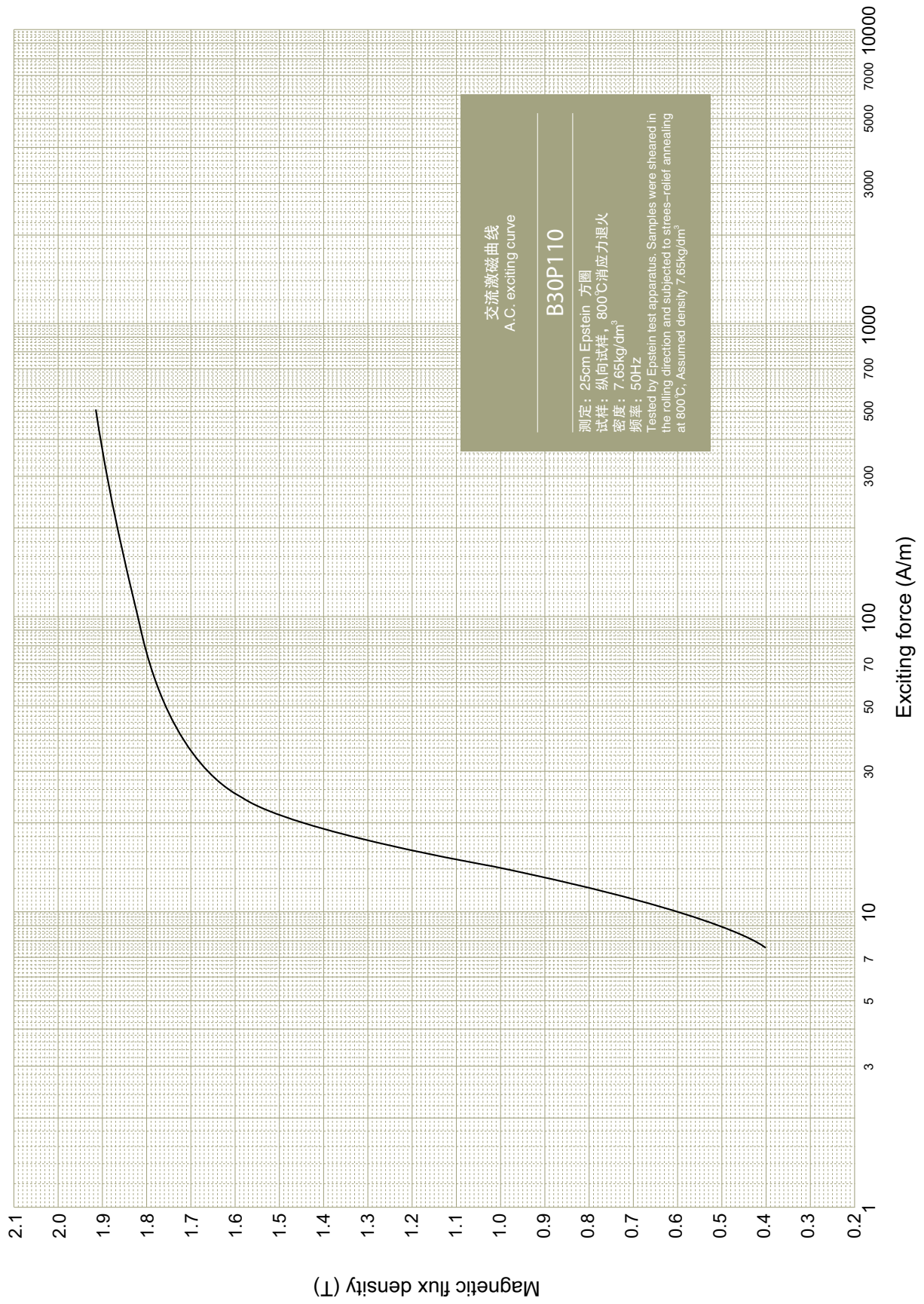
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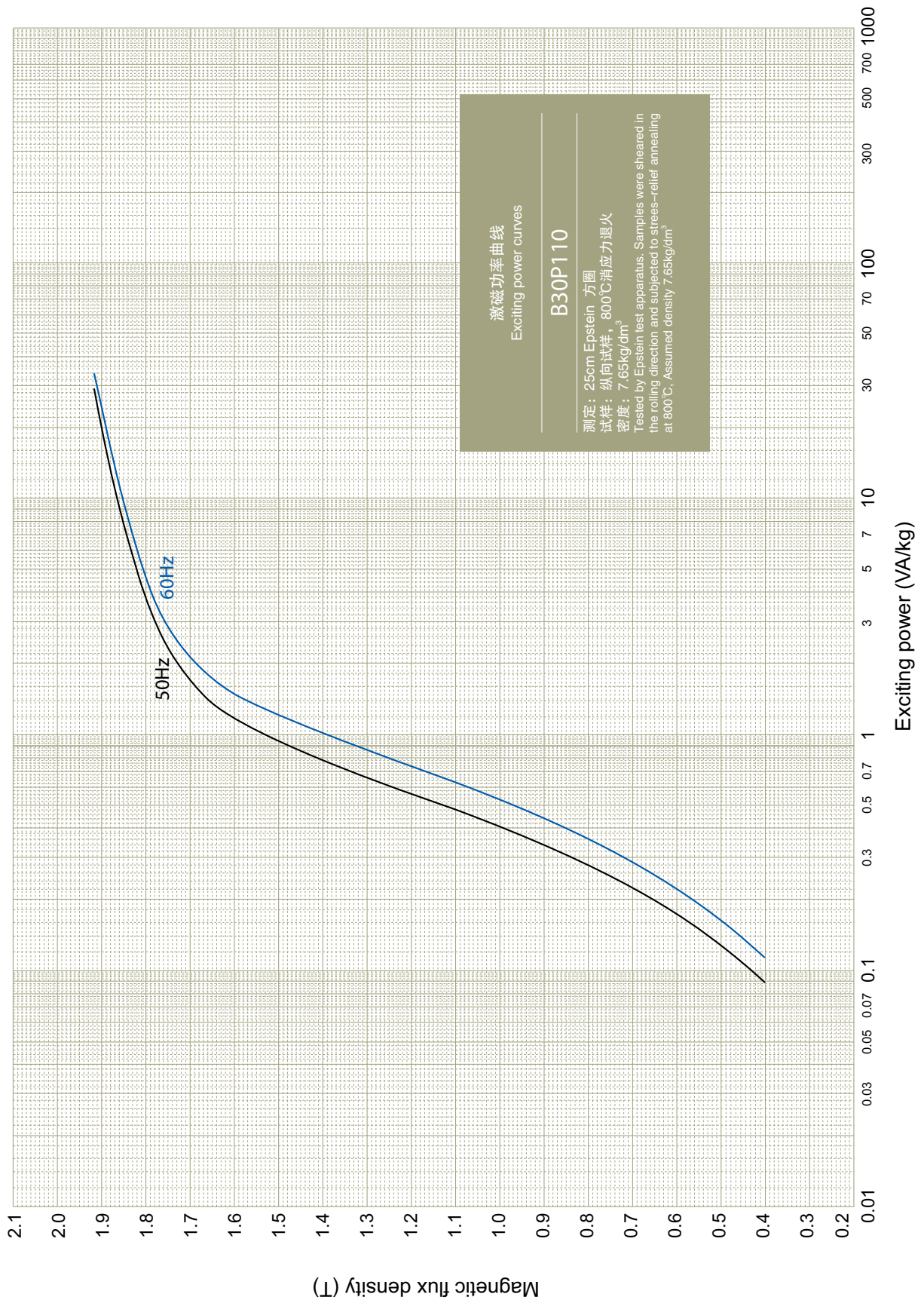


