

Rittal – The System.

Faster – better – everywhere.

特性曲线区域：温控系统



机箱机柜

配电组件

温控系统

IT基础设施

软件与服务

FRIEDHELM LOH GROUP



Rittal – The System.

Faster – better – everywhere.



机箱机柜

配电组件

温控系统

FRIEDHELM LOH GROUP

特性曲线区域

环境空气冷却装置

TopTherm 过滤器风扇, EMC 电磁兼容 风扇气流量 20/25 – 900 m ³ /h	4 – 7
TopTherm 过滤器风扇, 采用 EC 技术 风扇气流量 55 – 900 m ³ /h	8 – 9
TopTherm 顶装式风扇 风扇气流量 400 - 800 m ³ /h	10
顶装式风扇, 顶部排气 风扇气流量 360 m ³ /h	10
架装式风扇用于 482.6 mm (19") 风扇气流量 320/480 m ³ /h	11
离心风扇 风扇气流量 320 m ³ /h	11
空气 / 空气热交换器 TopTherm 比热功率 17.5 – 90 W/K	12

冷却器

半导体空调 有效冷却功率 100 W	13
壁挂式空调 TopTherm Blue e 有效冷却功率 300 – 2500 W (115/230 V, 1~, 400 V, 2~)	13 – 16
壁挂式空调 TopTherm Blue e, 薄型 有效冷却功率 1500 W (230 V, 1~, 400/460 V, 3~)	17
壁挂式空调 TopTherm Blue e 有效冷却功率 1000 – 4000 W (400/460 V, 3~)	18 – 20
顶装式空调 TopTherm Blue e 有效冷却功率 500 – 2000 W (115/230 V, 1~, 400 V, 2~)	21 – 23
顶装式空调 TopTherm Blue e 有效冷却功率 3000 – 4000 W (400/460 V, 3~)	24
空调模块设计, 冷却模块 Blue e 有效冷却功率 1500 – 2500 W (230 V, 1~, 400/460 V, 3~)	25 – 26

液体冷却

壁挂式空气 / 水热交换器 有效冷却功率 300 – 7000 W	27 – 36
顶装式空气 / 水热交换器 有效冷却功率 1875 – 4000 W	37 – 40
液体冷却柜 (LCP) 有效冷却功率 10 kW	41
冷水机 TopTherm 有效冷却功率 1 – 40 kW	42 – 43

机柜加热器

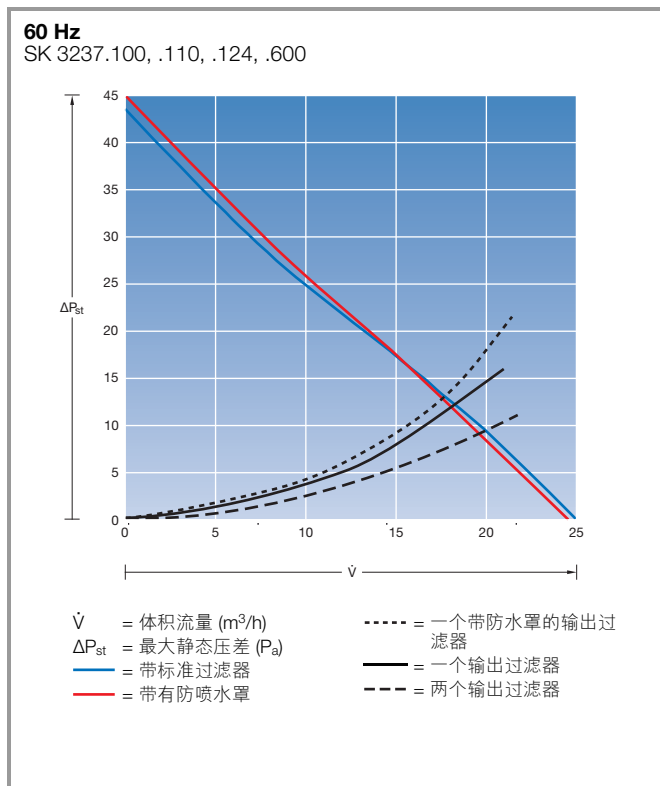
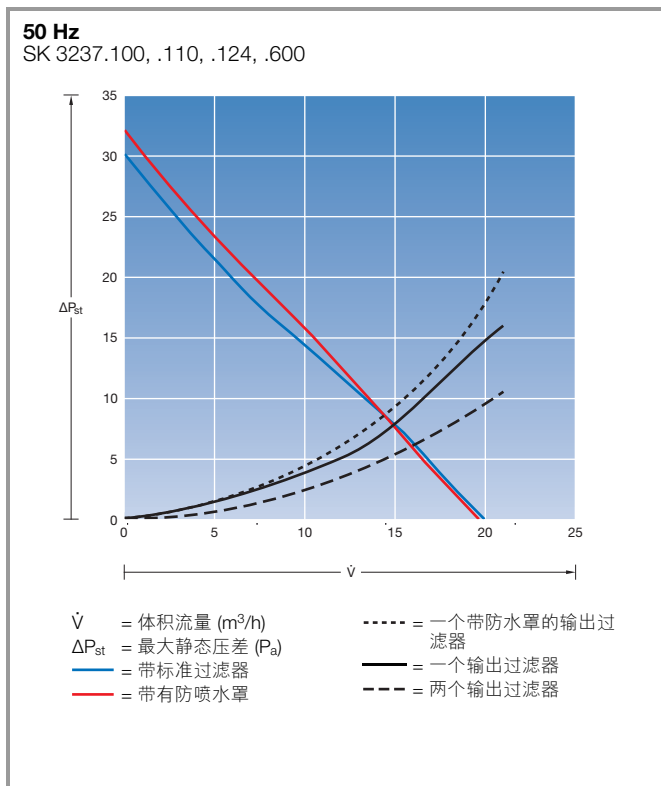
控制机柜加热装置, 无风扇 加热功率 8 – 150 W	44
控制机柜加热装置, 带风扇 加热功率 250 – 800 W	45



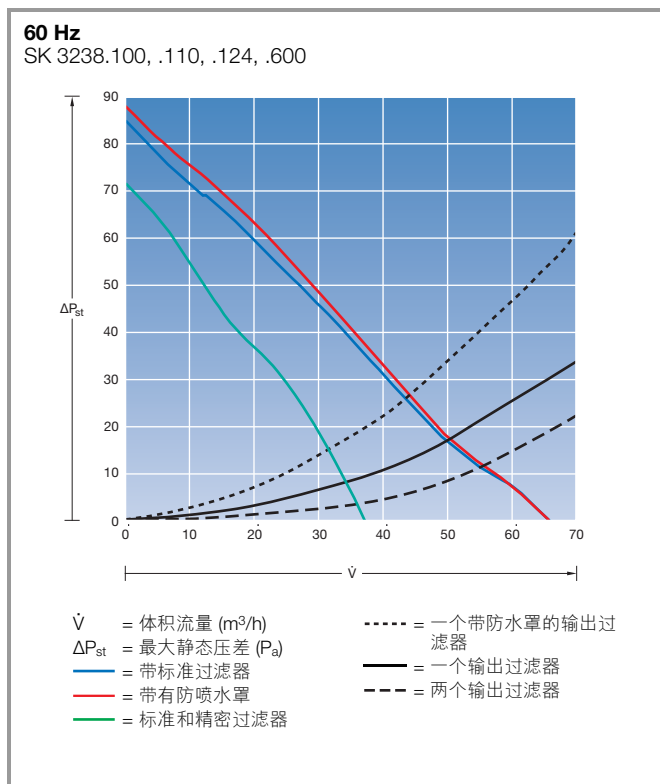
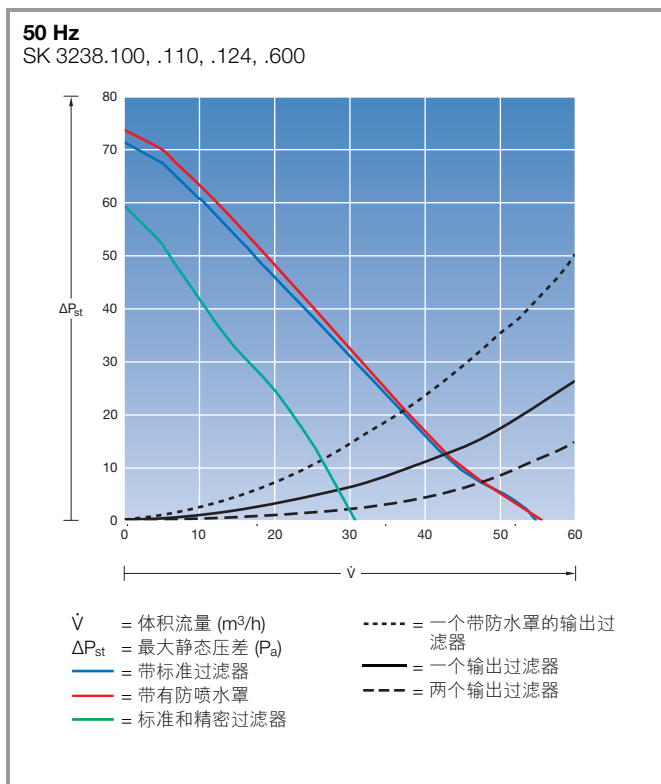
环境空气冷却装置

TopTherm 过滤器风扇, EMC 电磁兼容

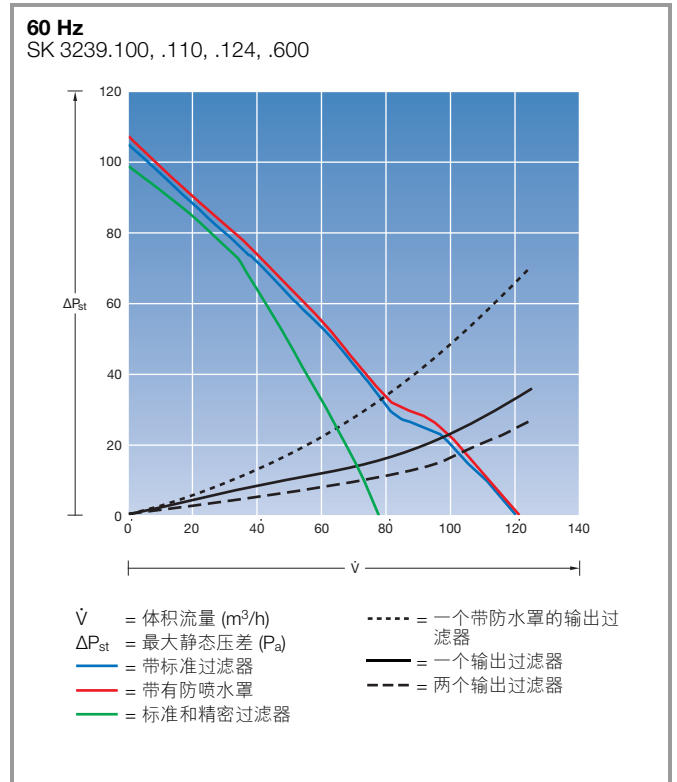
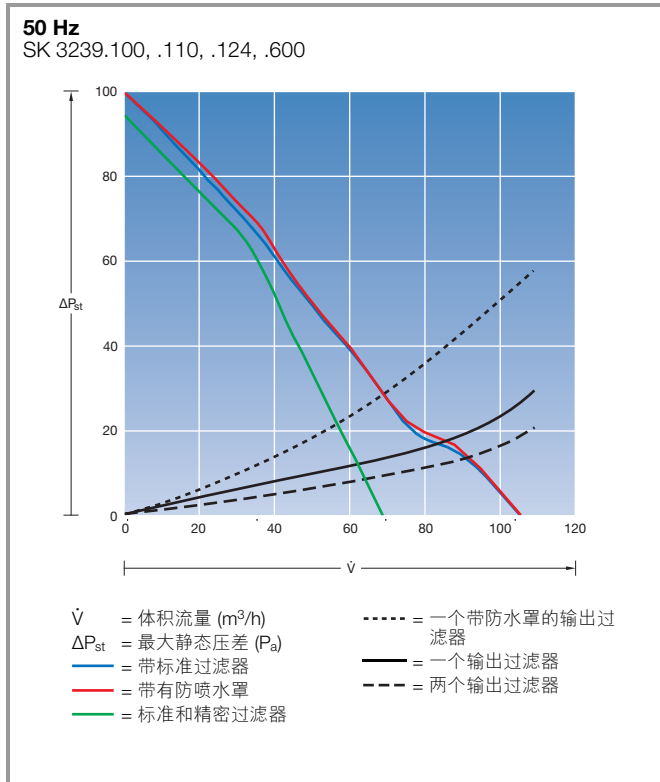
风扇气流量 20/25 m³/h



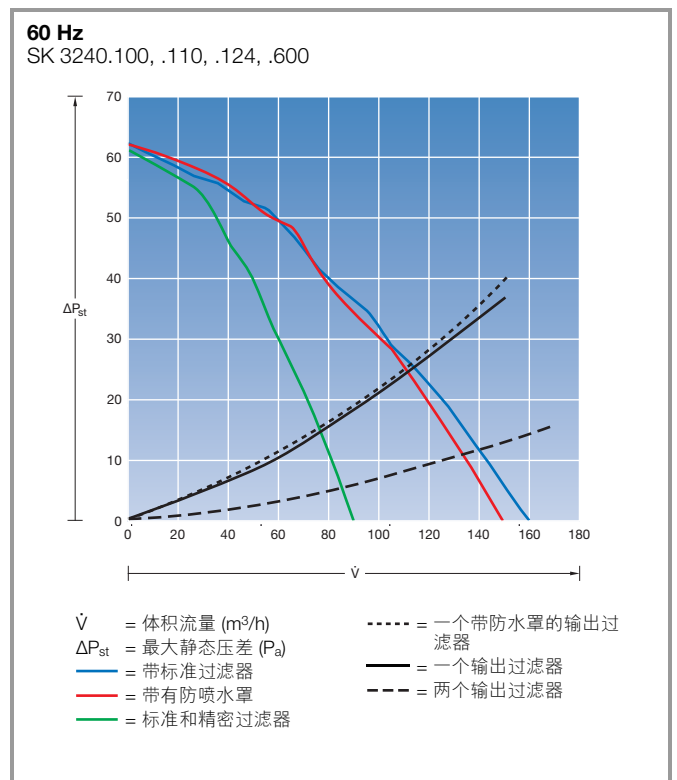
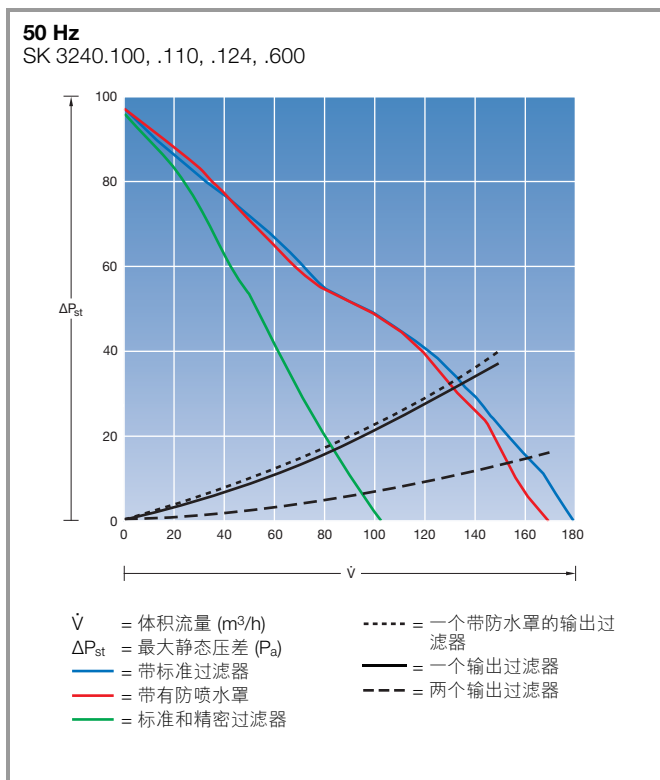
风扇气流量 55/66 m³/h



TopTherm 过滤器风扇, EMC 电磁兼容 风扇气流量 105/120 m³/h

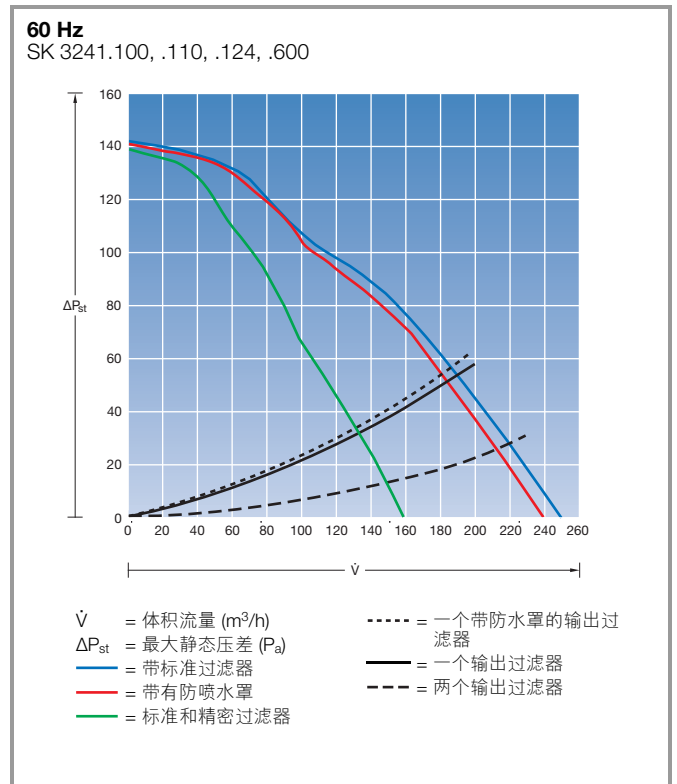
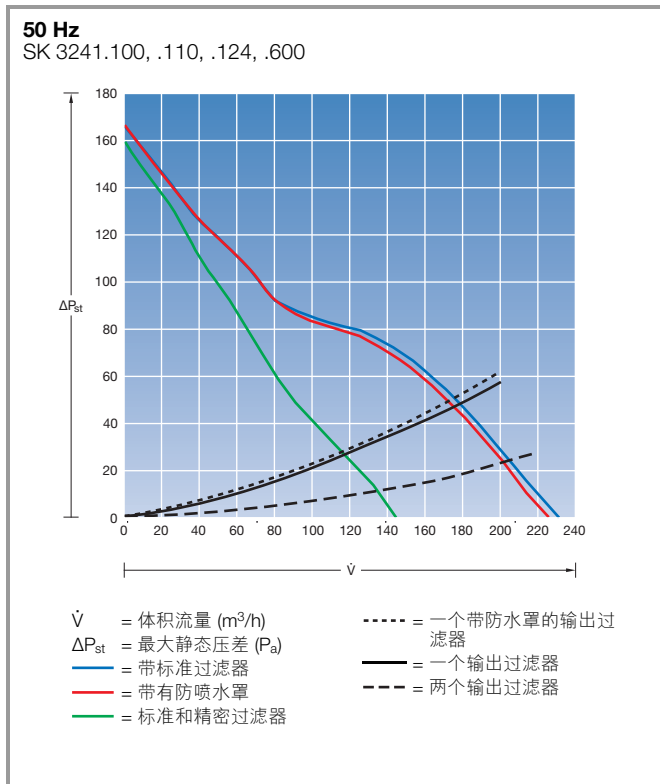


风扇气流量 180/160 m³/h

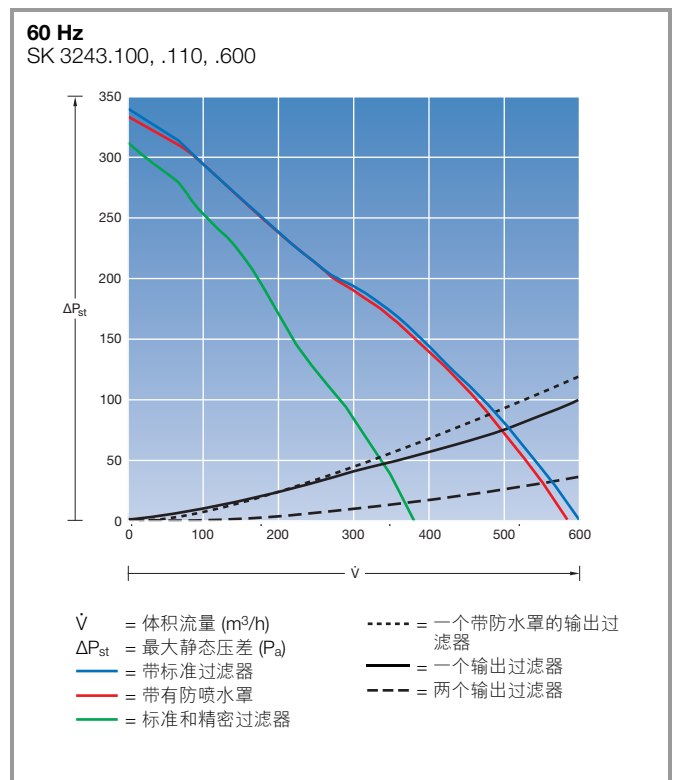
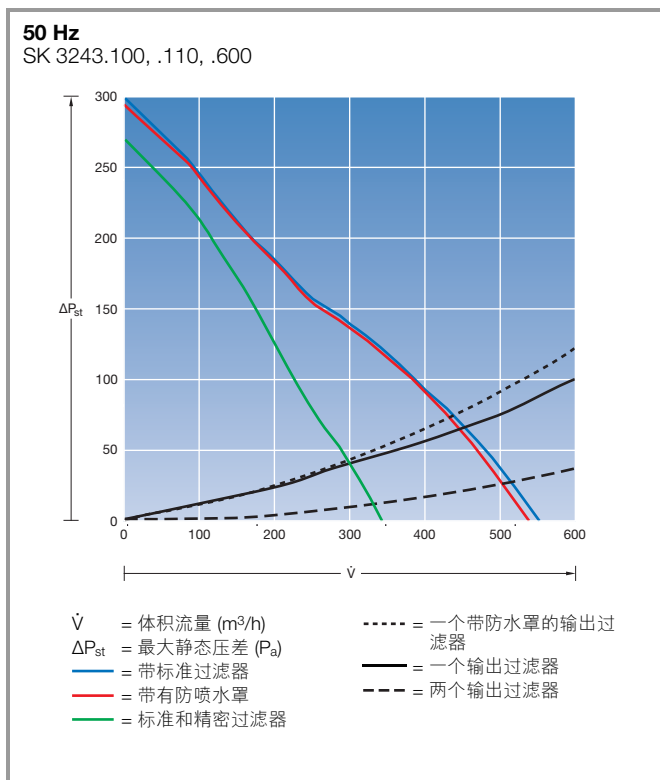