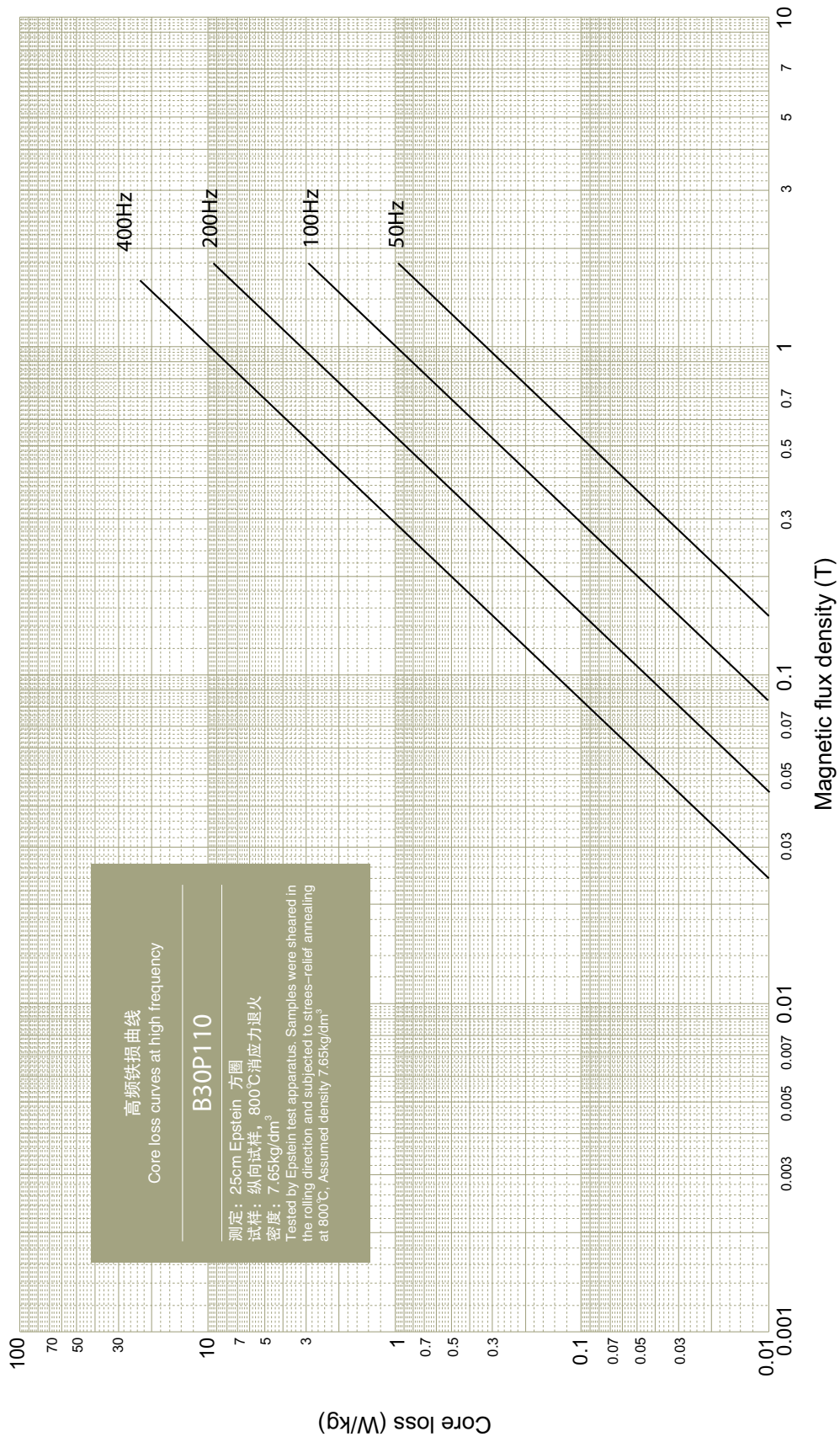


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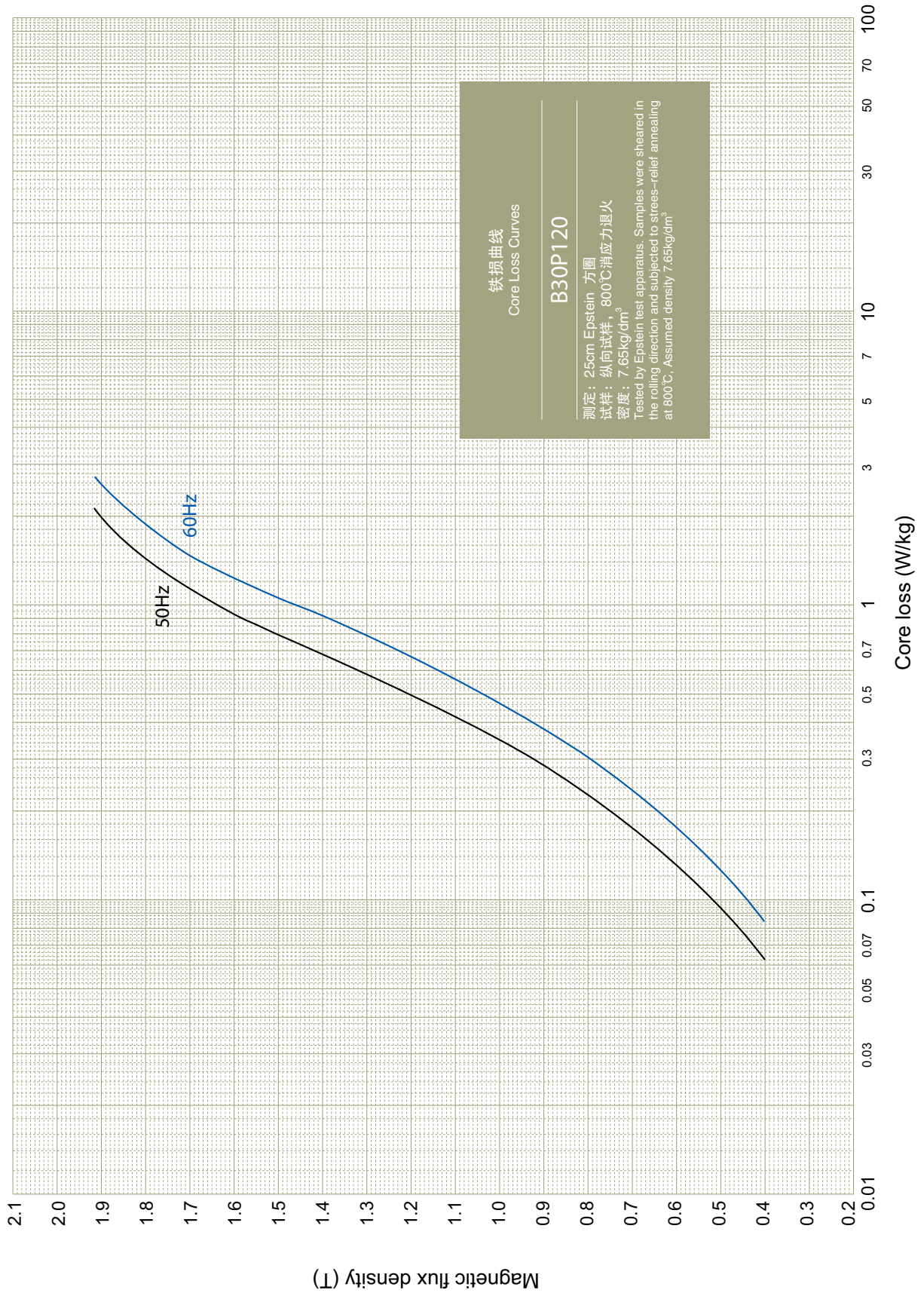


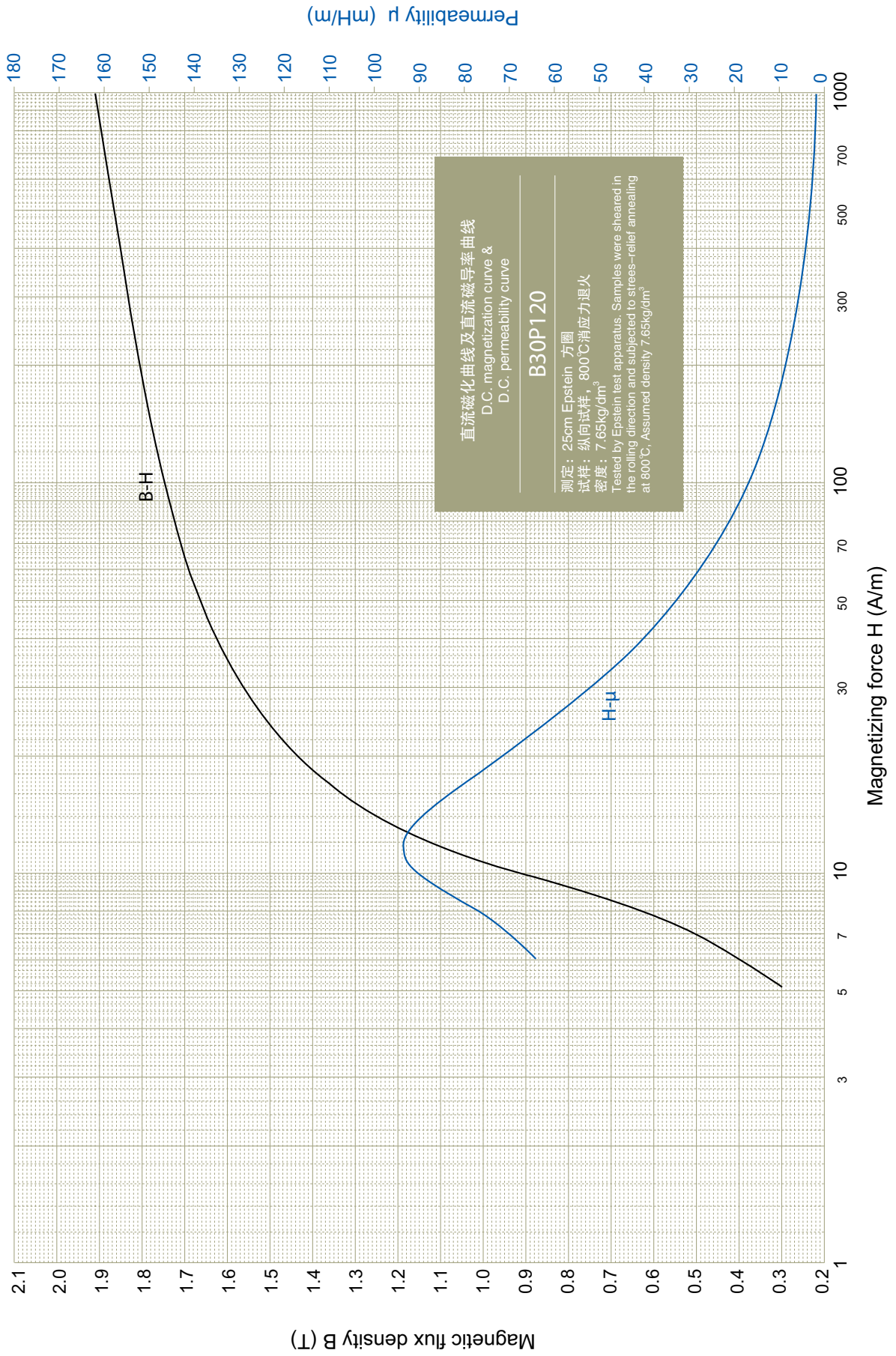


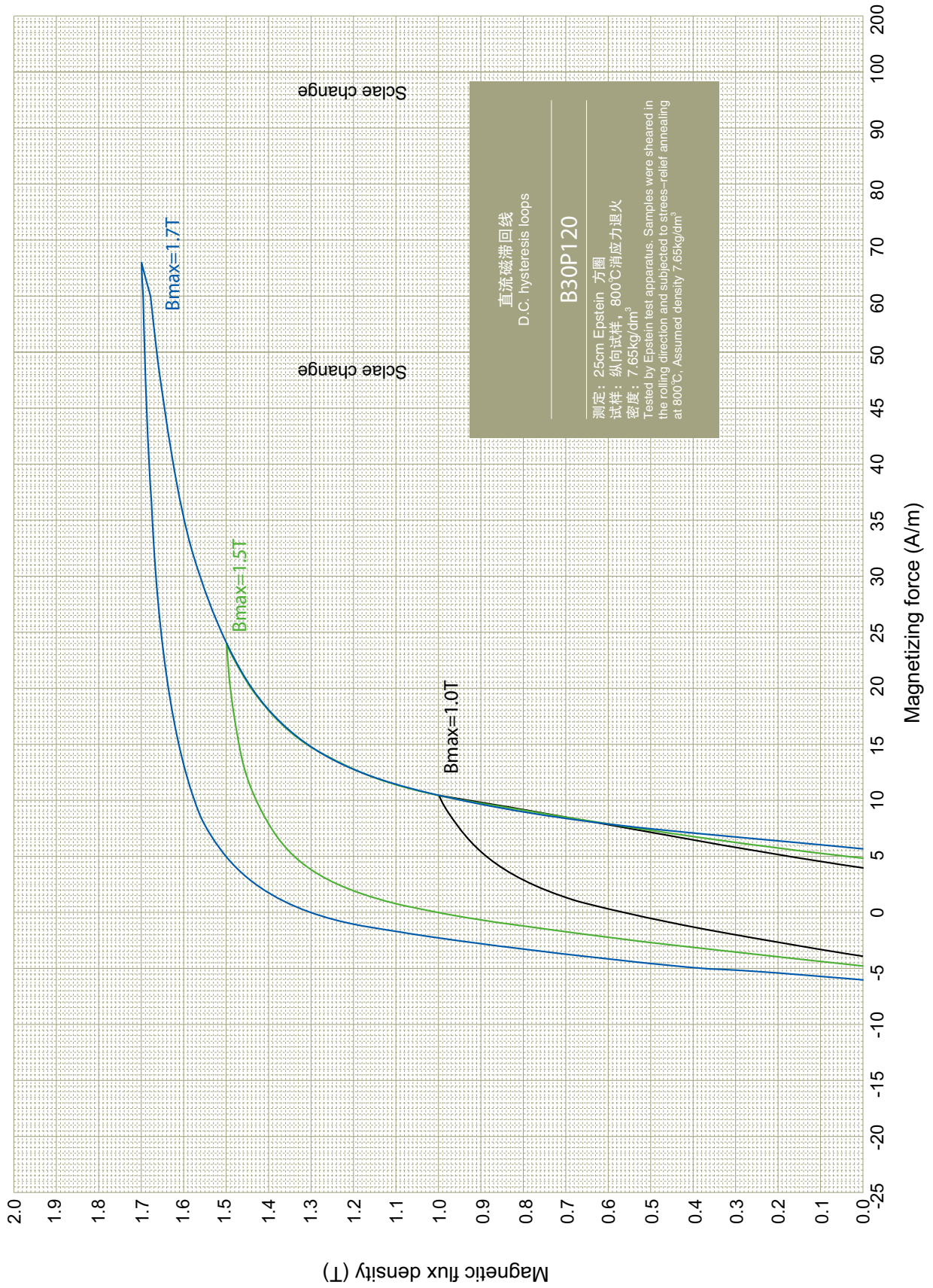