环境空气冷却装置

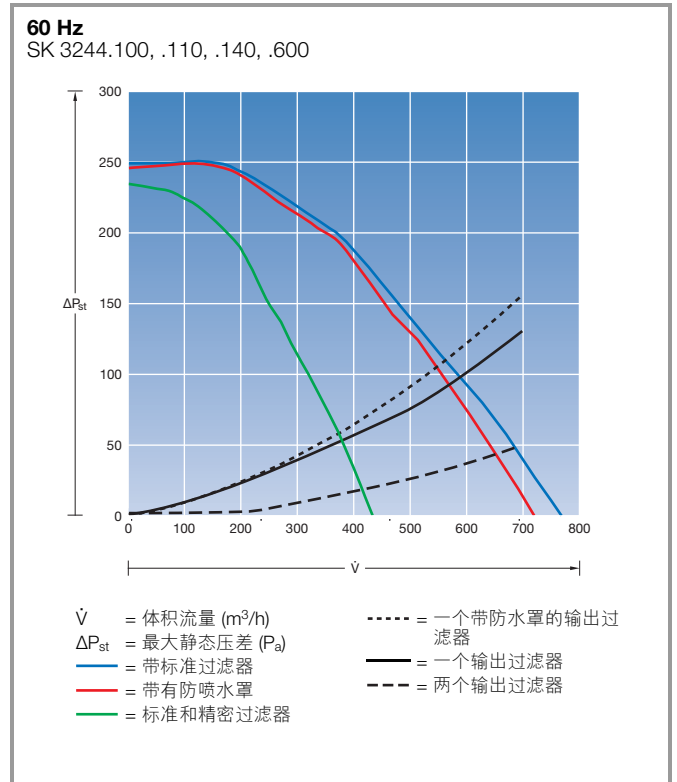
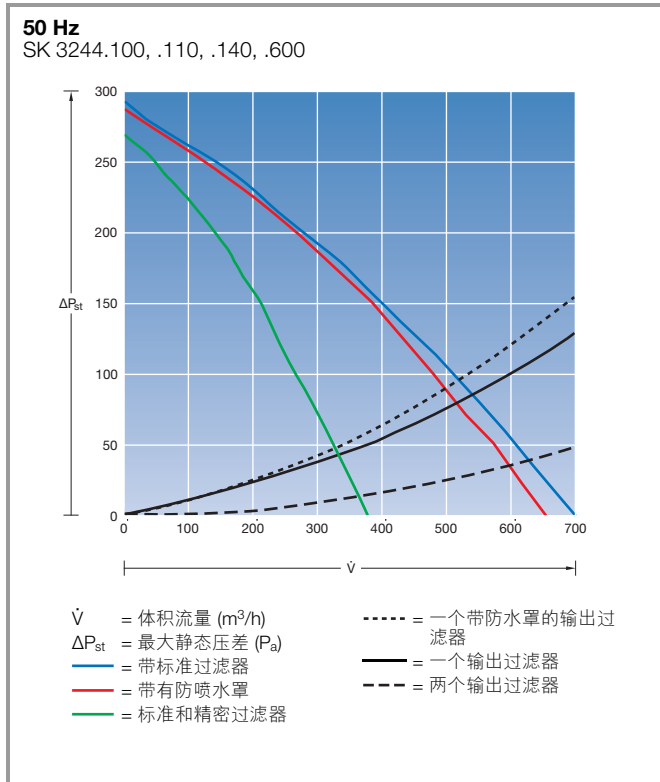
TopTherm 过滤器风扇, EMC 电磁兼容 风扇气流量 230/250 m³/h



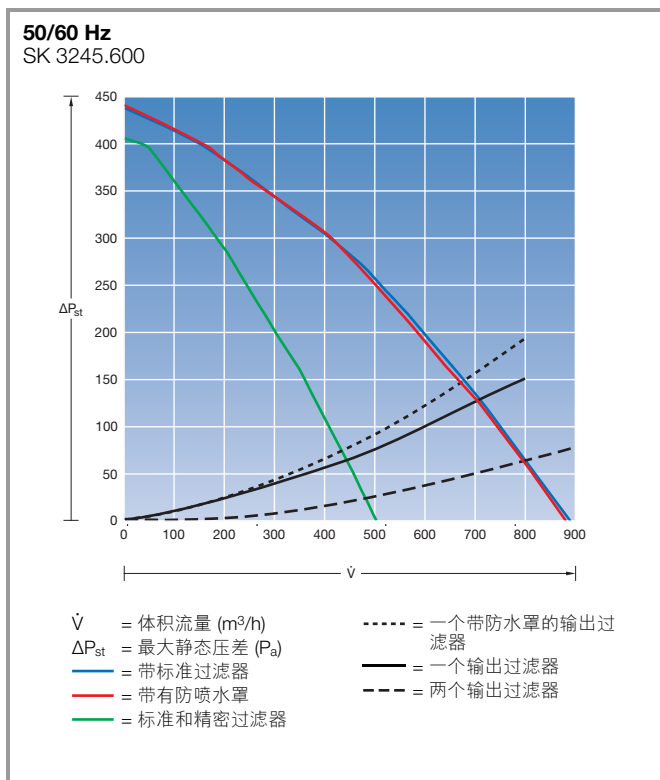
风扇气流量 550/600 m³/h



TopTherm 过滤器风扇, EMC 电磁兼容 风扇气流量 700/770 m³/h



风扇气流量 900 m³/h

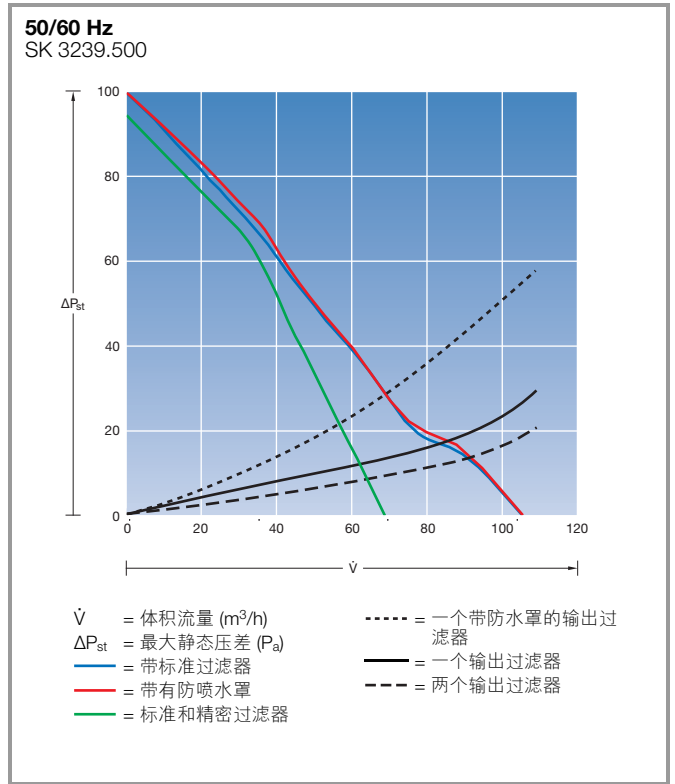
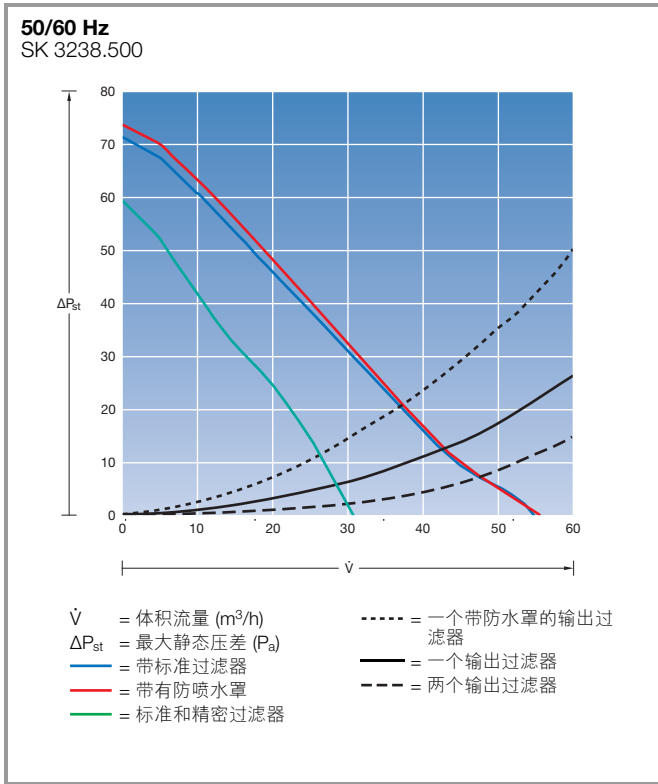


环境空气冷却装置

TopTherm 过滤器风扇，采用 EC 技术

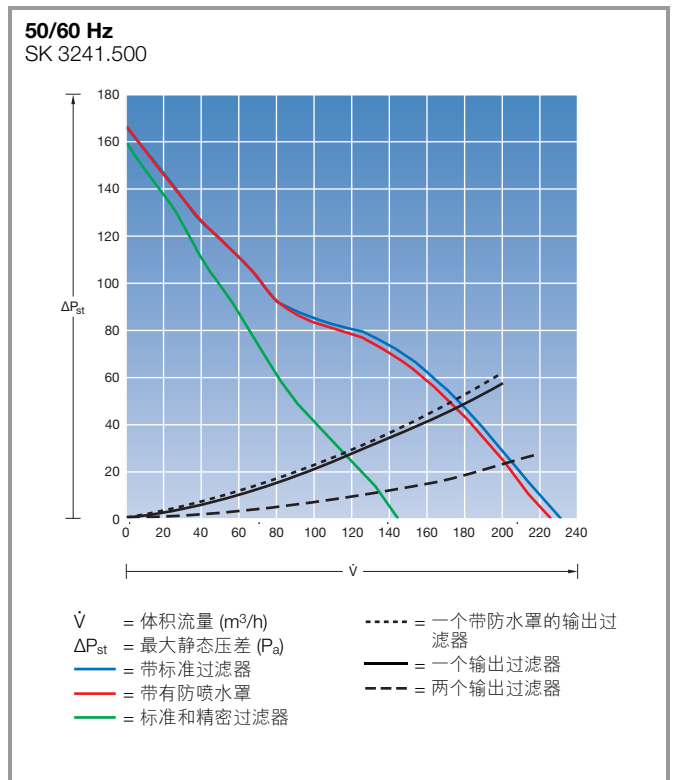
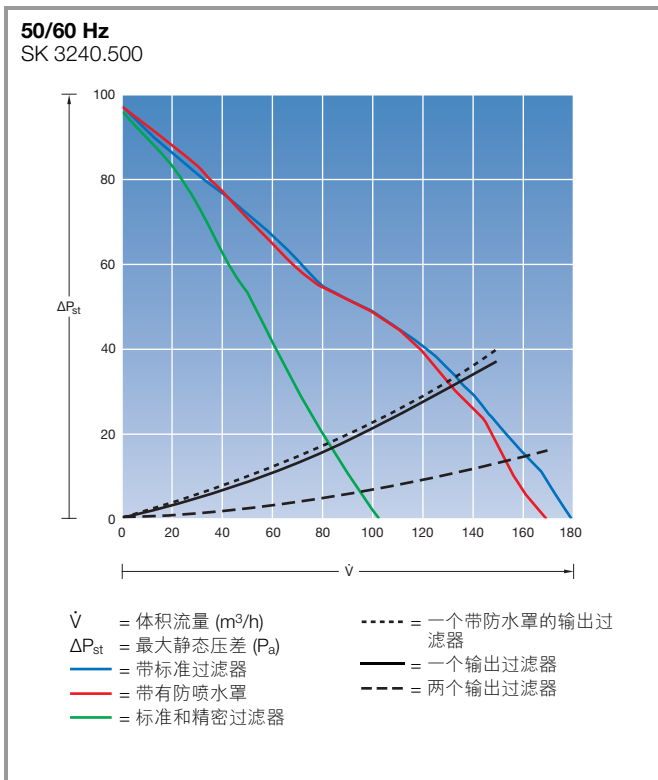
风扇气流量 55 m³/h

风扇气流量 105 m³/h



风扇气流量 180 m³/h

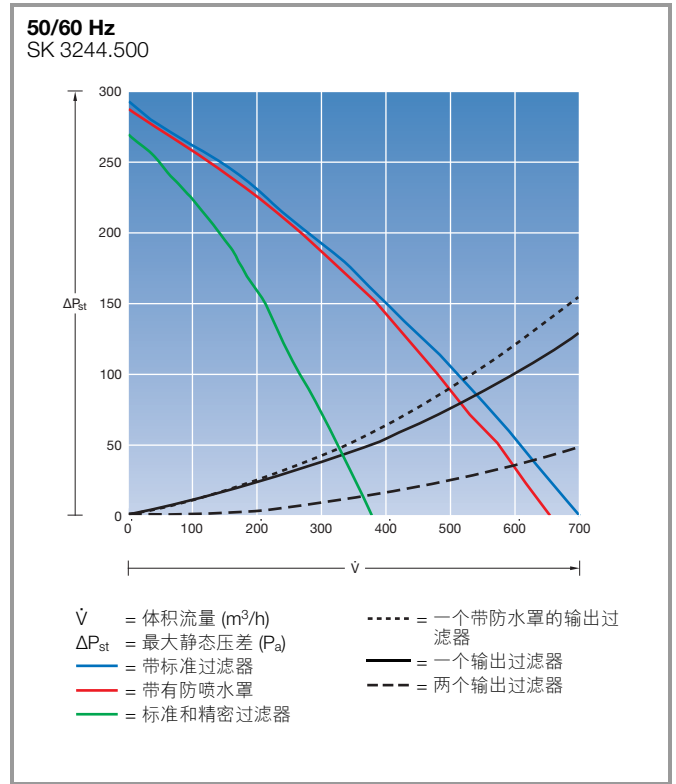
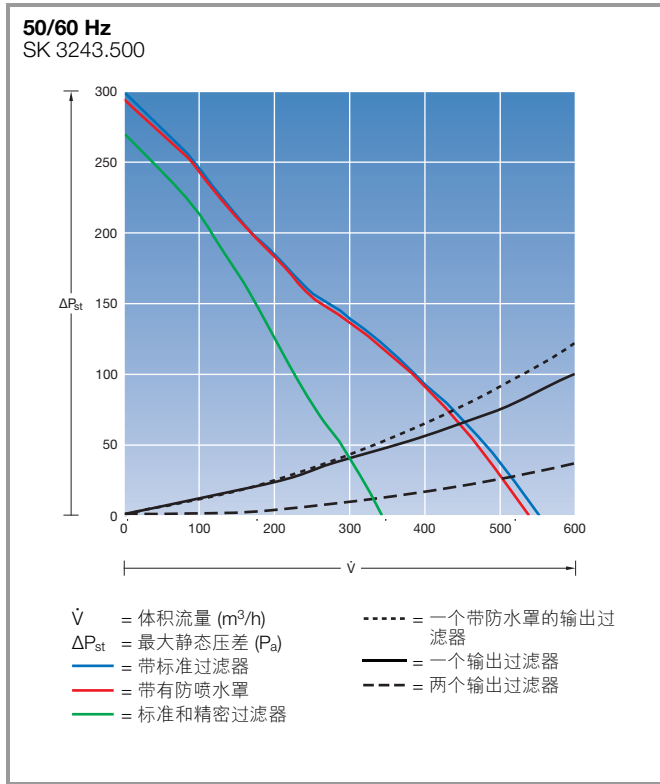
风扇气流量 230 m³/h



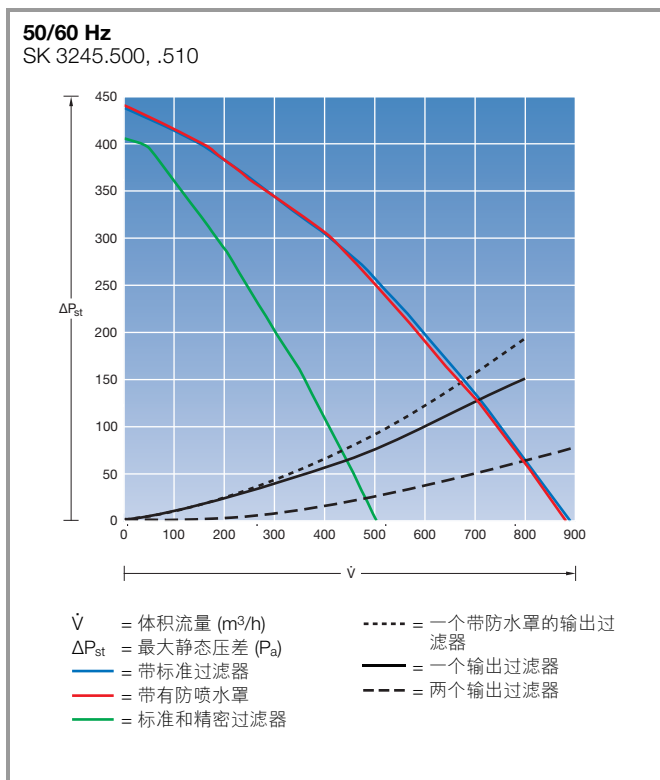
TopTherm 过滤器风扇，采用 EC 技术

风扇气流量 550 m³/h

风扇气流量 700 m³/h



风扇气流量 900 m³/h

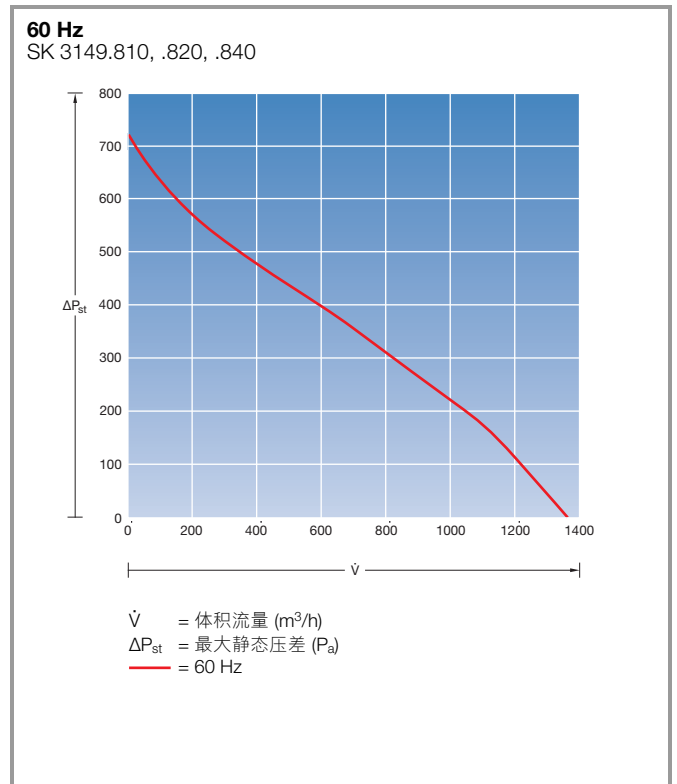
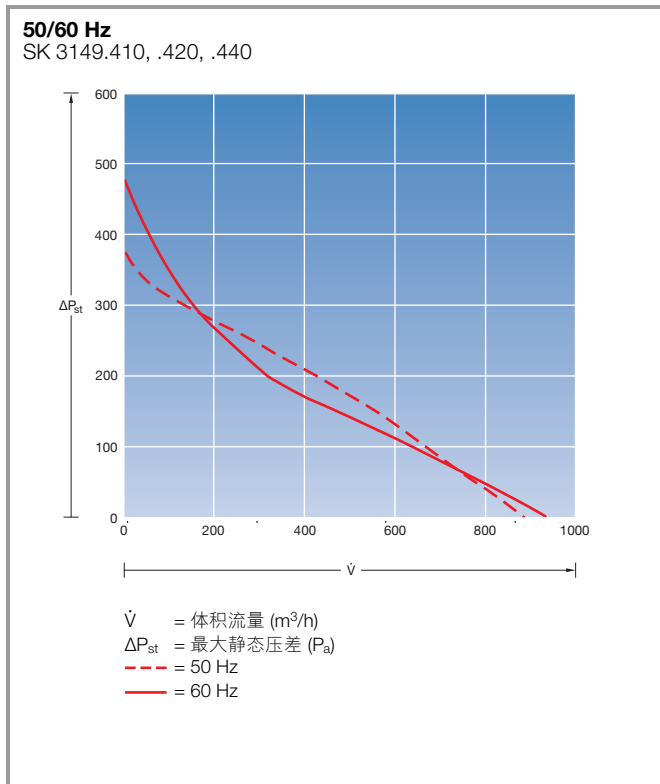