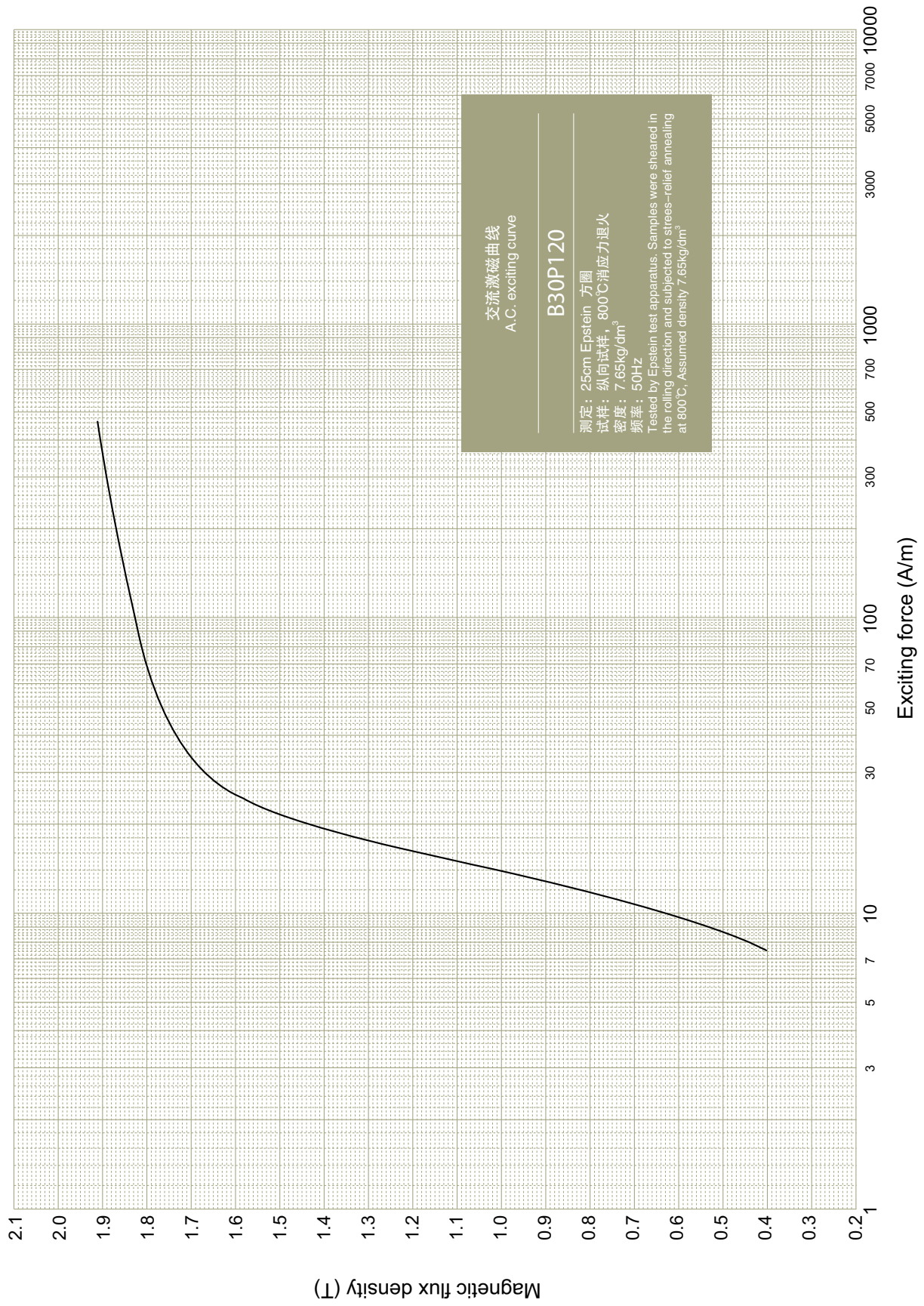


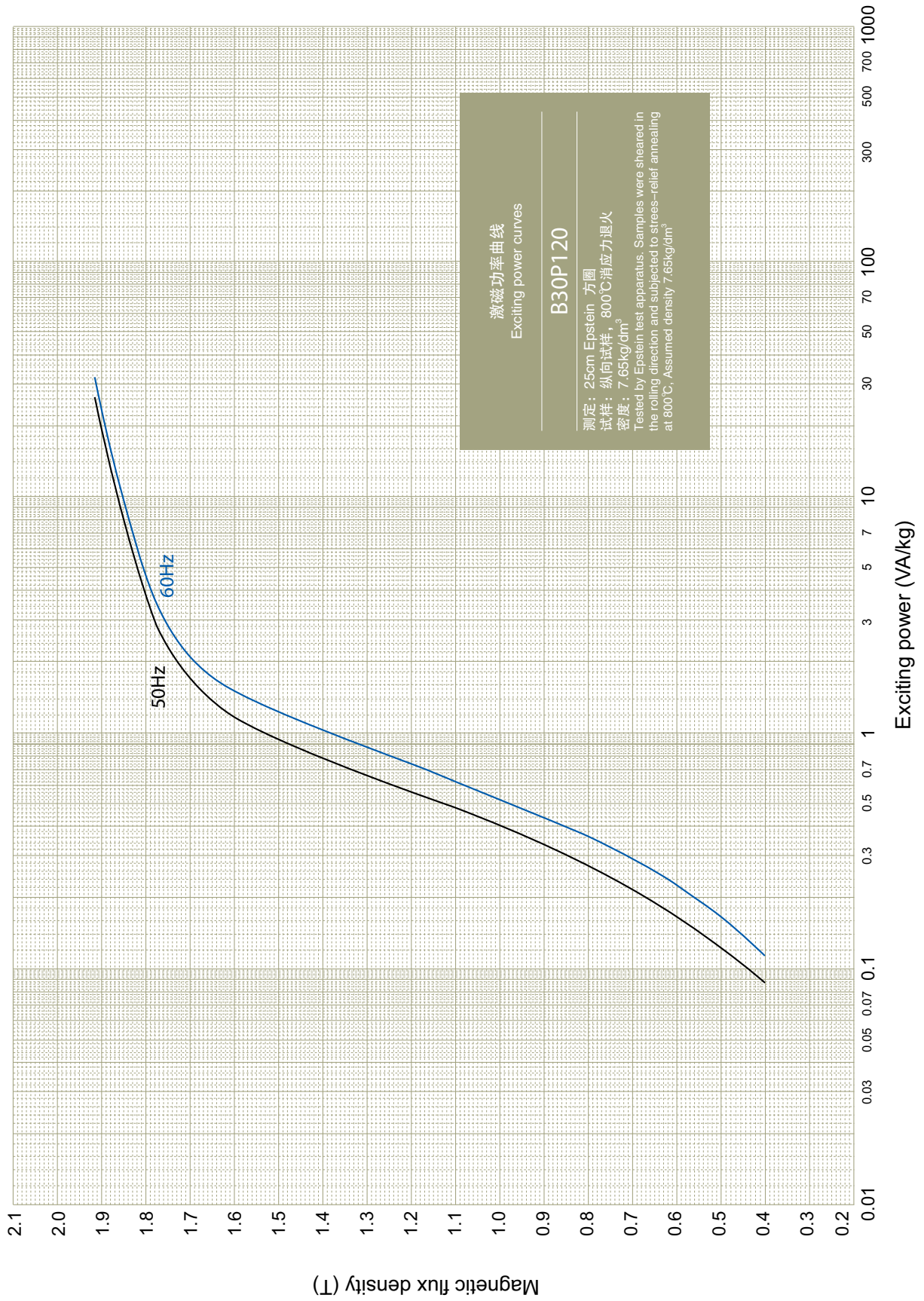