环境空气冷却装置

TopTherm 顶装式风扇

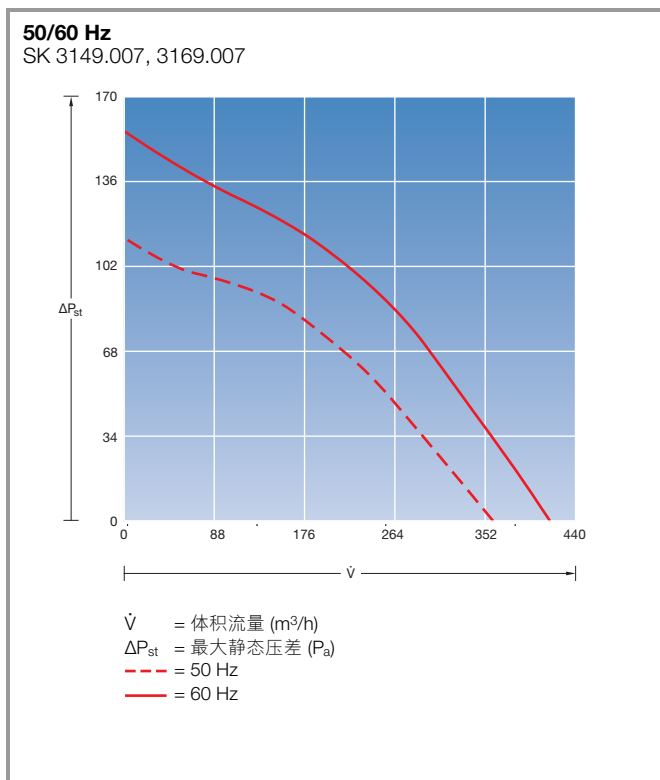
风扇气流量 400 m³/h

风扇气流量 800 m³/h



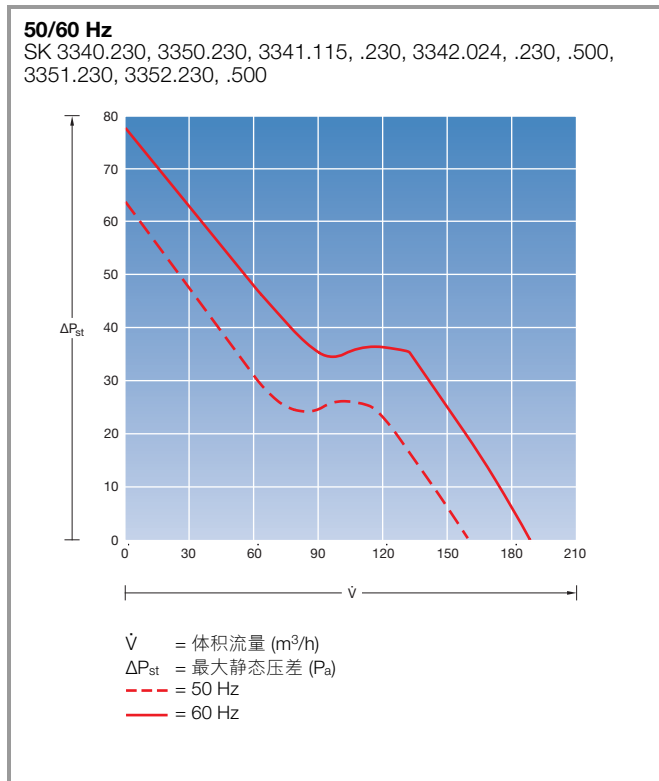
顶装式风扇，顶部排气

风扇气流量 360 m³/h



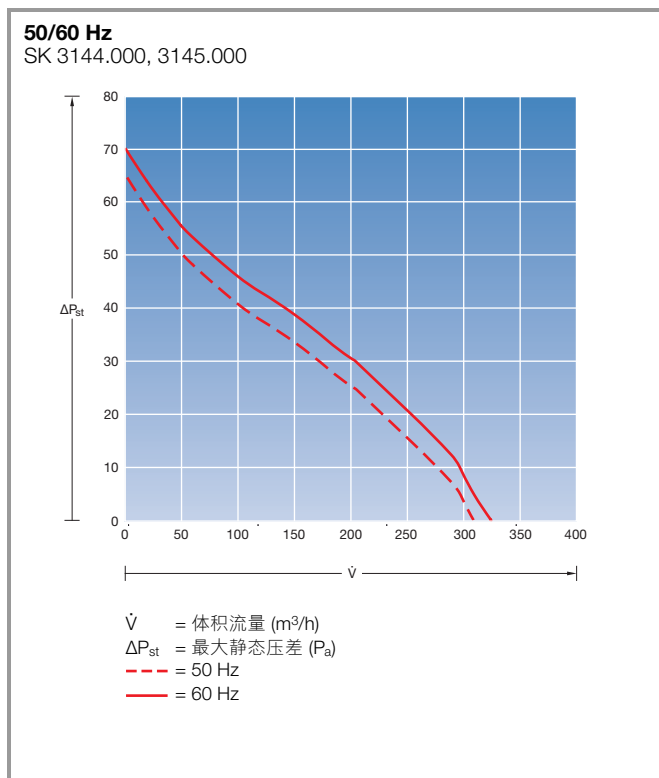
架装式风扇用于 482.6 mm (19")

风扇气流量 320/480 m³/h



贯流风扇用于 482.6 mm (19")

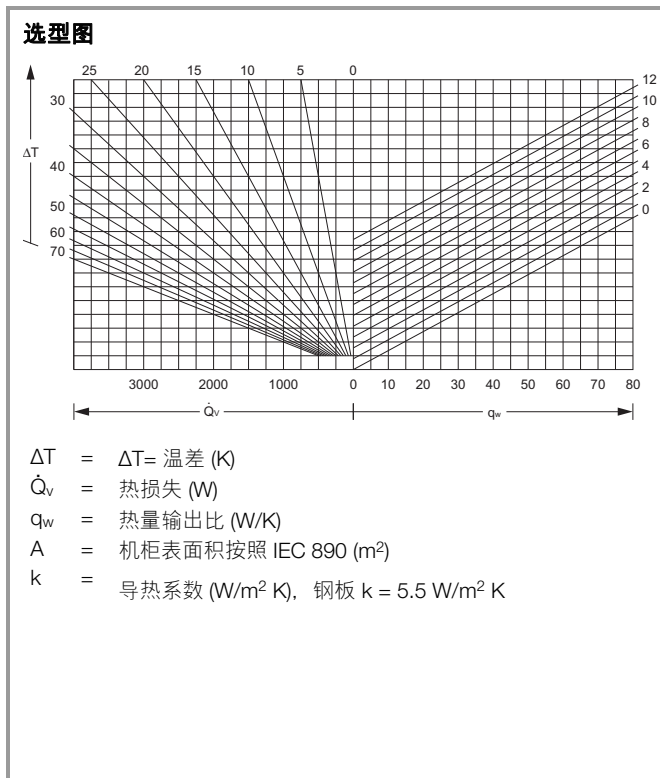
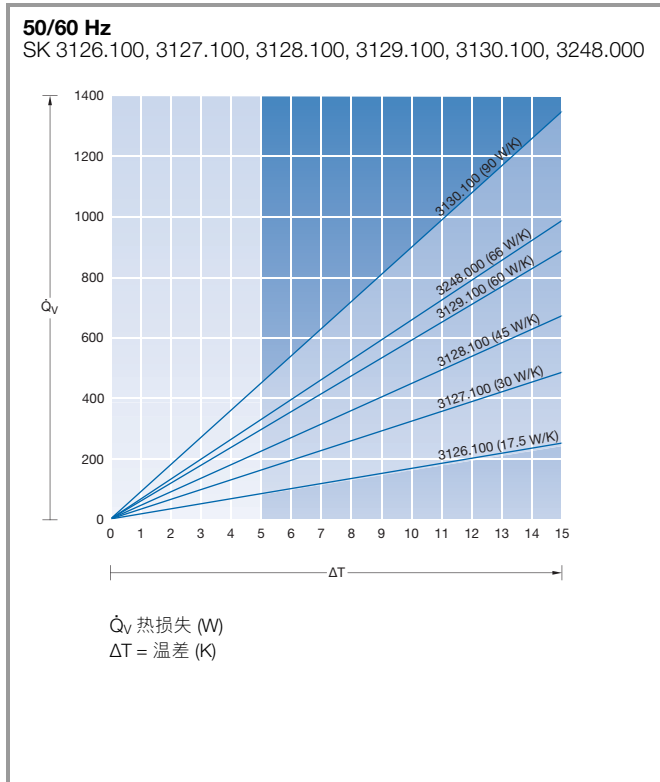
风扇气流量 320 m³/h



环境空气冷却装置

空气 / 空气热交换器 TopTherm

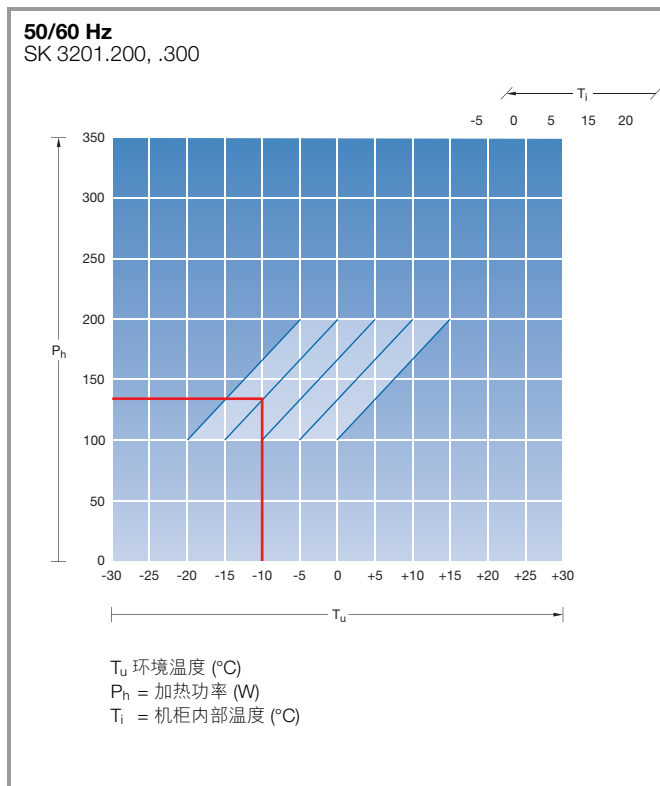
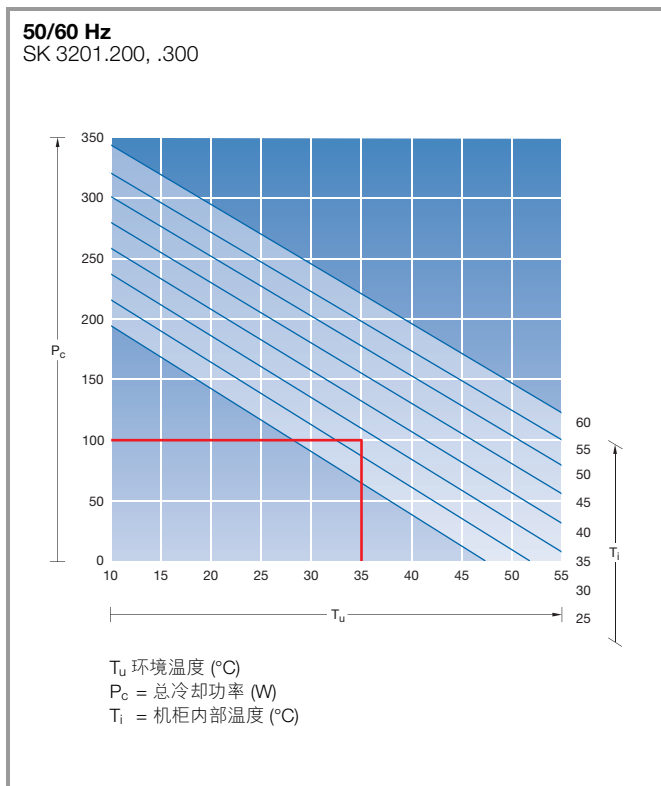
壁挂式, 比热功率 17.5 – 90 W/K, 带有调节器



半导体空调

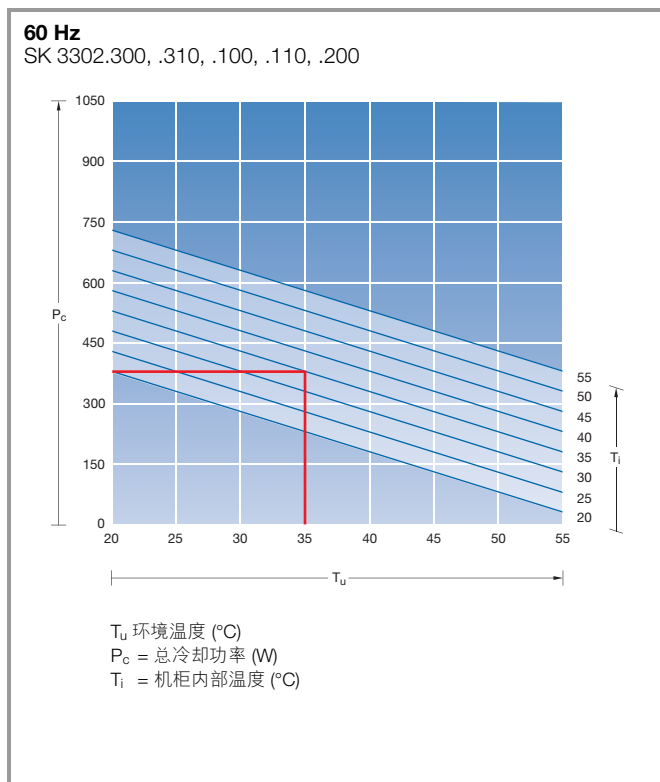
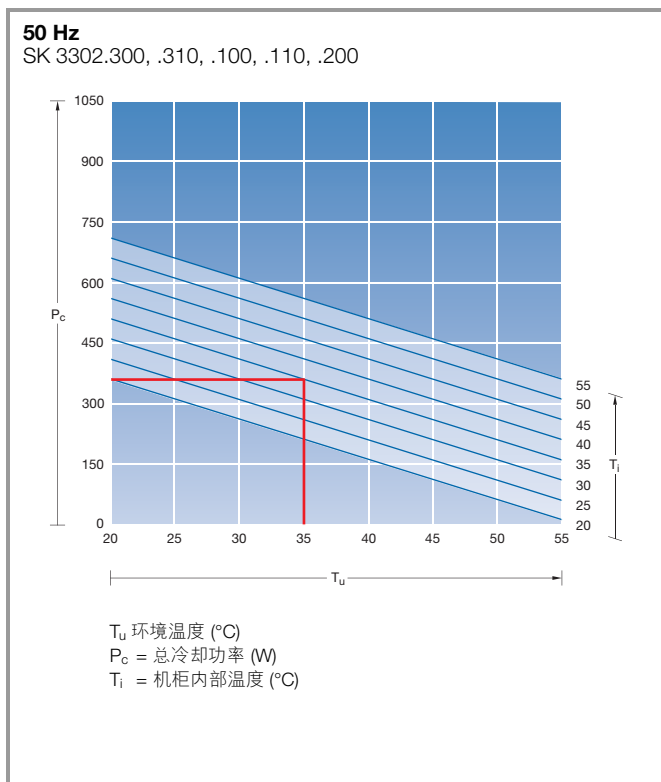
制冷功率

加热功率



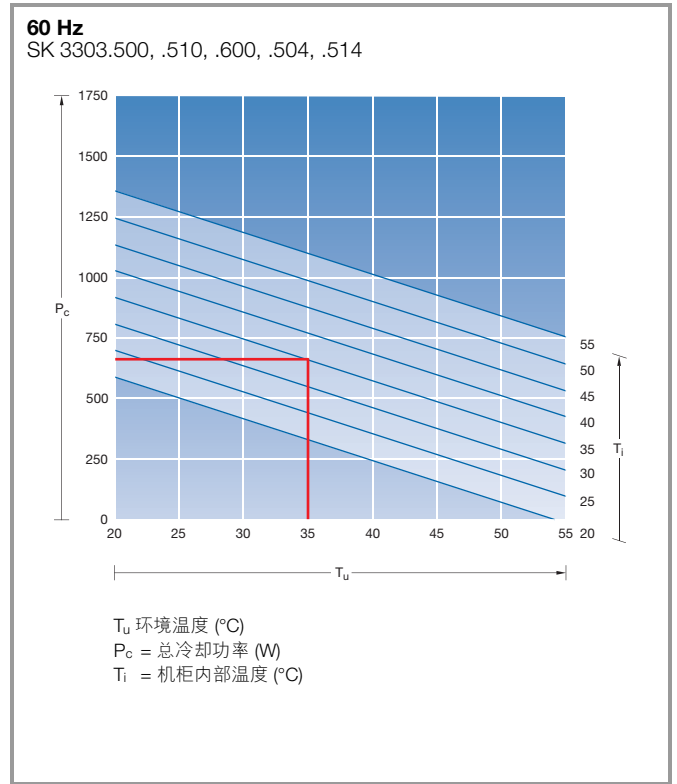
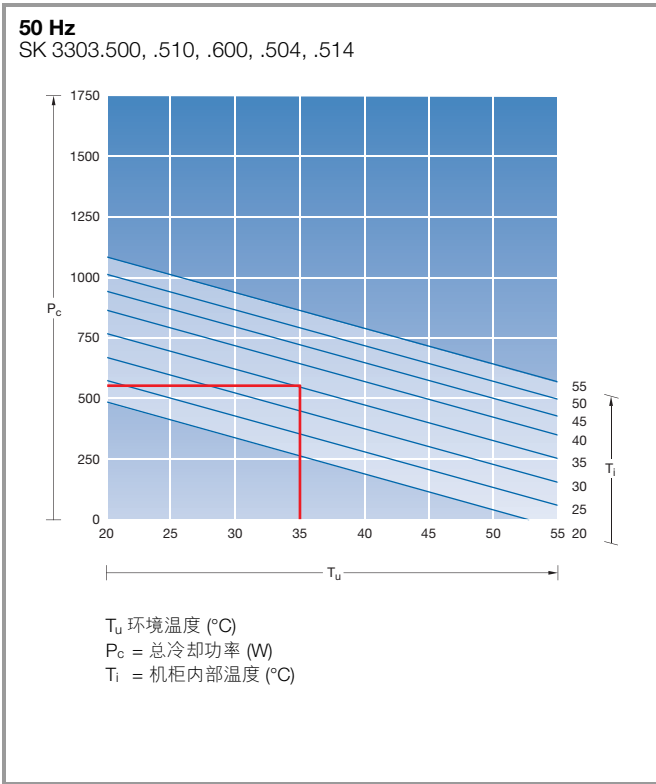
壁挂式空调 TopTherm

有效冷却功率 300 W (115/230 V, 1~)

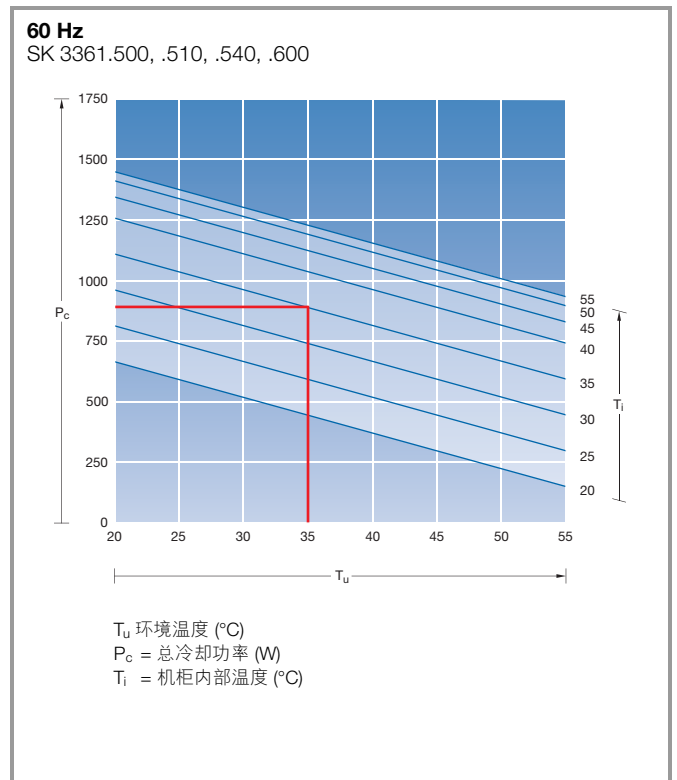
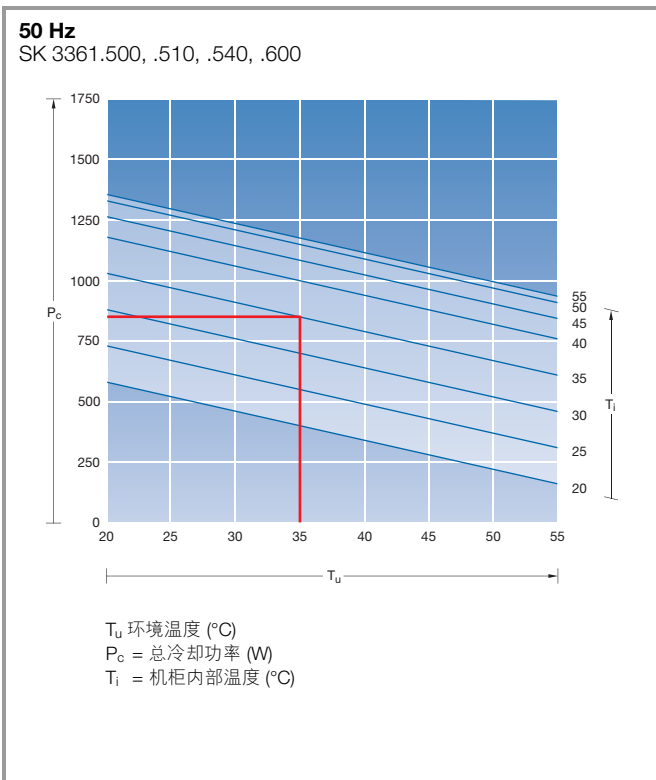


壁挂式空调 TopTherm Blue e

有效冷却功率 500 W (115/230 V, 1~)