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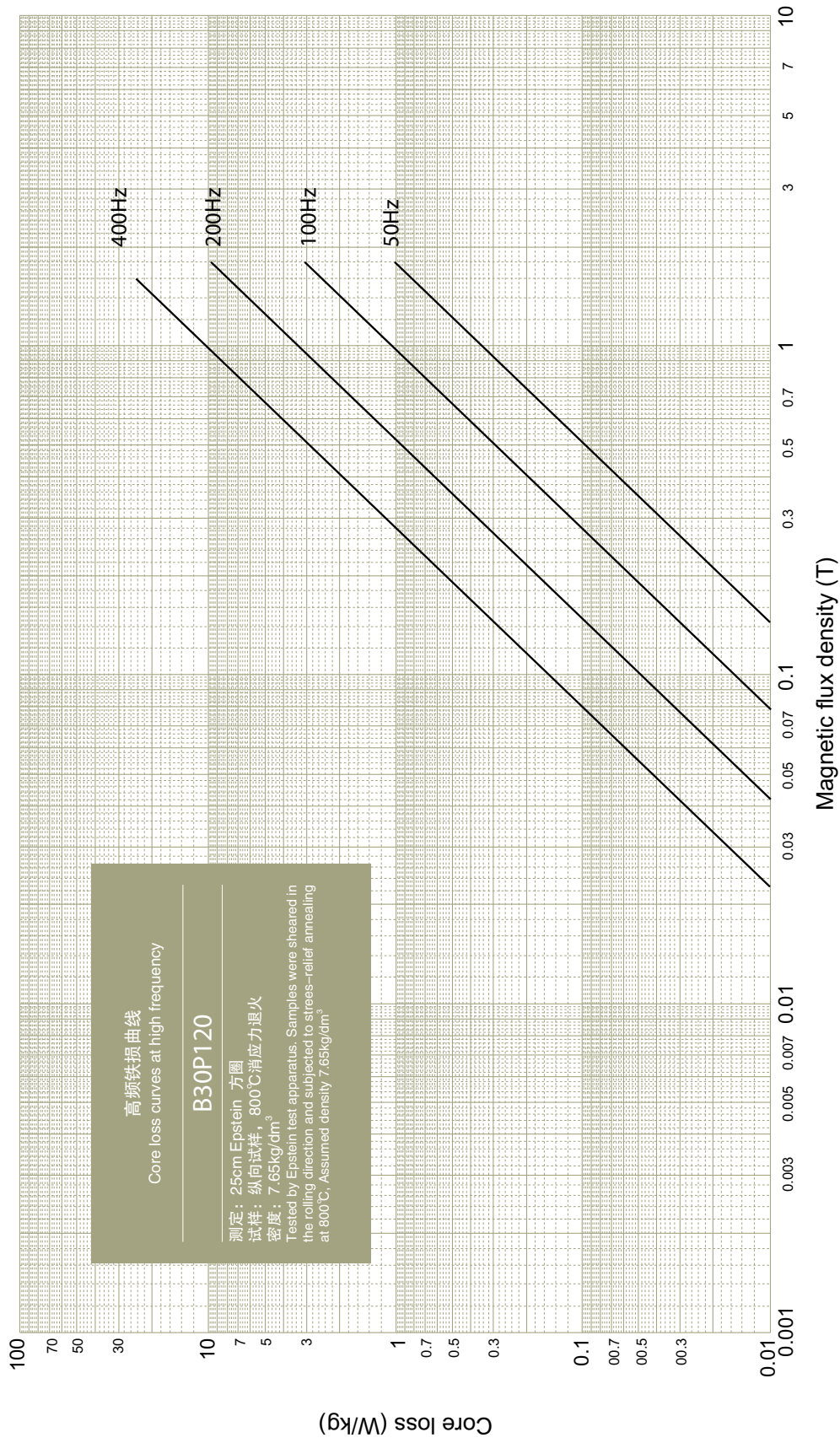












Technical Manual
of GO Silicon Steel Products





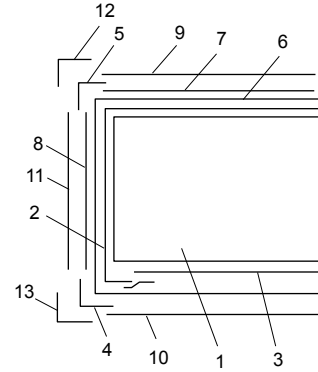
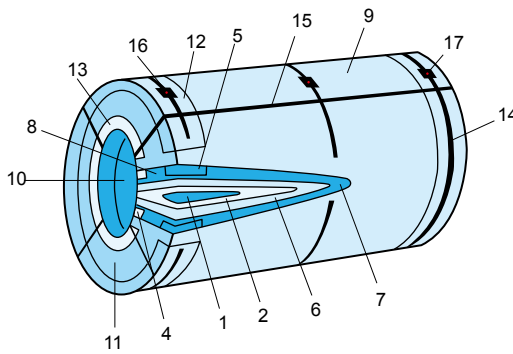
Service Guide 产品服务指南

- 79 宝钢取向硅钢牌号对照
CROSS REFERENCE OF BAOSTEEL GO SILICON STEEL DESIGNATION
- 81 包装与标签
PACKING AND LABELLING
- 82 销售合同
SALES CONTRACT
- 83 常用单位及换算表
UNITS COMMONLY USED AND CONVERSION TABLE

系列 Series	公称厚度 Thickness mm	宝钢 Baosteel	武钢 WISCO	新日铁 NSC	JFE	Congent	蒂森 克虏伯 TKS	浦项 Posco	新利佩 茨克 NI&SCo	阿姆可 AK	
普通型 Common type	0.23		23Q105								
		B23G110	23Q110	23Z110			C110-23		NV23S-110		
			23Q115								
		B23G120					M120-23S5	C120-23		NV23S-120	M-3
							M127-23S5	C127-23		NV23S-127	
	0.27								27PG110	NV27S-110	
		B27G120	27Q120	27Z120	27JG120			C120-27	27PG120	NV27S-120	M-4
		B27G130	27Q130	27Z130	27JG130	M130-27S5	C130-27	27PG130	NV27S-130	M-4	
			27Q140				M140-27S5	C140-27		NV27S-140	
	0.30								30PG110		
		B30G120	30Q120	30Z120	30JG120				30PG120	NV30S-120	
		B30G130	30Q130	30Z130	30JG130			C130-30	30PG130	NV30S-130	
		B30G140	30Q140	30Z140	30JG140	M140-30S5	C140-30	30PG140	NV30S-140	M-5	
			30Q150				M150-30S5	C150-30			M-5
			30Q160								
			30Q180								
		30Q220									
	0.35	B35G135	35Q135	35Z135	35JG135					NV35S-130	
		B35G145	35Q145	35Z145	35JG145	M150-35S5	C150-35	35PG145	NV35S-145	M-6	
		B35G155	35Q155	35Z155	35JG155	M165-35S5	C165-35	35PG155		M-6	