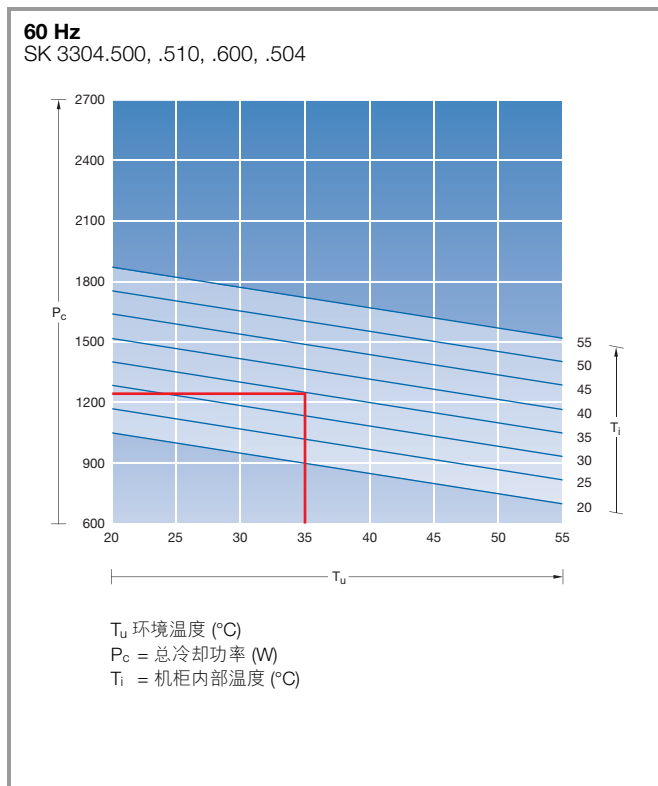
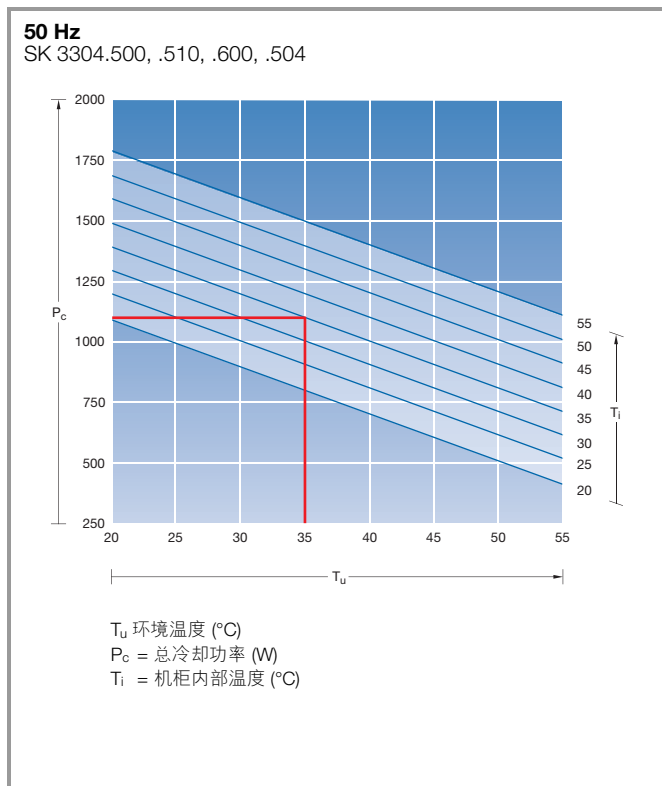


有效冷却功率 750 W (115/230 V, 1~, 400 V, 2~)

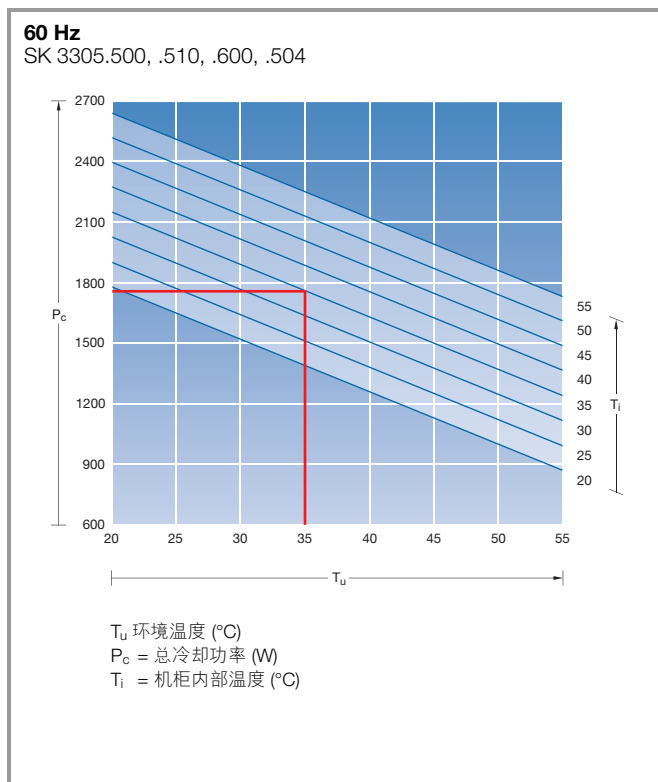
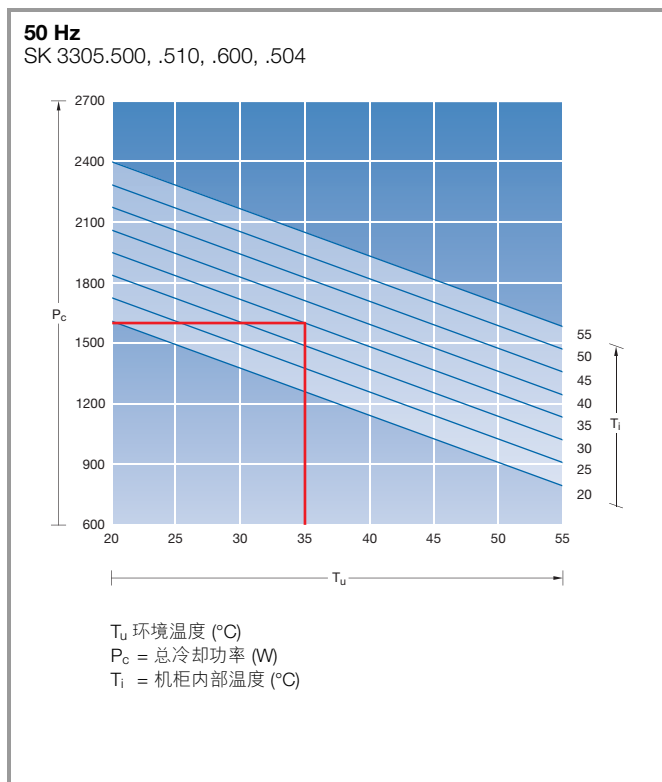


壁挂式空调 TopTherm Blue e

有效冷却功率 1000 W (115/230 V, 1~)

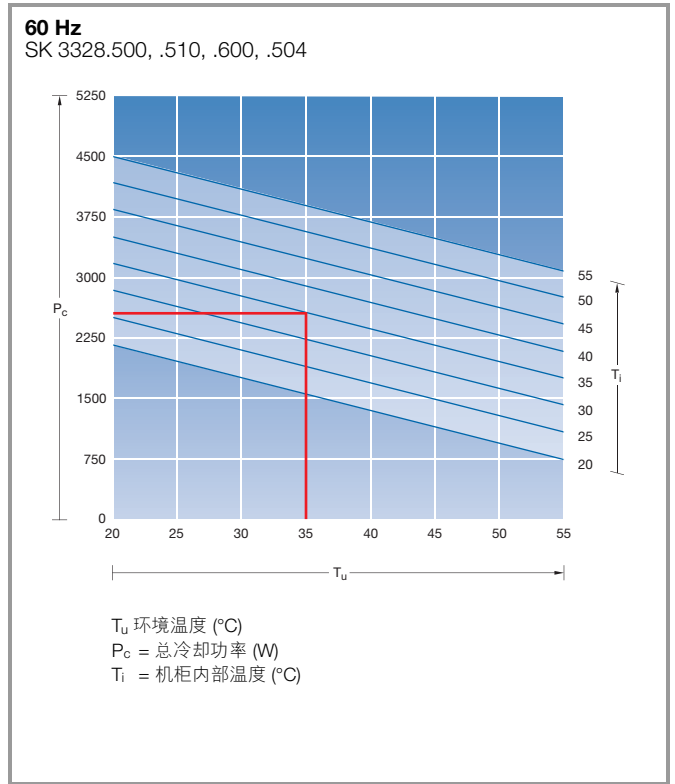
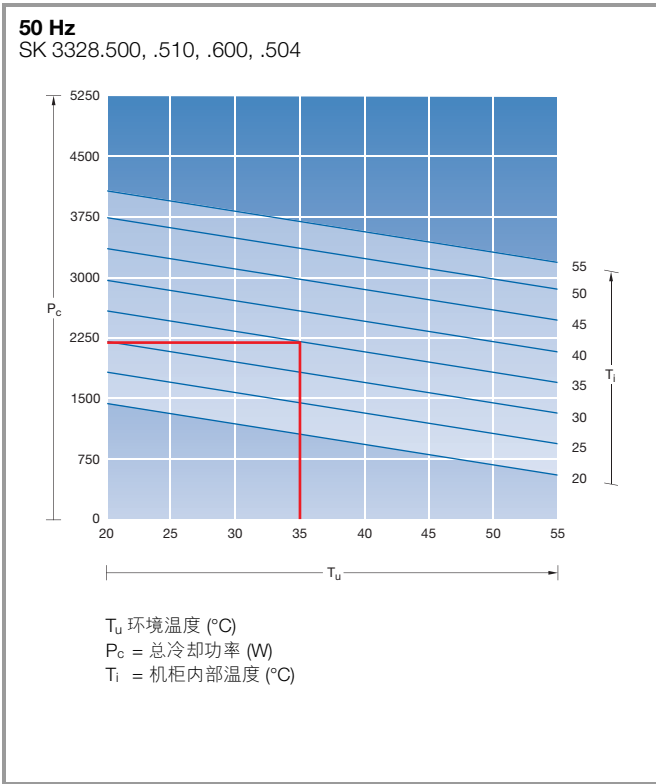


有效冷却功率 1500 W (115/230 V, 1~)

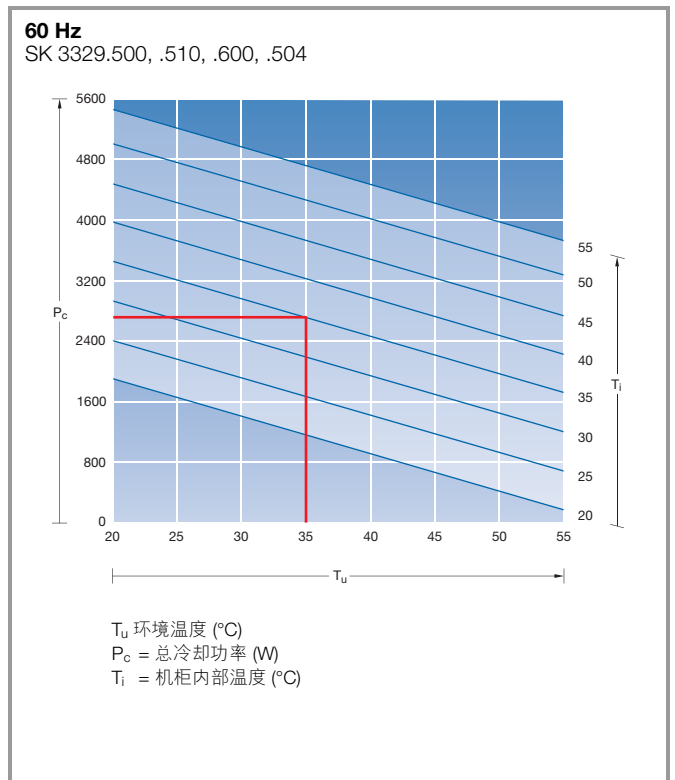
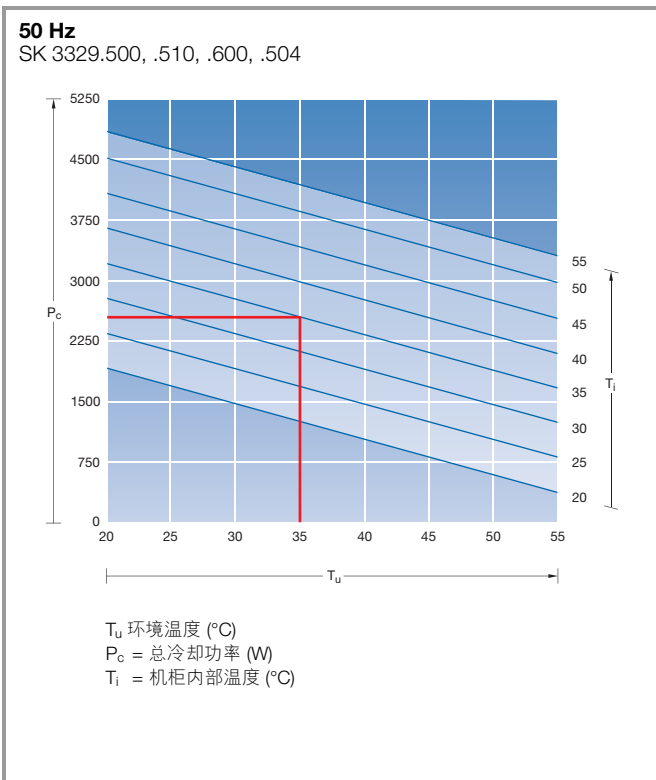


壁挂式空调 TopTherm Blue e

有效冷却功率 2000 W (115/230 V, 1~)

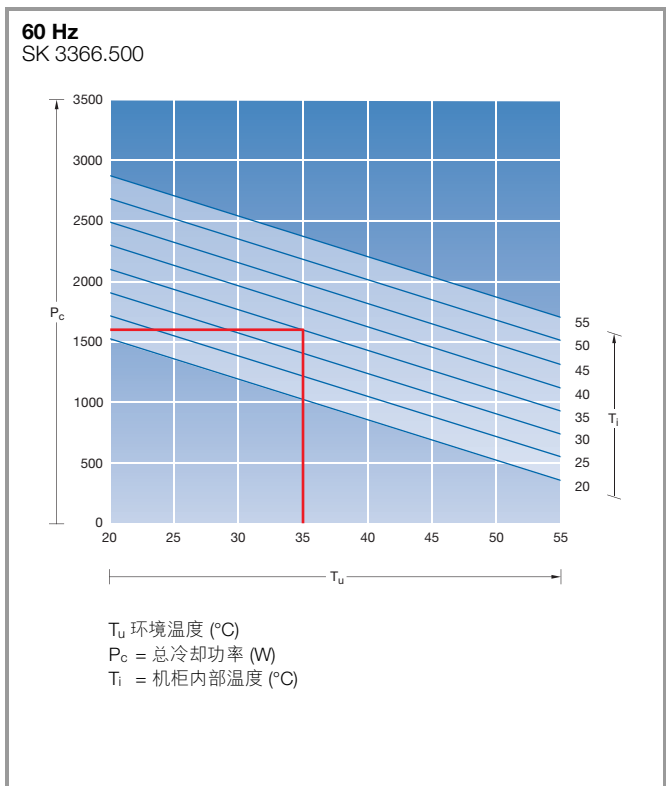
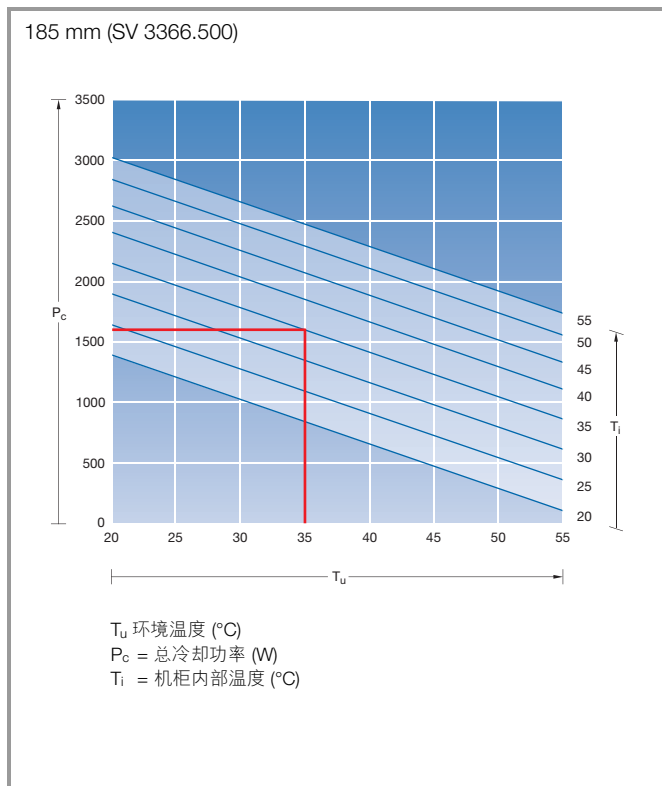


有效冷却功率 2500 W (115/230 V, 1~)

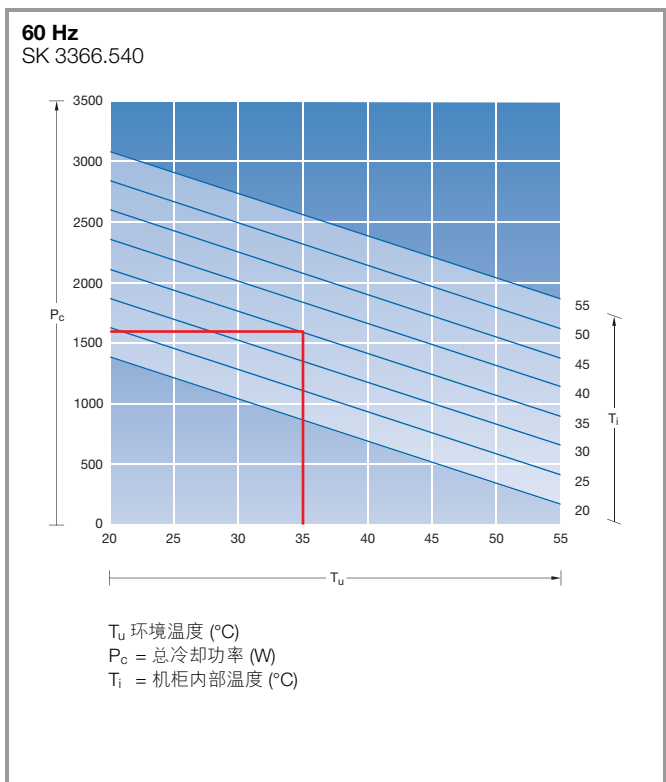
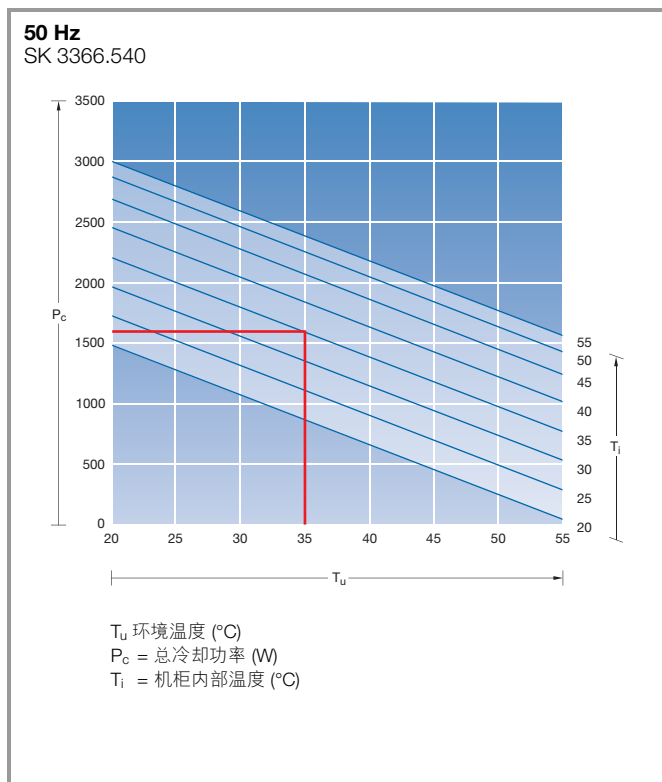


壁挂式空调 TopTherm Blue e, 薄型

有效冷却功率 1500 W (230 V, 1~)

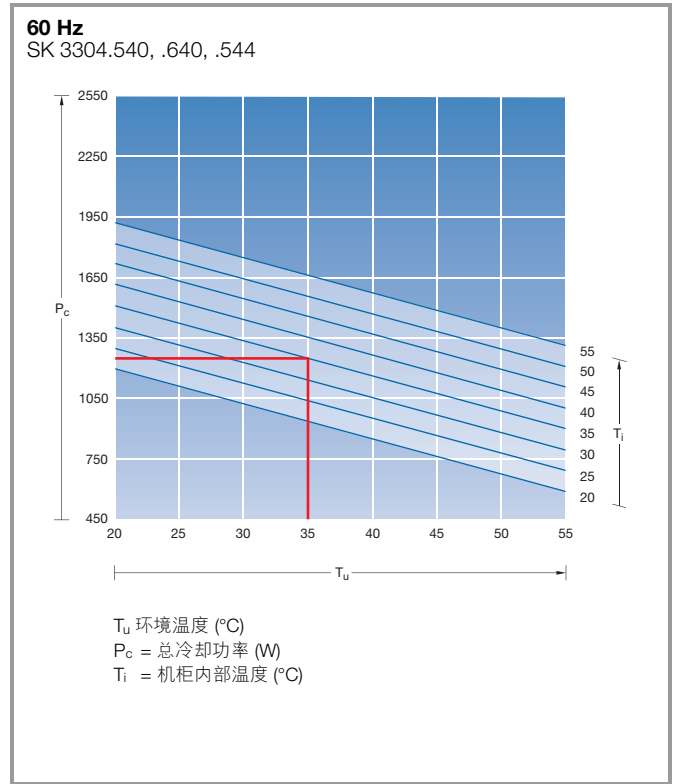
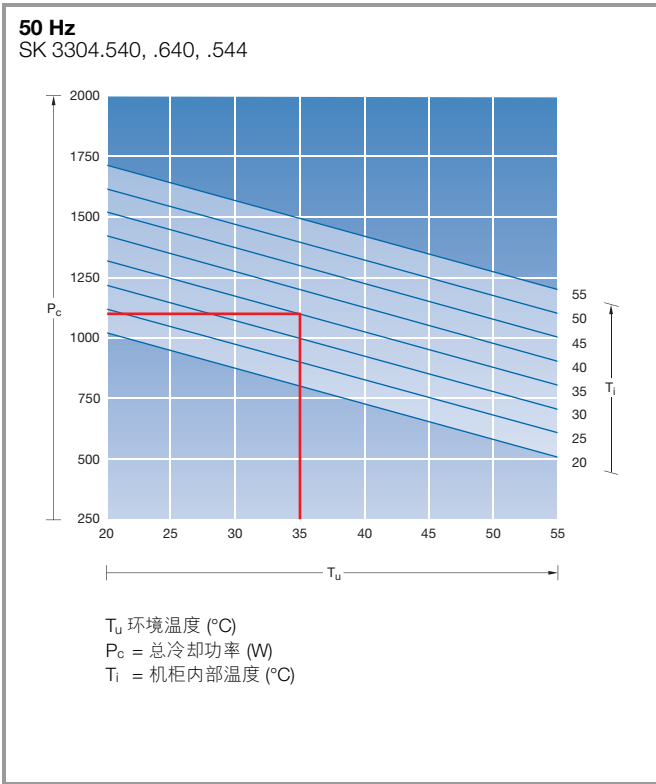