系列 Series	公称厚度 Thickness mm	宝钢 Baosteel	武钢 WISCO	新日铁 NSC	JFE	Congent	蒂森 克虏伯 TKS	浦项 Posco	新利佩 茨克 NI&SCo	阿姆可 AK	
高磁感型 High induction type	0.23	B23P090	23QG090	23ZH090	23JGS090 23JGH090	M90-23P5	H090-23	23PH090			
		B23P095	23QG095	23ZH095	23JGS095 23JGH095		H095-23	23PH095			
		B23P100	23QG100	23ZH100	23JGH100	M100-23P5	H100-23	23PH100		H-0	
				23ZH110							
	0.27							H090-27			
		B27P095	27QG095	27ZH095				H095-27	27PH095		
		B27P100	27QG100	27ZH100	27JGH100	M103-27P5	H103-27	27PH100	NV27P-100		
		B27P110	27QG110	27ZH110	27JGH110						H-1
	0.30	B30P100	30QG100	30ZH100	30JGH100				30PH100		
		B30P105	30QG105	30ZH105	30JGH105	M105-30P5	H105-30	30PH105	NV30P-105		
		B30P110	30QG110	30ZH110	30JGH110	M111-30P5	H111-30				
		B30P120	30QG120	30ZH120	35JGH120	M117-30P5					
	0.35	B35P115		35ZH115	35JGS115 35JGH115				35PH115		
		B35P125		35ZH125	35JGS125 35JGH125				35PH125		
		B35P135		35ZH135	35JGH135				35PH135		
	磁畴细化高磁感型 Domain refined high induction type	0.23	B23R080		23ZDKH80 23ZDMH80	23JGSD80			23PHD080		
B23R085				23ZDKH85 23ZDMH85	23JGSD85		H085-23	23PHD085			
B23R090				23ZDKH90 23ZDMH90	23JGSD90		H090-23			H-0DR	
0.27		B27R090		27ZDKH90 27ZDMH90	27JGSD90		H090-27	27PHD090			
		B27R095		27ZDKH95 27ZDMH95	27JGSD95			27PHD095		H-1DR	

卧式卷包装/Horizontal packing



- | | | |
|----------|----------|----------|
| 1. 钢卷 | 2. 外周防锈纸 | 3. 内芯防锈纸 |
| 4. 纸内护角 | 5. 纸外护角 | 6. 塑料套 |
| 7. 外周平板纸 | 8. 圆护平板纸 | 9. 外周包板 |
| 10. 内周护板 | 11. 铁圆护板 | 12. 铁外护角 |
| 13. 铁内护角 | 14. 周向捆带 | 15. 径向捆带 |
| 16. 锁扣垫片 | 17. 锁扣 | |
- 备注：根据要求可加井字架。
- | | | |
|---|---|-----------------------------------|
| 1-steel coil; | 2-external peripheral rust-proof paper; | 3-inner core rust-proof paper; |
| 4-paper inner corner guard; | 5-paper external corner guard; | 6-plastic sleeve; |
| 7-external peripheral corrugated paper; | 8-round corrugated paper guard; | |
| 9-external peripheral wrapping plate; | 10-inner peripheral guard plate; | 11-iron round cover; |
| 12-iron external corner guard; | 13-iron inner corner guard; | 14-circumferential banding strip; |
| 15-radial banding strip; | 16-shim for lock; | 17-lock |

		宝山钢铁股份有限公司 BAOSHAN IRON & STEEL CO., LTD.		宝钢分公司 BAOSTEEL BRANCH			
品名 PRODUCT				日期 DATE			
标准 SPECIFICATION				计重方式 WEIGHT ARKER			
规格 SIZE		净重 kg NET WEIGHT		毛重 kg GROSS WEIGHT			
(规格条码打印处)		(净重条码打印处)		(毛重条码打印处)			
捆包号 COIL/PACK NO.		颜色 COLOR					
(捆包号条码打印处)							
用户合同号 CONTRACT NO.		张数 SHEETS	炉号 HEAT NO.	涂层种类 COATING TYPE			
到站港 DESTINATION							
收货单位 PURCHASER							
(捆包号条码打印处)		库号		批号			

上海市宝山区同济路1800号 邮编: 201900
 订货电话: 021-56788213 用户服务热线: 021-26648888
 开户名称: 宝山钢铁股份有限公司销售处
 开户行: 工行宝钢国贸分理处宝钢专柜
 帐号: 021813-03248450

宝山钢铁股份有限公司 钢铁产品销售合同

合同号	履约地点	结算方式	交货季	合同总重量(吨)	页次	签约日期	变更日期	需方代表	日期	供方代表	日期
需方	名称				编号	电话	需方盖章处		供方盖章处		
	地址				邮编	传真					
	银行				帐号						

合同明细项目

序号	产品描述/规格(mm)	件重范围(吨)	交货期	订货量(吨)	单价(元/吨)	交货方式	需方指定收货单位
收货地点、到站/港							

供需双方约定

- 技术条件按合同注明之产品技术标准执行,如双方对此有特殊约定,则双方将另行协商并签订技术协议,并在本合同中注明,技术协议为本合同附件。
- 价格及加价率按国家规定执行,无规定者按供方规定执行。供方厂内装运费按供方规定标准执行。
- 计量方法无特殊规定者,均按合同注明之产品技术标准执行。
- 交货数量尾差通常为±5%,专用料为±10%,但受盒、卷、盘的限制,可不大于一盒、一卷、一盘。
- 交货地点:供方指定生产厂仓库。
- 需方如需变更或解除合同,应来人以书面形式提出。若供方同意,需方应按宝钢《关于合同变更或解除的收费规定》交纳变更或解除费后,方可办理手续。若供方不能给予满足,则按原合同执行。需方不得以任何理由拒收货物或拒付货款。
- 交货方式为自提者(含洽运市场内,需方与运输单位签订的洽运合同),需方在接到供方指定出厂管理部门提货通知后,二十四小时内到供方指定处办理提货手续,并在提货单所规定的时间内提完货物。提货过程中供需双方必须共同遵守《宝钢产成品出厂运输管理制度》和《宝钢产成品出厂装运、仓储技术标准》。
- 交货方式为代运者,由供方指定出厂管理部门按合同规定的交货期、交货方式、收货地点及需方指定的收货单位,将货物组织出厂。需方按实际发生的杂费承担费用。因不可抗力致使供方无法按时将货物运达合同规定地点的与供方违约无涉。供方代运货物参加国家运输保险,保险费由需方承担,发生运输货损由供方协助需方向保险公司索赔。
- 钢支架租金与押金按供方有关钢支架租用的规定办理,支架往返的运费由需方承担。
- 其余未尽条款按经济合同法和国家颁布的其他有关法规办理。

说 明

- 合同单一式三联,第一联为备用联,第二联为合同联,由供方留存;第三联为用户联,交用户留存。
- 合同单正文右上方为供需双方代表签字及盖章处。本合同经双方签字盖章后生效。
- “合同明细项目”为本合同之各项明细内容。以字母序号起行为产品描述,依次为品名、钢种、技术标准、特殊说明及产品其他技术要求,以数字序号起行依次打印规格、件重范围、交货期、订货量、单价、老合同号、运输方式、需方指定收货单位,次行打印收货地点或到站/港。