有效冷却功率 1500 W (400/460 V, 3~)

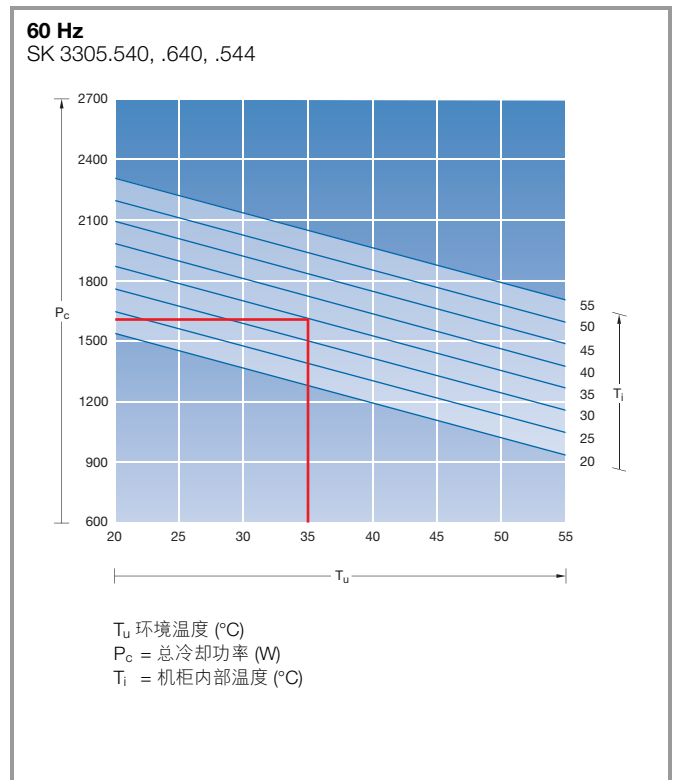
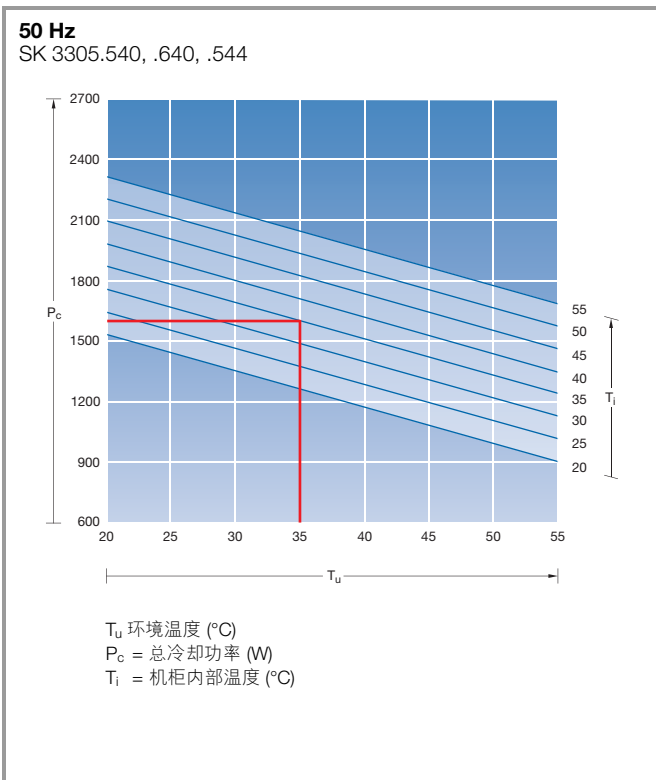


壁挂式空调 TopTherm Blue e

有效冷却功率 1000 W (400/460 V, 3~)

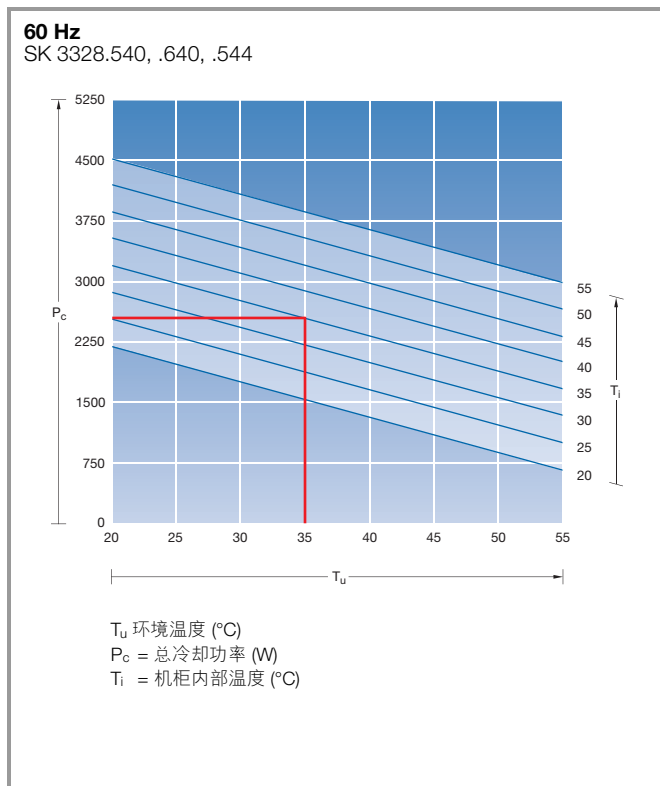
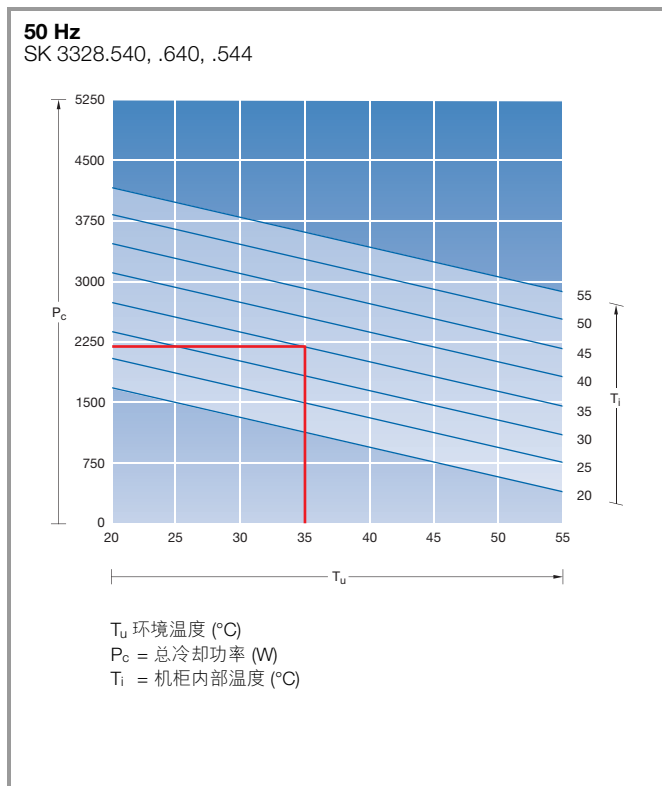


有效冷却功率 1500 W (400/460 V, 3~)

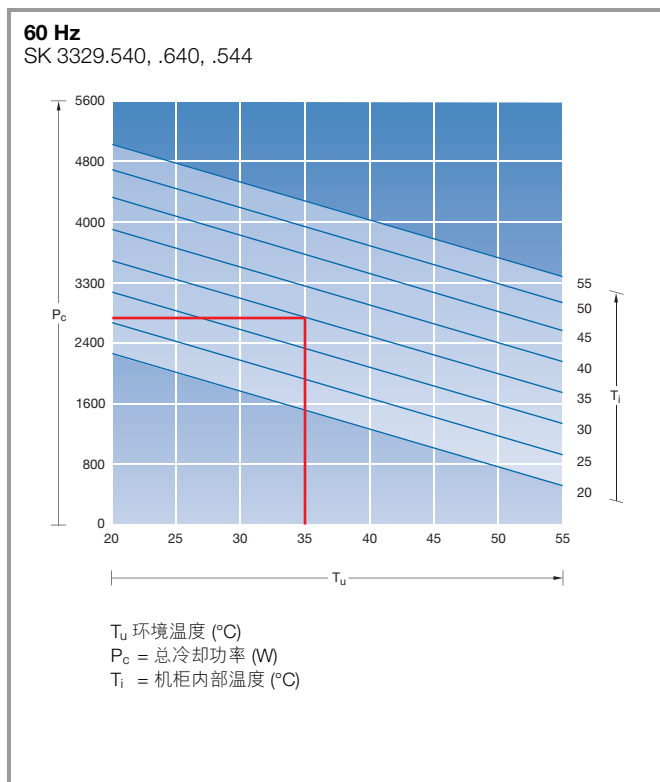
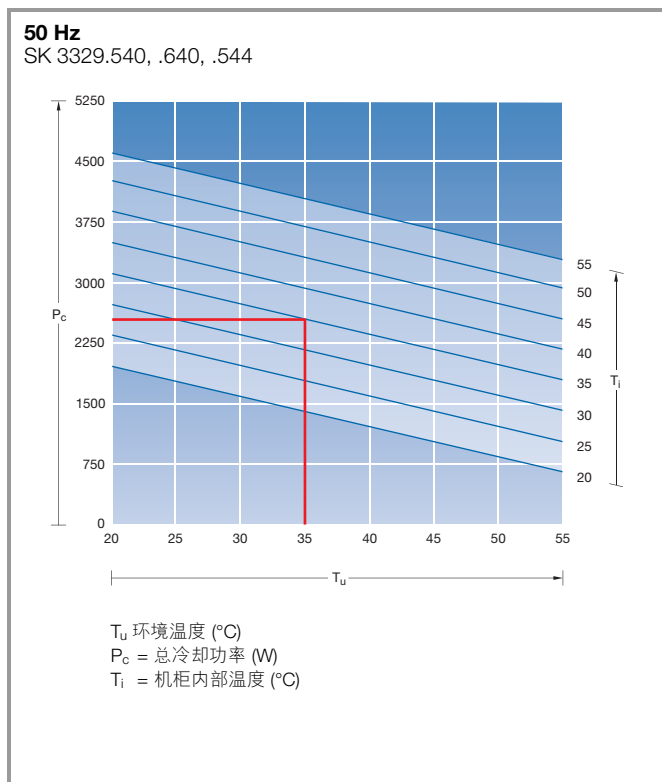


壁挂式空调 TopTherm Blue e

有效冷却功率 2000 W (400/460 V, 3~)

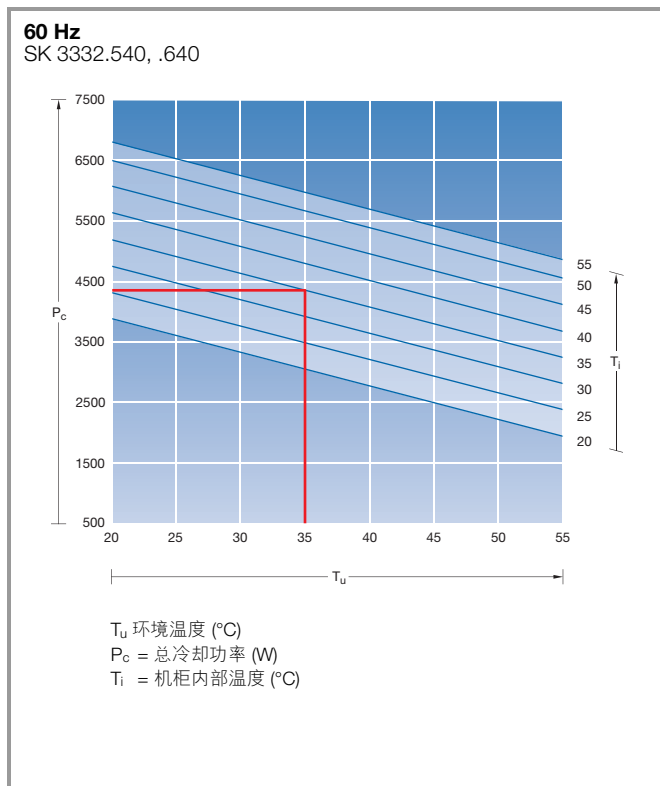
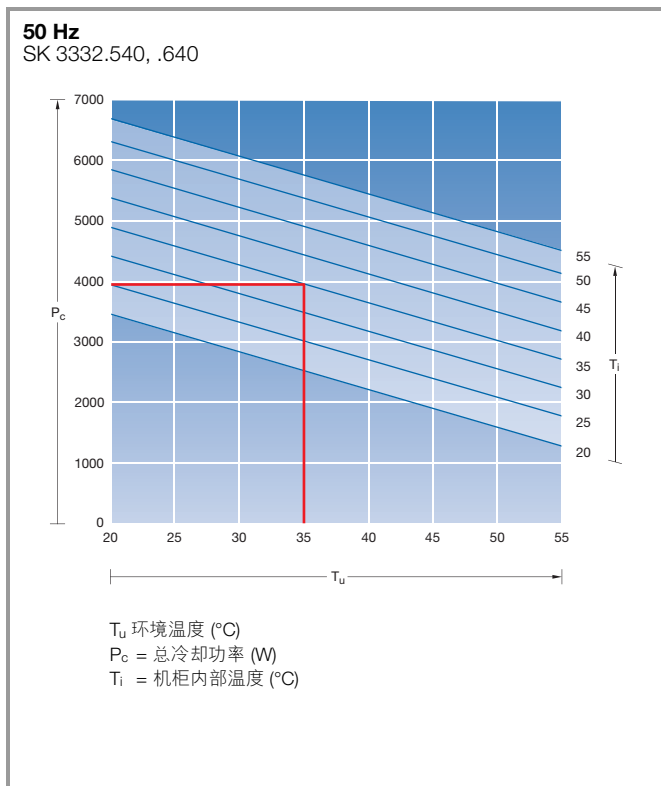


有效冷却功率 2500 W (400/460 V, 3~)



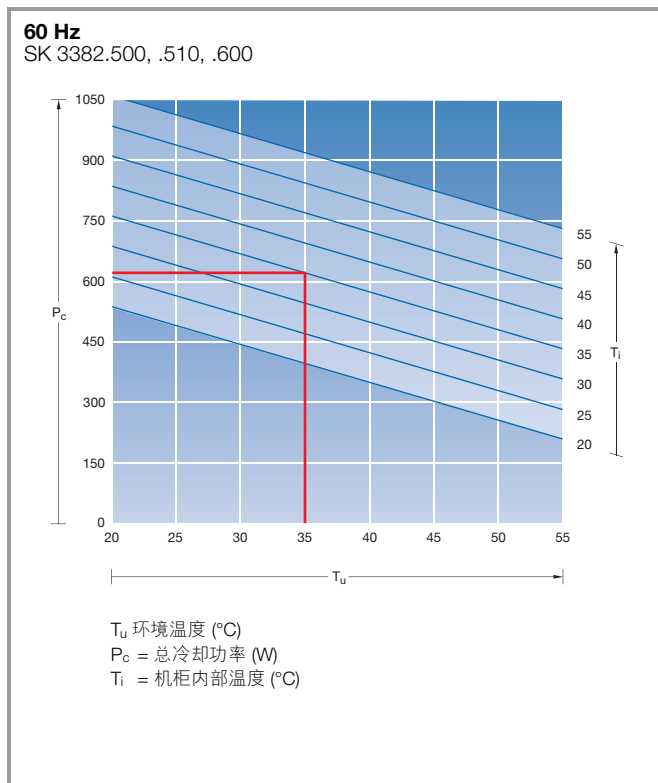
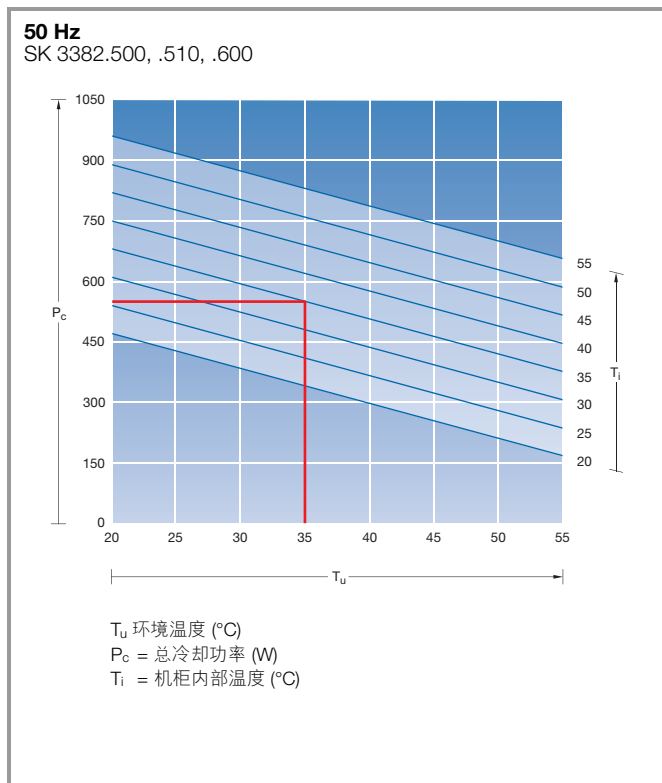
壁挂式空调 TopTherm Blue e

有效冷却功率 4000 W (400/460 V, 3~)

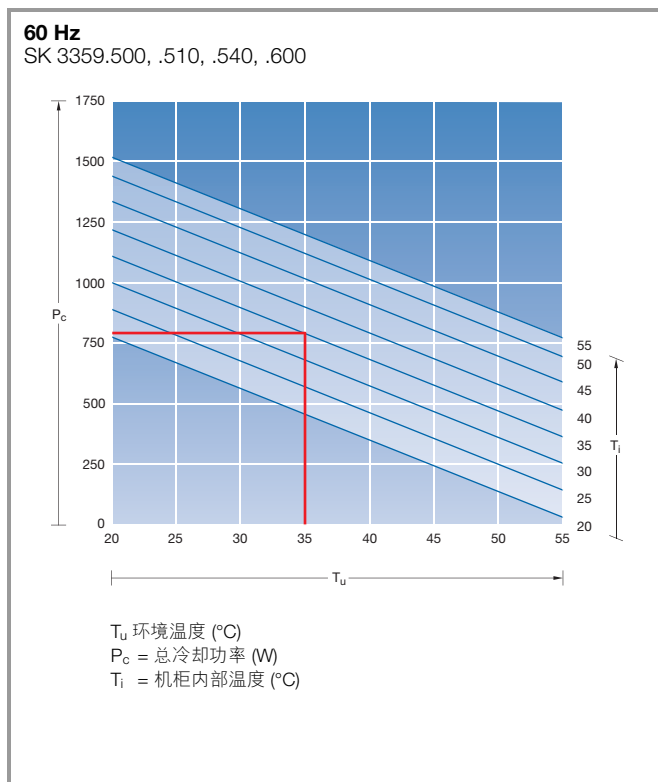
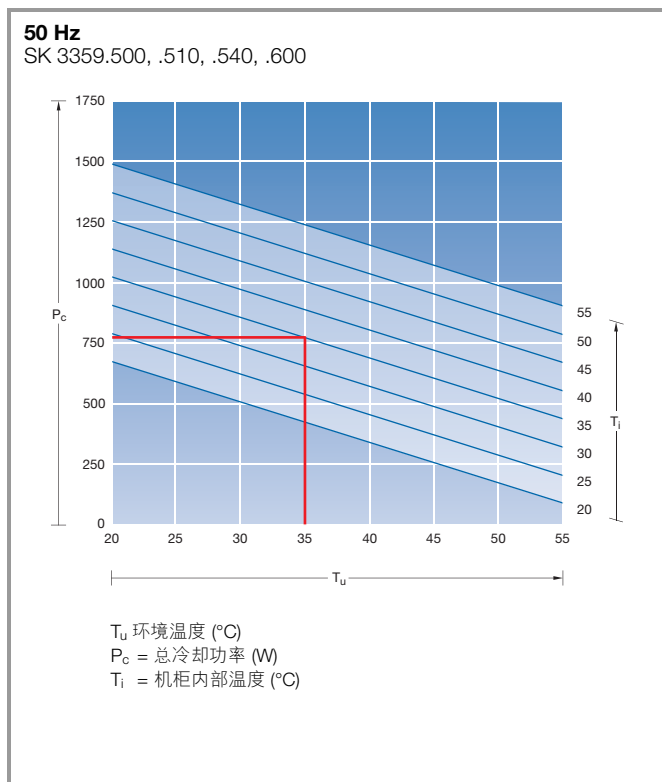


顶装式空调 TopTherm Blue e

有效冷却功率 500 W (115/230 V, 1~)



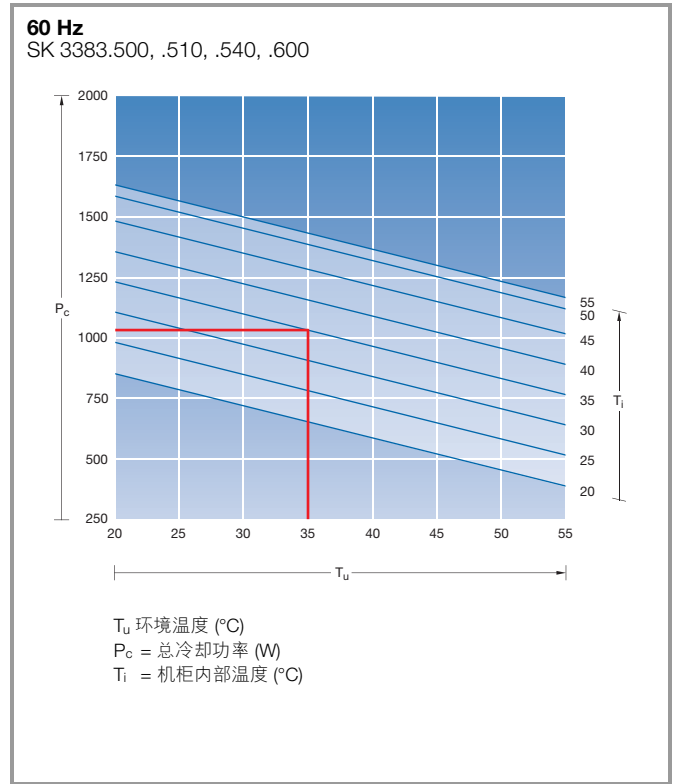
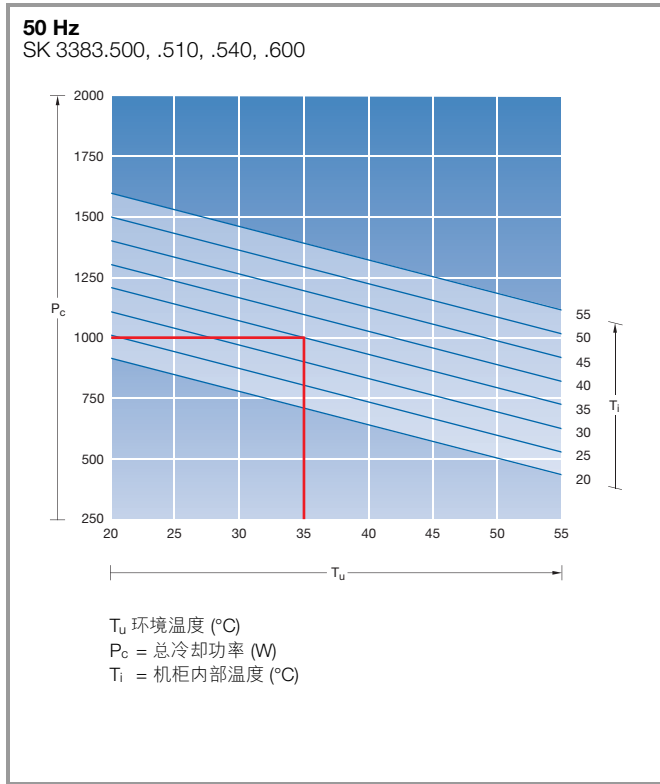
有效冷却功率 750 W (115/230 V, 1~, 400 V, 2~)



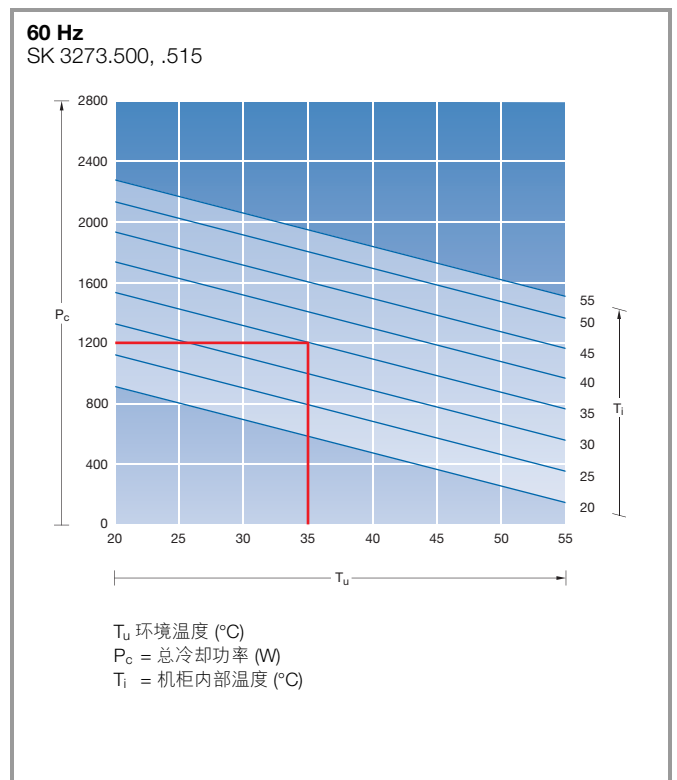
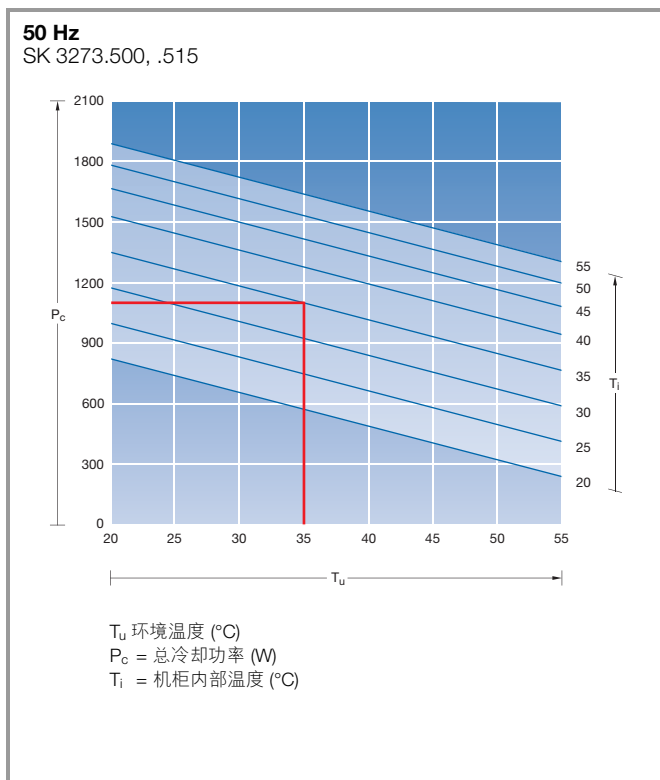
空调

顶装式空调 TopTherm Blue e

有效冷却功率 1000 W (115/230 V, 1~, 400 V, 2~)

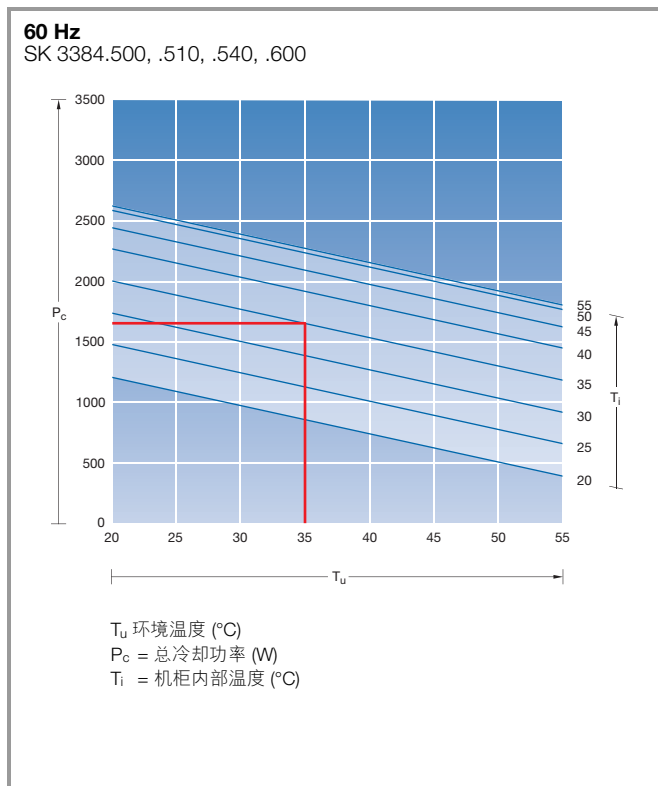
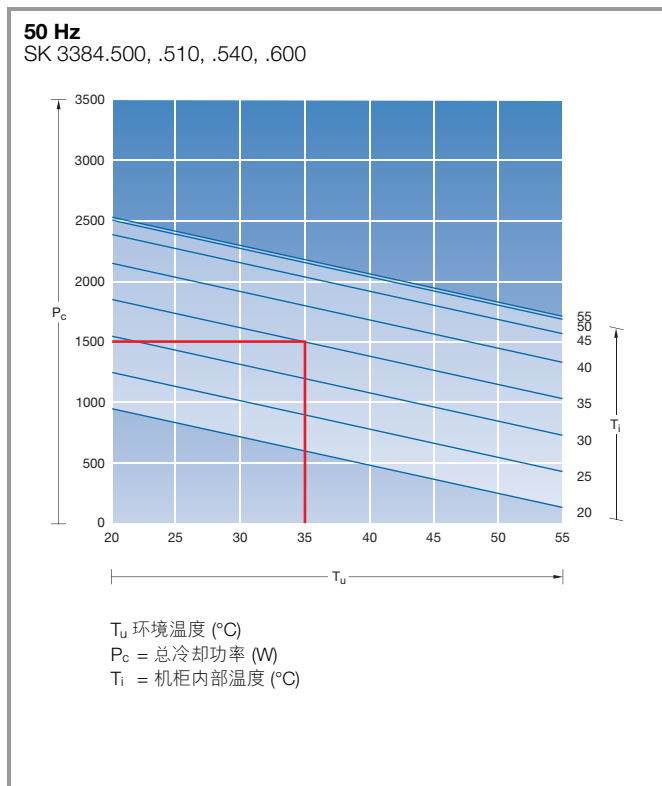


有效冷却功率 1100 W (115/230 V, 1~)

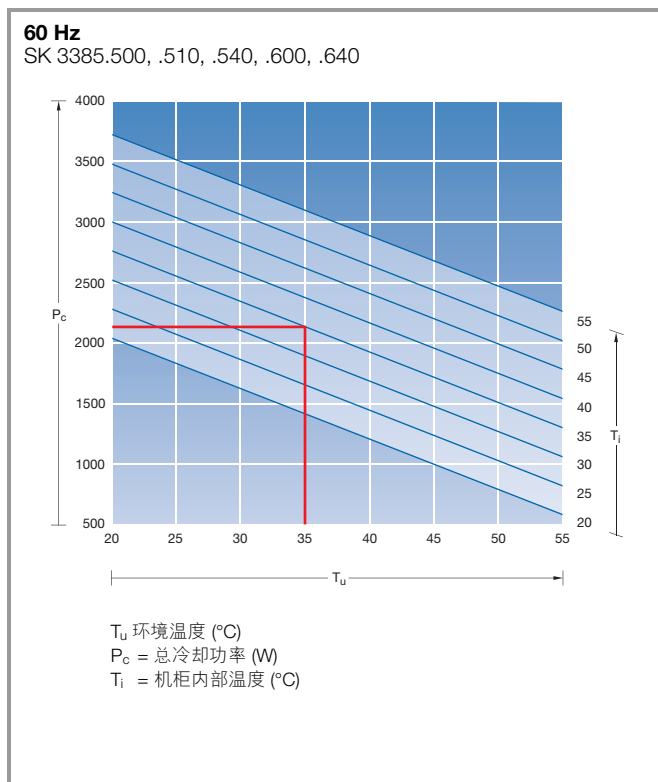
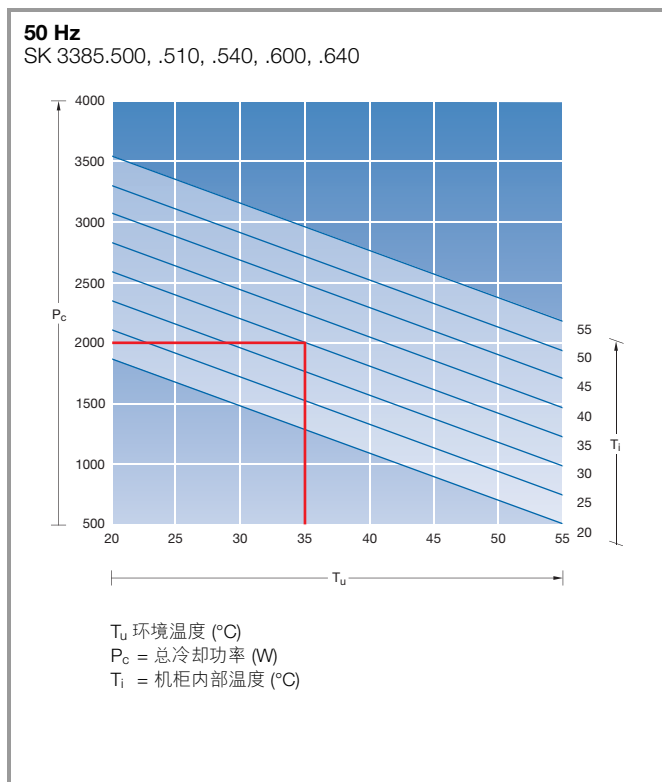


顶装式空调 TopTherm Blue e

有效冷却功率 1500 W (115/230 V, 1~, 400 V, 2~)

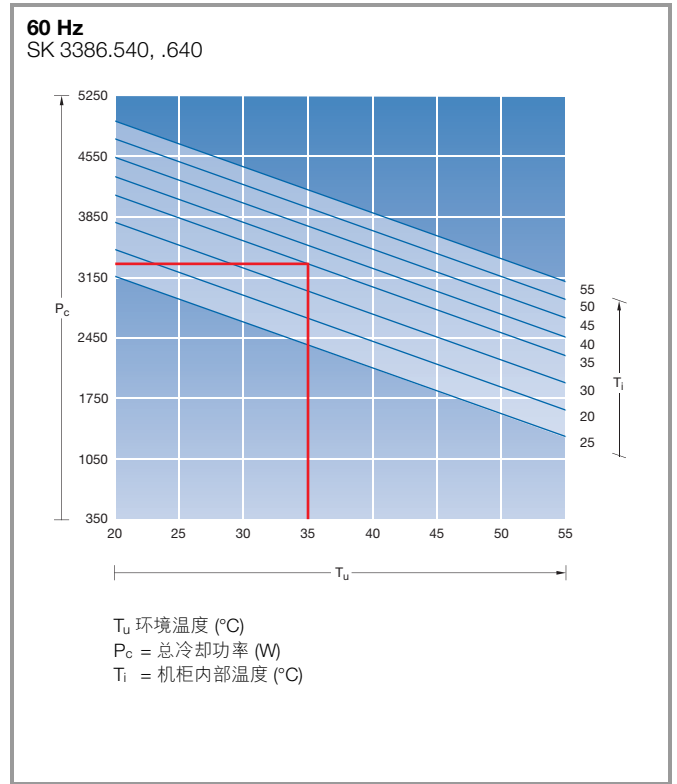
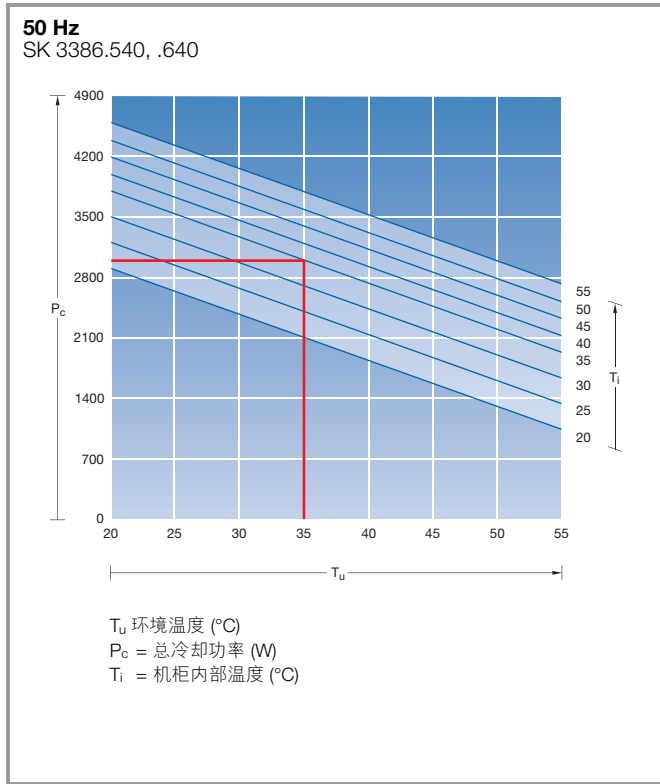


有效冷却功率 2000 W (115/230 V, 1~, 400 V, 2~)

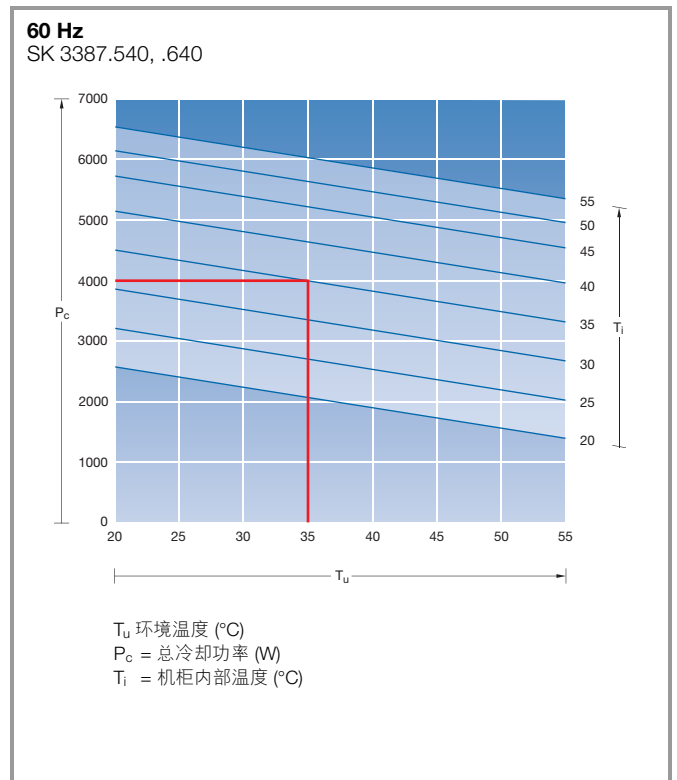
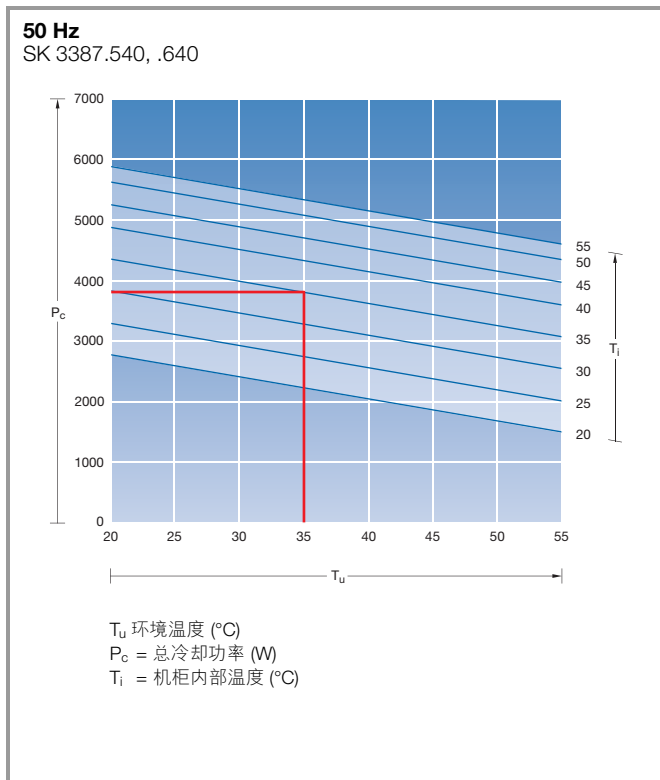


顶装式空调 TopTherm Blue e

有效冷却功率 3000 W (400/460 V, 3~)