敬告用户

宝钢坚持可持续发展思想,贯彻ISO14000环境管理体系标准,确定了宝钢环境方针和环境承诺。现将有关内容告知用户,希望互相合作,沟通信息。

宝钢环境方针:

控污染、节资源、兴利用、建设生态型钢铁企业。

宝钢环境承诺主要内容:

从原燃材料、设备、物资的采购,到钢铁冶炼、产品制造、成品外运全过程控制污染,各阶段努力减轻环境负荷。
 不断改进工艺,节省资源、能源,深入开展三废综合利用,实现副产品资源化,推进清洁生产。
 严格遵守国家和地方的各项环保法律、法规,以严于国家、地方的宝钢环保标准进行内控。
 全员行动建设生态型钢铁企业,与国际社会合作,促进环境保护发展。

特性项目 Item		单位 Unit		符号 Sign	
长度	(Length)	米	(Meter)		m
质量	(Mass)	千克	(Kilogram)		kg
时间	(Time)	秒	(Second)		s
电流	(Electric current)	安培	(Ampere)		A
密度	(Density)	千克/立方米	(Kilogram Per Steres)		kg/m ³
电压	(Votage)	伏特	(Volt)		V
电阻	(Electric resistance)	欧姆	(Ohm)		Ω
磁通	(Magnetic flux)	韦伯	(Weber)		Wb
磁通密度	(Magnetic flux density)	特斯拉	(Tesla)		T
磁场强度	(Magnetic field strength)	奥斯特	(Oersted)		Oe
铁损	(Core loss)	瓦特/千克	(Watt Per Kilogram)		W/kg
频率	(Frequency)	赫兹	(Hertz)		Hz
功率	(Power)	瓦特	(Watt)		W
电感	(Inductance)	亨利	(Henry)		H

单位 Units	初值 Multiply	倍数 by	结果 to obtain
磁场强度 Magnetizing Force	奥斯特	Oersted(Oe)	7.985 × 10 安培/米 Ampere per meter(A/m)
	奥斯特	Oersted(Oe)	2.021 安培/英寸 Ampere per inch(A/in)
	安培/米	Ampere per meter(A/m)	1.257 × 10 ⁻² 奥斯特 Oersted(Oe)
	安培/米	Ampere per meter(A/m)	2.540 × 10 ⁻² 安培/英寸 Ampere per inch(A/in)
	安培/英寸	Ampere per inch(A/in)	4.947 × 10 ⁻¹ 奥斯特 Oersted(Oe)
	安培/英寸	Ampere per inch(A/in)	3.937 × 10 安培/米 Ampere per meter(A/m)
	安培/厘米	Ampere per centimeter(A/cm)	10 ² 安培/米 Ampere per meter(A/m)
磁感 Magnetic Induction	特斯拉	Tesla(T)	10 ⁴ 高斯 Gauss(Gs)
	特斯拉	Tesla(T)	1 韦伯/平方米 Weber per square meter(Wb/m ²)
	高斯	Gauss(Gs)	10 ⁻⁴ 韦伯/平方米 Weber per square meter(Wb/m ²)
	高斯	Gauss(Gs)	6.452 磁通量/平方英寸 Lines per square inch (Line/in ²)
	韦伯/平方米	Weber per square meter(Wb/m ²)	10 ⁴ 高斯 Gauss(Gs)
	韦伯/平方米	Weber per square meter(Wb/m ²)	1 特斯拉 Tesla(T)
	韦伯/平方米	Weber per square meter(Wb/m ²)	6.452 × 10 ⁴ 磁通量/平方英寸 Lines per square inch (Line/in ²)
	磁通量/平方英寸	Lines per square inch (Line/in ²)	1.550 × 10 ⁻¹ 高斯 Gauss(Gs)
磁通量/平方英寸	Lines per square inch (Line/in ²)	1.550 × 10 ⁻⁵ 韦伯/平方米 Weber per square meter(Wb/m ²)	
铁损 Core Loss	瓦特/千克	Watt per kilogram(W/kg)	4.536 × 10 ⁻¹ 瓦特/磅 Watt per pound(w/lb)
	瓦特/磅	Watt per pound(W/lb)	2.204 瓦特/千克 Watt per kilogram(W/kg)
磁感 Permeability	CGS电磁单位	CGS electro-magnetic unit(emu)	1 高斯/奥斯特 Gauss per Oersted(G/Oe)
	CGS电磁单位	CGS electro-magnetic unit(emu)	1.257 × 10 ⁻⁶ 亨利/米 Henry per meter(H/m)
	CGS电磁单位	CGS electro-magnetic unit(emu)	1.257 × 10 ⁻⁶ 韦伯/安培-米 Weber per Ampere-meter(Wb/A-m)
	CGS电磁单位	CGS electro-magnetic unit(emu)	3.192 × 10 ⁻⁸ 韦伯/安培-英寸 Weber per Ampere-inch(Wb/A-in)
	CGS电磁单位	CGS electro-magnetic unit(emu)	3.192 磁通量/安培-英寸 Lines per Ampere-inch(Wb/A-in)
	亨利/米	Henry per meter(H/m)	7.958 × 10 ⁵ CGS电磁单位 CGS electro-magnetic unit(emu)
	亨利/米	Henry per meter(H/m)	7.958 × 10 ⁵ 高斯/奥斯特 Gauss per Oersted(Gs/Oe)
	亨利/米	Henry per meter(H/m)	2.540 × 10 ⁻² 韦伯/安培-英寸 Weber per Ampere-inch(Wb/A-in)
	亨利/米	Henry per meter(H/m)	2.540 × 10 ⁶ 磁通量/安培-英寸 Lines per Ampere-inch(Wb/A-in)
	亨利/米	Henry per meter(H/m)	
长度 Length	米	Meter(m)	3.937 × 10 英寸 Inch(in)
	英寸	Inch(in)	2.540 × 10 ⁻² 米 Meter(m)
	米	Meter(m)	3.281 英尺 Feet(ft)
	英尺	Feet(ft)	3.048 × 10 ⁻¹ 米 Meter(m)
重量 Weight	千克	Kilogram(kg)	2.204 磅 Pound(lb)
	磅	Pound(lb)	4.536 × 10 ⁻¹ 千克 Kilogram(kg)

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