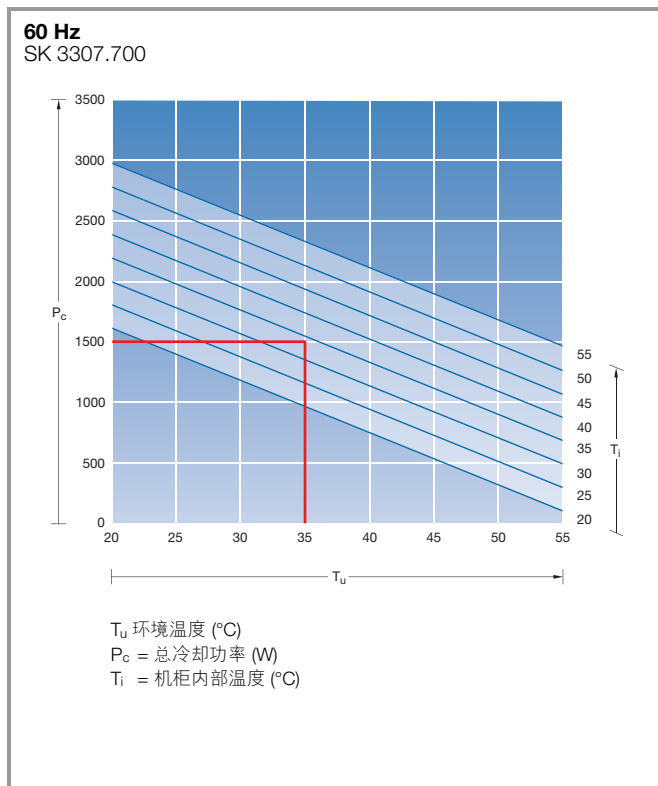
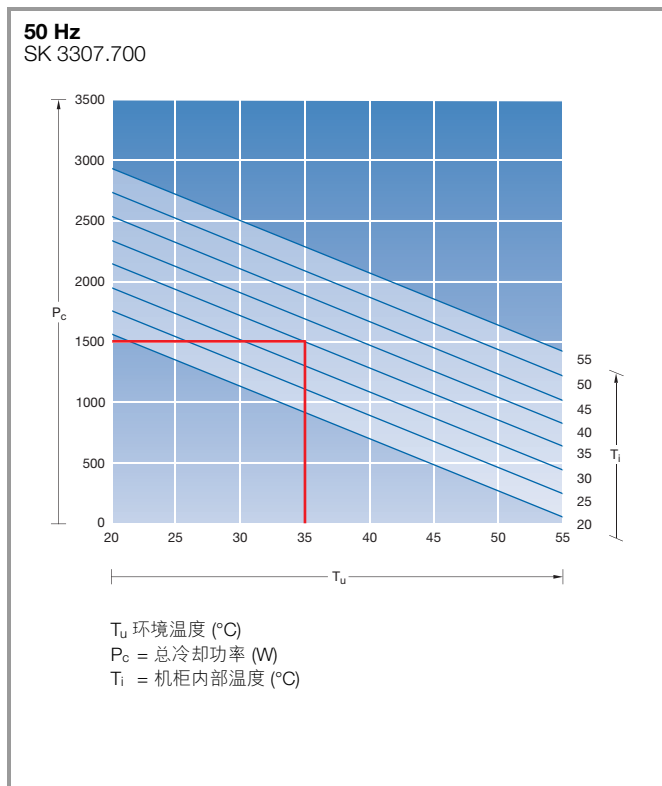


有效冷却功率 4000 W (400/460 V, 3~)

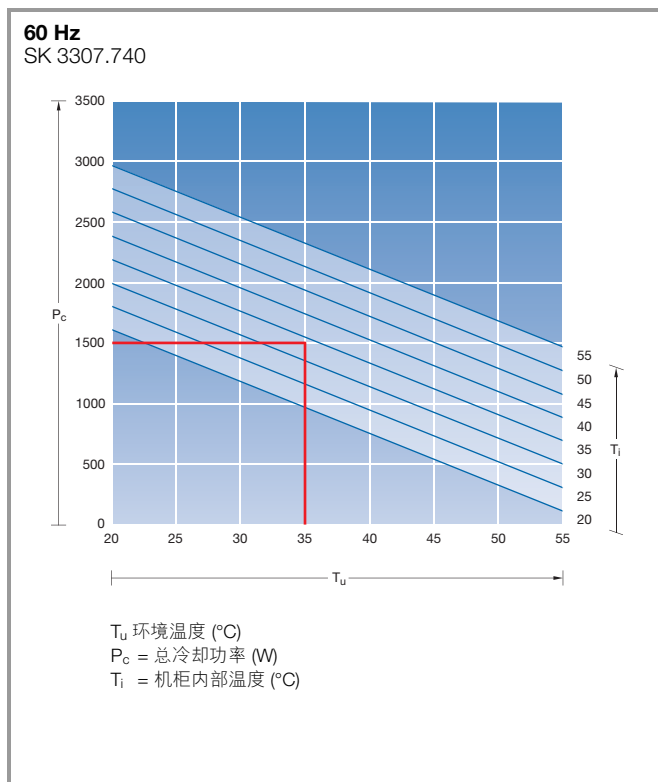
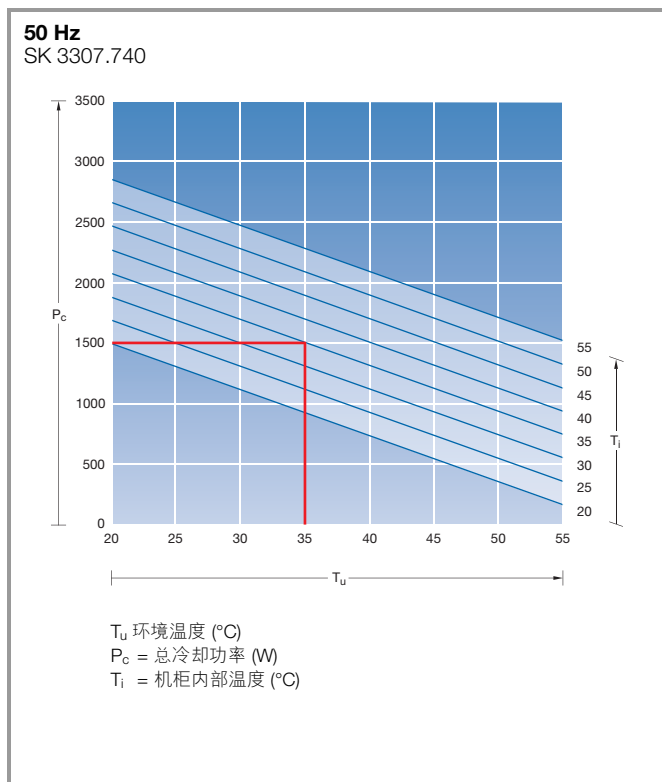


空调模块设计, 冷却模块 Blue e

有效冷却功率 1500 W (230 V, 1~)

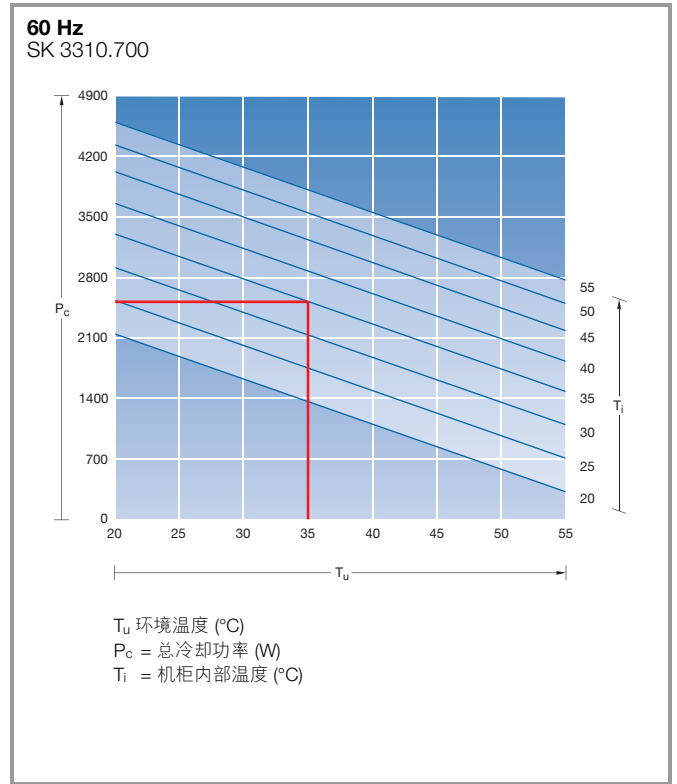
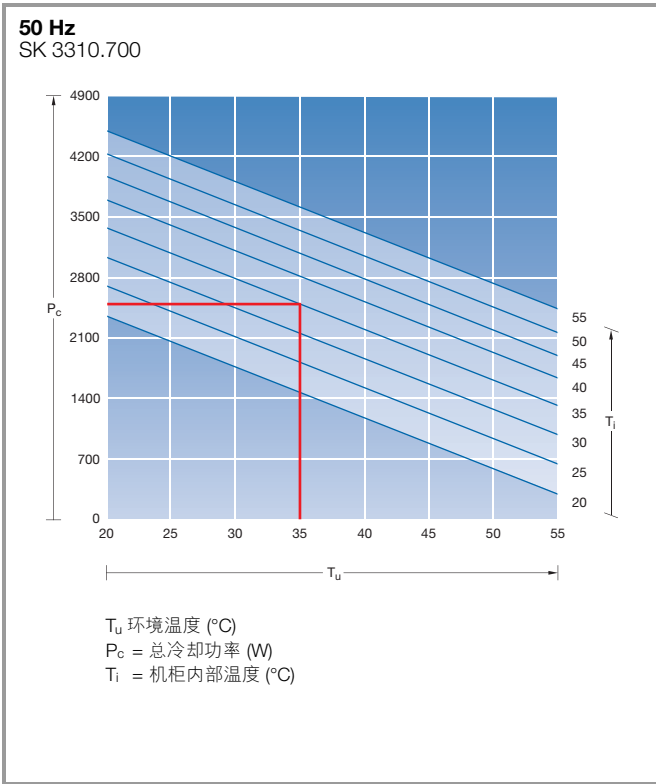


有效冷却功率 1500 W (400/460 V, 3~)

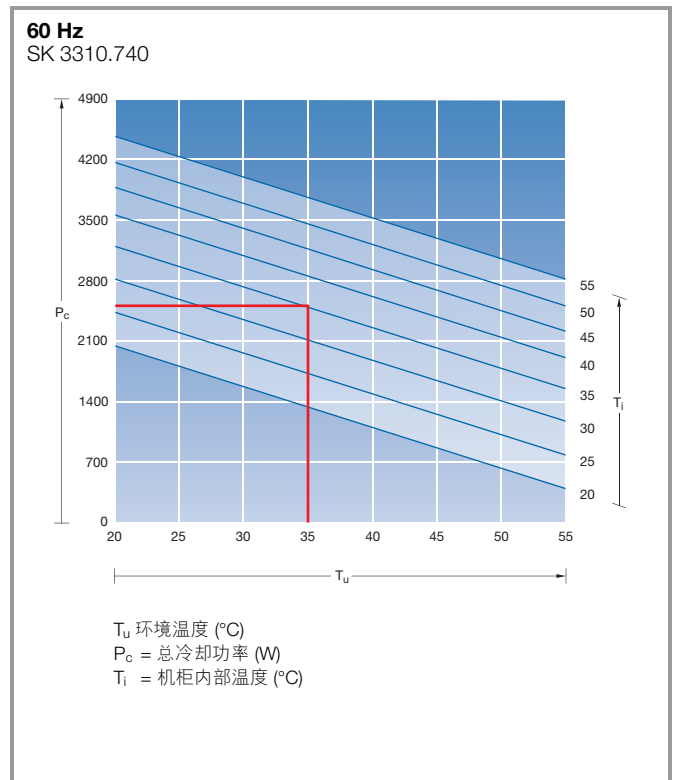
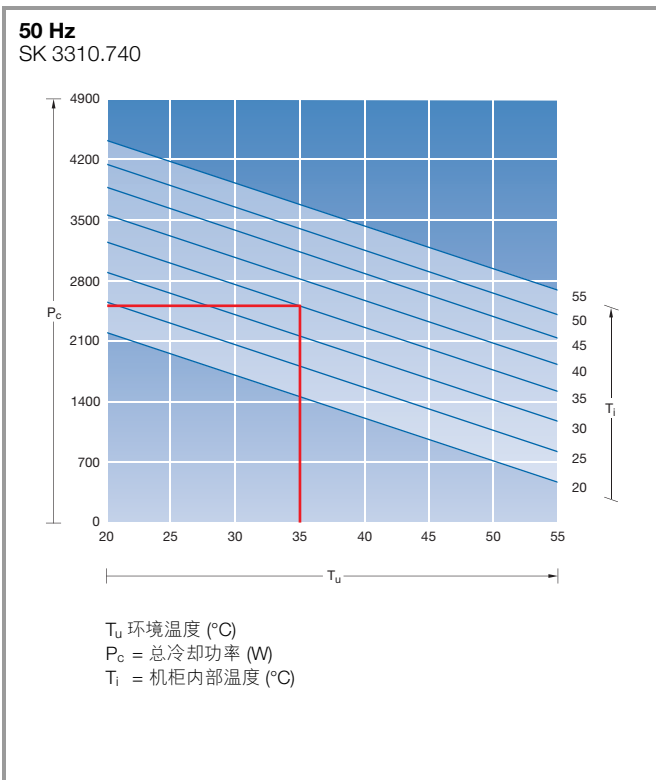


空调模块设计, 冷却模块 Blue e

有效冷却功率 2500 W (230 V, 1~)



有效冷却功率 2500 W (400/460 V, 3~)

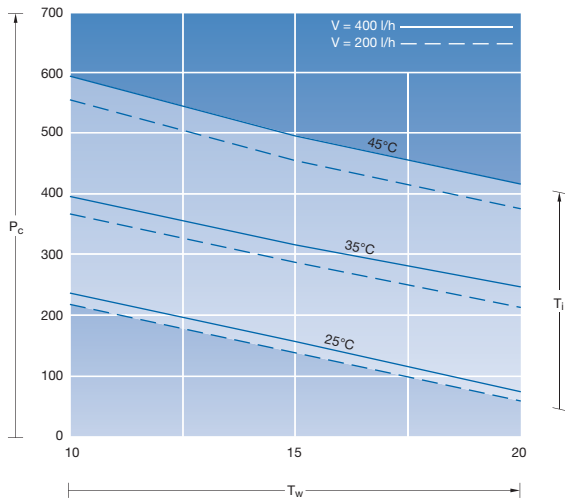


壁装式空气 / 水热交换器

有效冷却功率 300 W

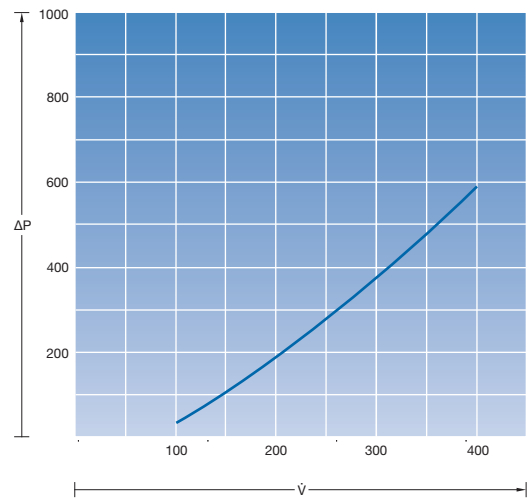
导水部件：铜 / 黄铜 (Cu/CuZn)

50/60 Hz
SK 3212.024, .115, .230



T_w = 进水温度 (°C)
 P_c = 总冷却功率 (W)
 T_i = 机柜内部温度 (°C)

水压图
SK 3212.024, .115, .230

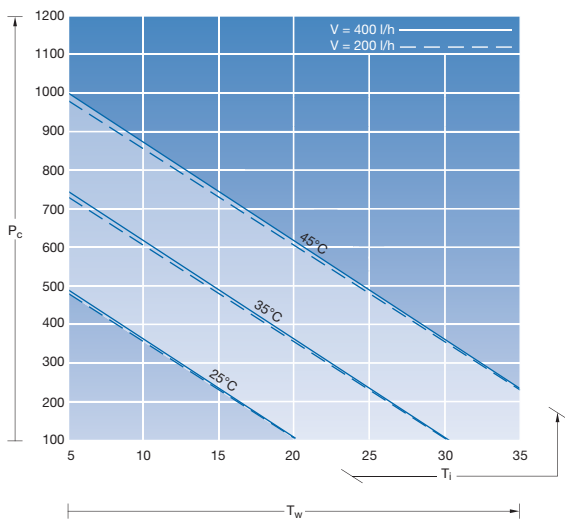


\dot{V} = 容积流量 (l/h)
 ΔP = 水压力 (mbar)

有效冷却功率 600 W

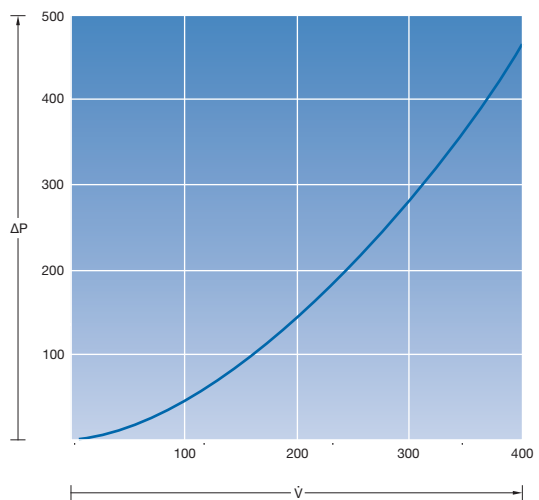
导水部件：铜 / 黄铜 (Cu/CuZn)

50/60 Hz
SK 3214.100



T_w = 进水温度 (°C)
 P_c = 总冷却功率 (W)
 T_i = 机柜内部温度 (°C)

水压图
SK 3214.100



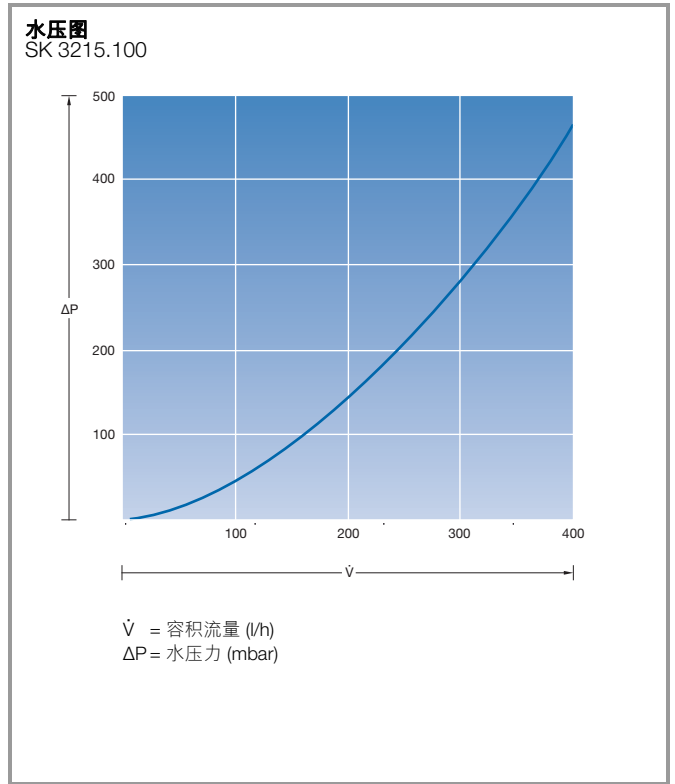
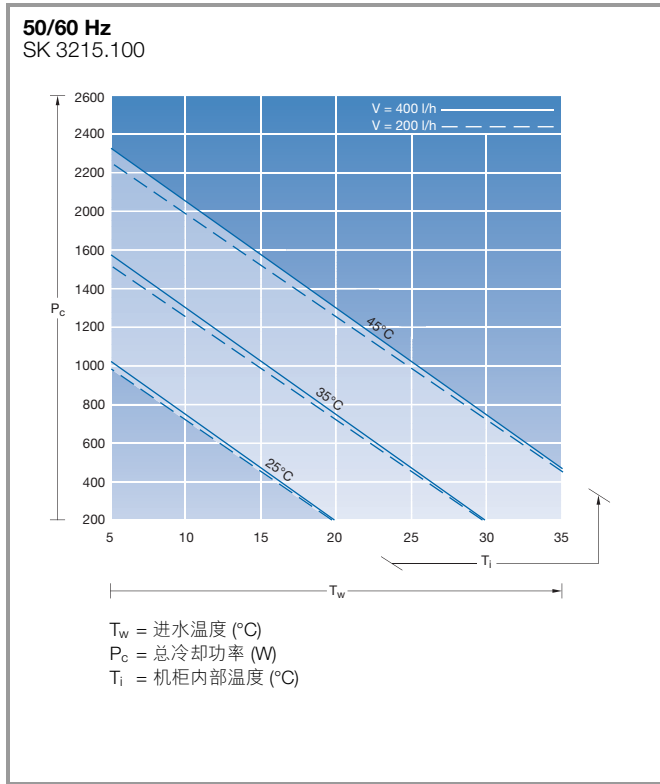
\dot{V} = 容积流量 (l/h)
 ΔP = 水压力 (mbar)

液体冷却

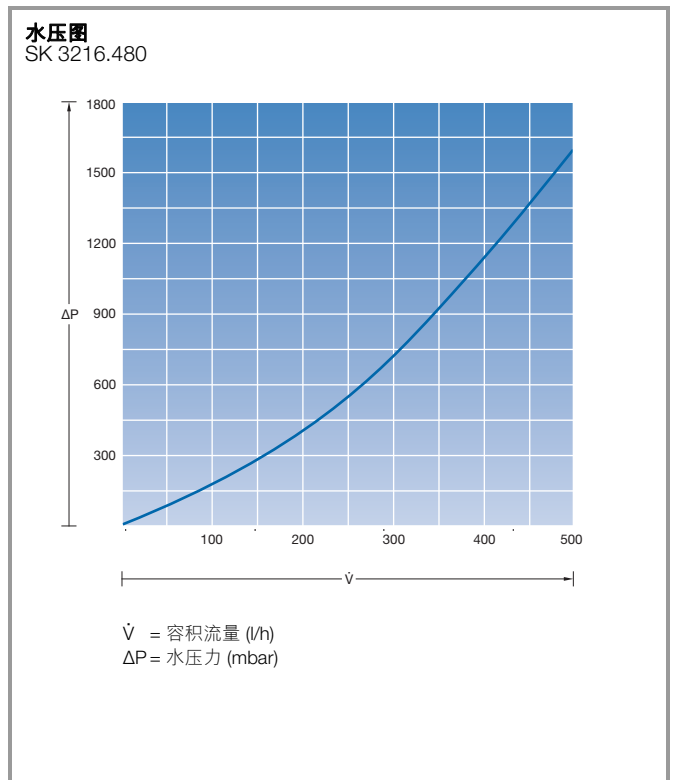
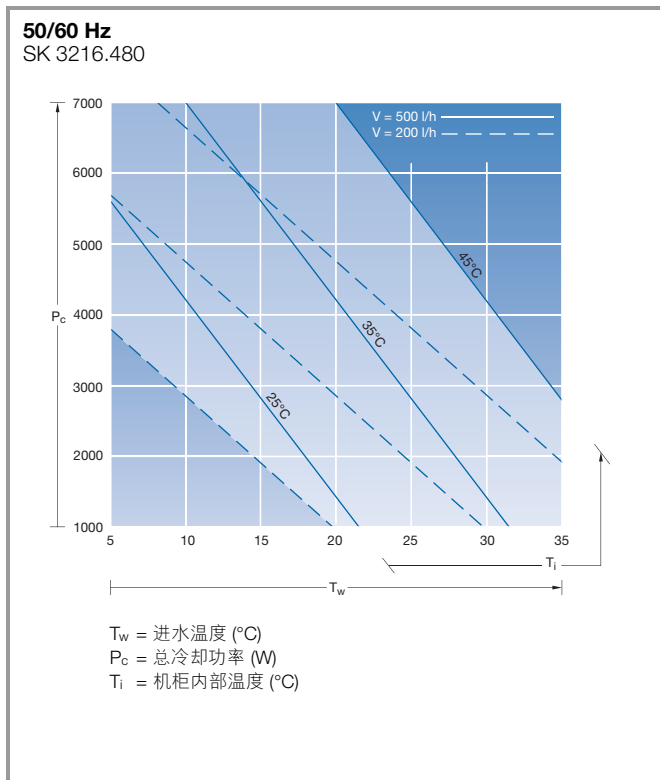
壁装式空气 / 水热交换器

有效冷却功率 1250 W

导水部件：铜 / 黄铜 (Cu/CuZn)



有效冷却功率 7000 W
导水部件：铜 / 黄铜 (Cu/CuZn)



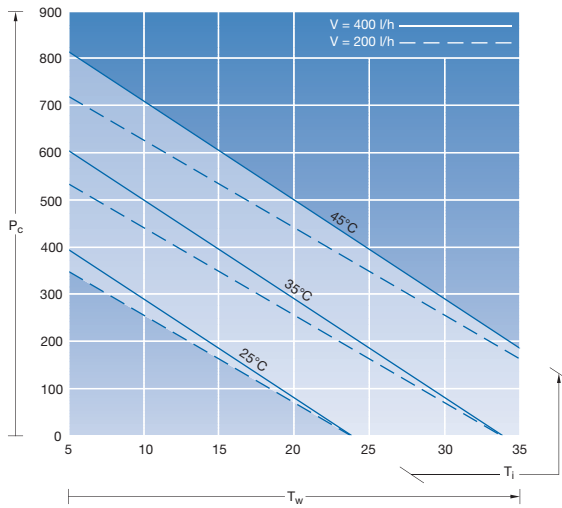
壁装式空气 / 水热交换器

有效冷却功率 500 W

导水部件：铜 / 黄铜 (Cu/CuZn)

50 Hz

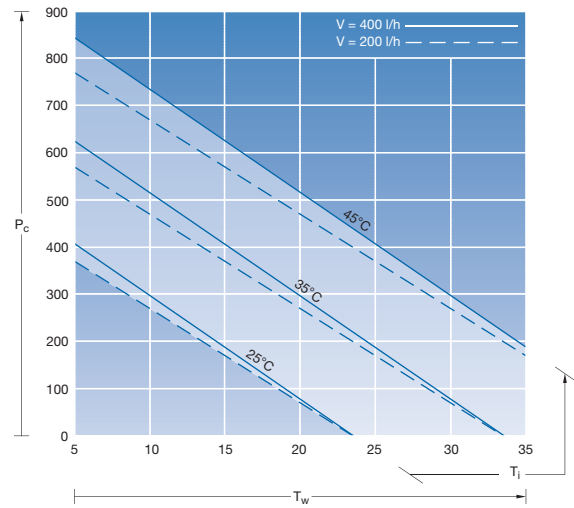
SK 3363.100, .500



T_w = 进水温度 ($^\circ\text{C}$)
 P_c = 总冷却功率 (W)
 T_i = 机柜内部温度 ($^\circ\text{C}$)

60 Hz

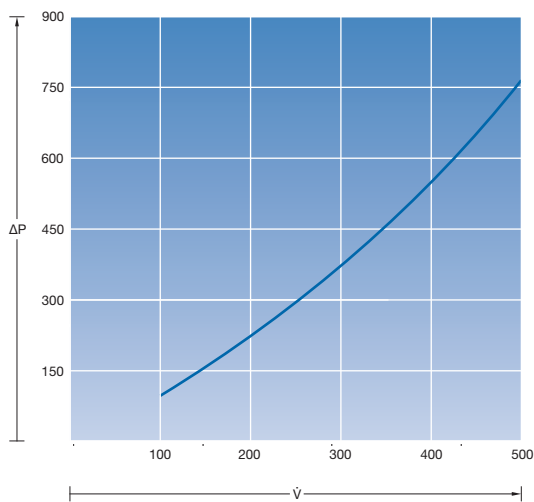
SK 3363.100, .500



T_w = 进水温度 ($^\circ\text{C}$)
 P_c = 总冷却功率 (W)
 T_i = 机柜内部温度 ($^\circ\text{C}$)

水压图

SK 3363.100, .500



\dot{V} = 容积流量 (l/h)
 ΔP = 水压力 (mbar)

液体冷却

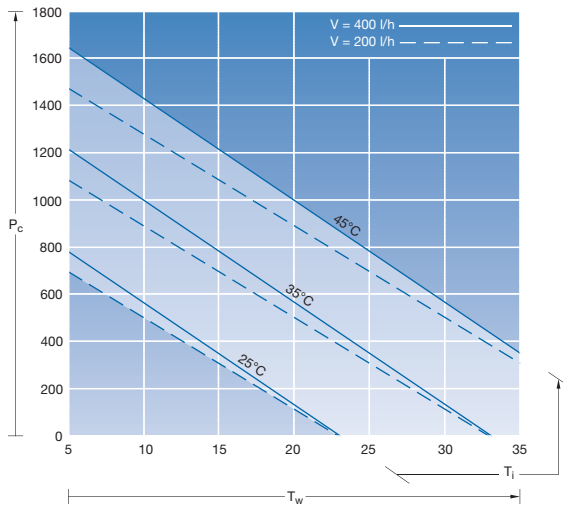
壁装式空气 / 水热交换器

有效冷却功率 1000 W

导水部件：铜 / 黄铜 (Cu/CuZn)

50 Hz

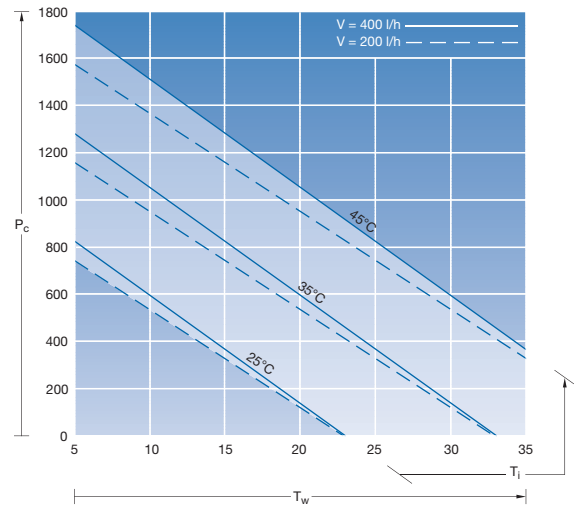
SK 3364.100, .500



T_w = 进水温度 (°C)
 P_c = 总冷却功率 (W)
 T_i = 机柜内部温度 (°C)

60 Hz

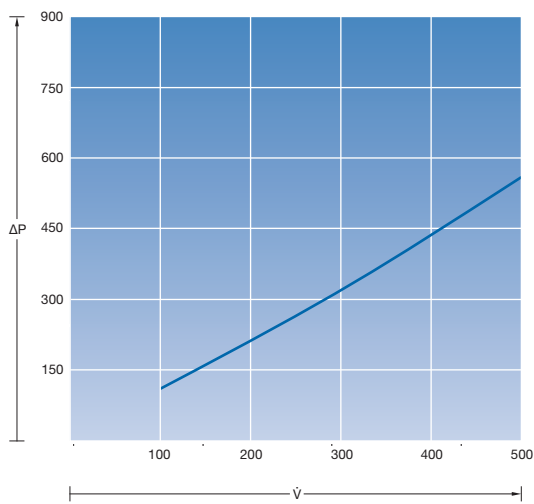
SK 3364.100, .500



T_w = 进水温度 (°C)
 P_c = 总冷却功率 (W)
 T_i = 机柜内部温度 (°C)

水压图

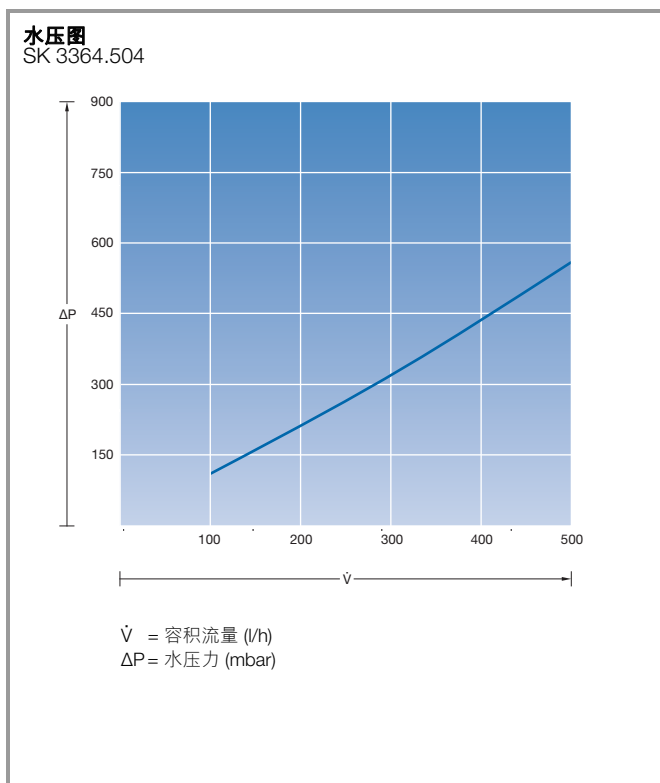
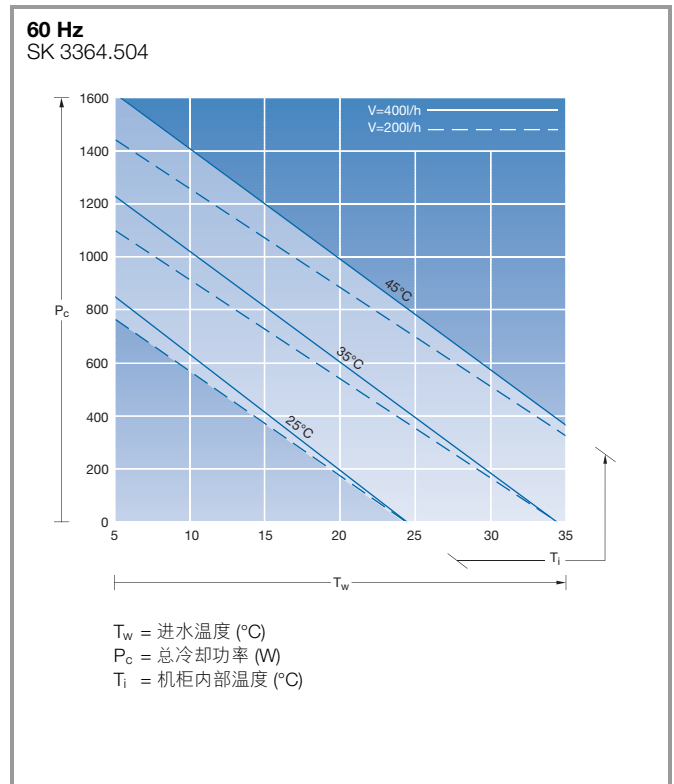
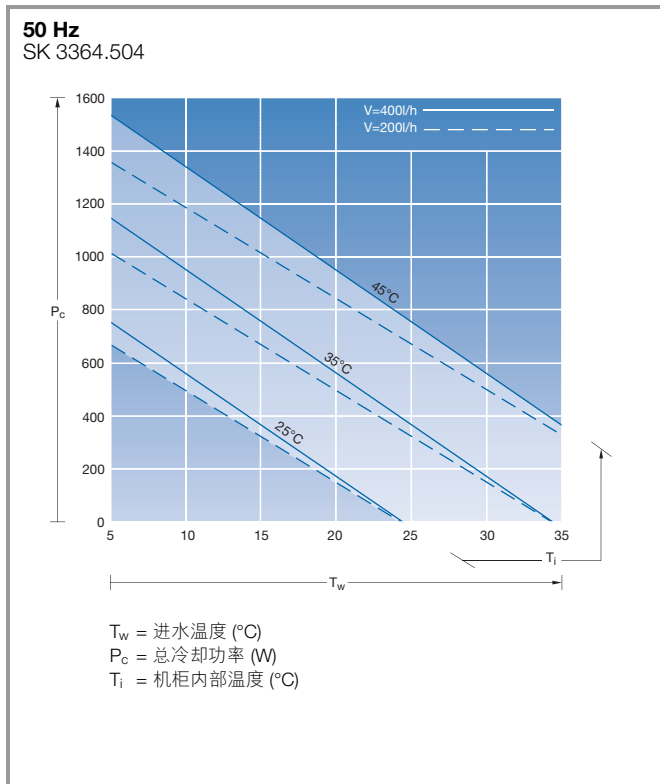
SK 3364.100, .500



\dot{V} = 容积流量 (l/h)
 ΔP = 水压力 (mbar)

壁装式空气 / 水热交换器

有效冷却功率 1000 W
 导水部件：不锈钢 (1.4571)



液体冷却

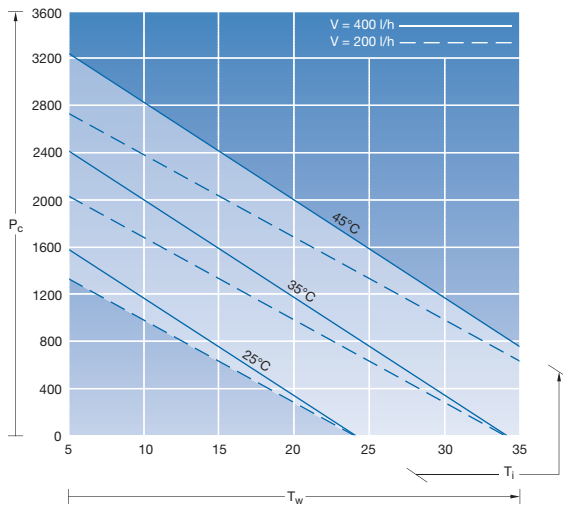
壁装式空气 / 水热交换器

有效冷却功率 2000 W

导水部件：铜 / 黄铜 (Cu/CuZn)

50 Hz

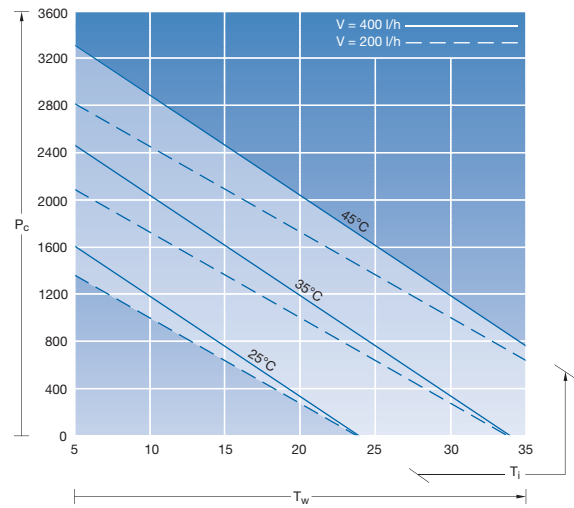
SK 3373.100, .500



T_w = 进水温度 (°C)
 P_c = 总冷却功率 (W)
 T_i = 机柜内部温度 (°C)

60 Hz

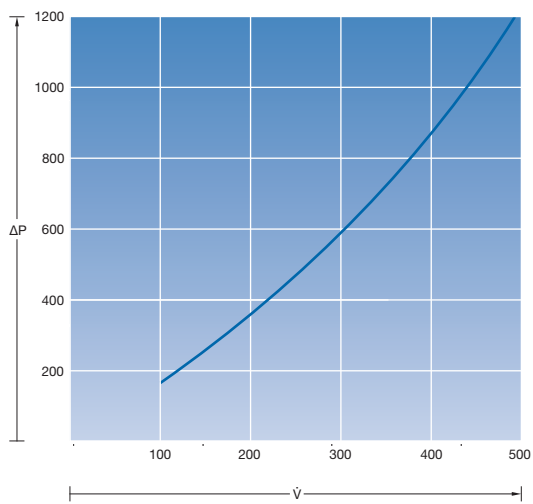
SK 3373.100, .500



T_w = 进水温度 (°C)
 P_c = 总冷却功率 (W)
 T_i = 机柜内部温度 (°C)

水压图

SK 3373.100, .500



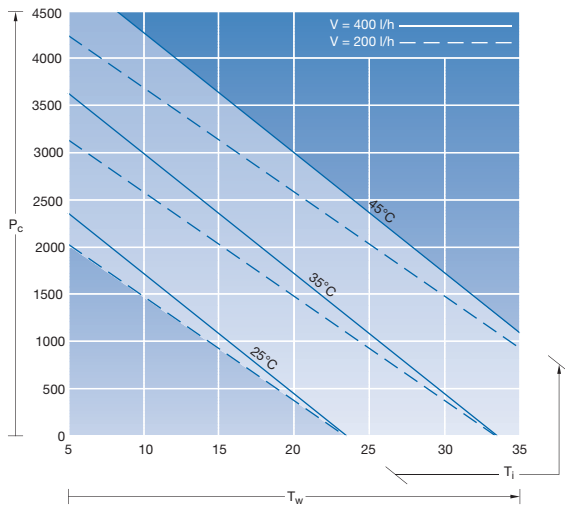
\dot{V} = 容积流量 (l/h)
 ΔP = 水压力 (mbar)

壁装式空气 / 水热交换器

有效冷却功率 3000 W

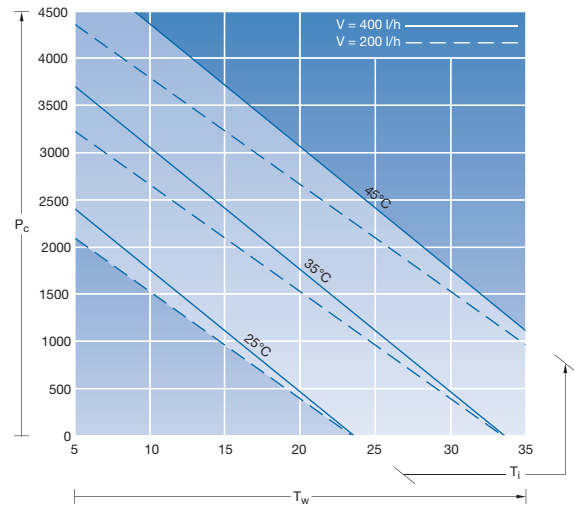
导水部件：铜 / 黄铜 (Cu/CuZn)

50 Hz
SK 3374.100, .500



T_w = 进水温度 (°C)
 P_c = 总冷却功率 (W)
 T_i = 机柜内部温度 (°C)

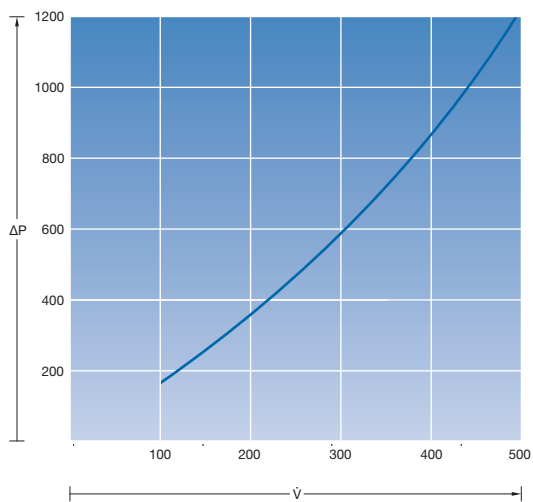
60 Hz
SK 3374.100, .500



T_w = 进水温度 (°C)
 P_c = 总冷却功率 (W)
 T_i = 机柜内部温度 (°C)

水压图

SK 3374.100, .500

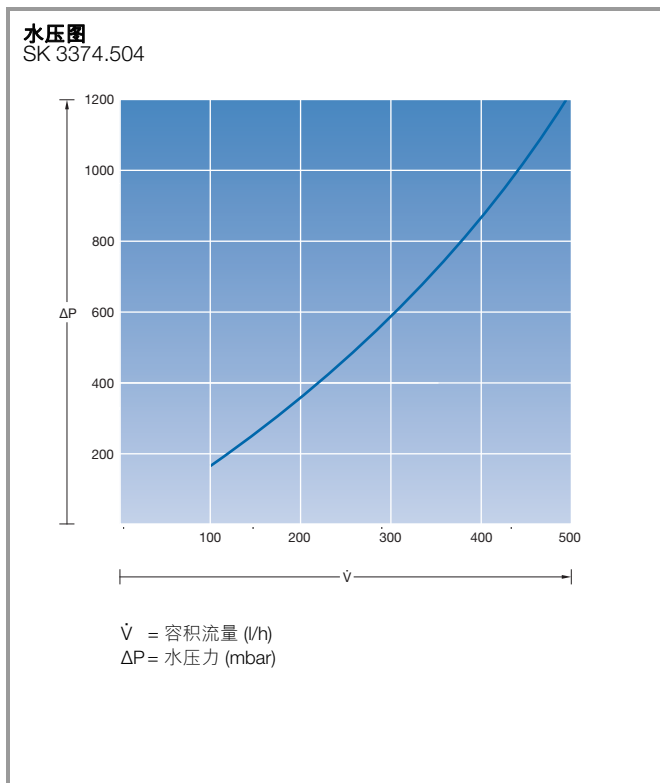
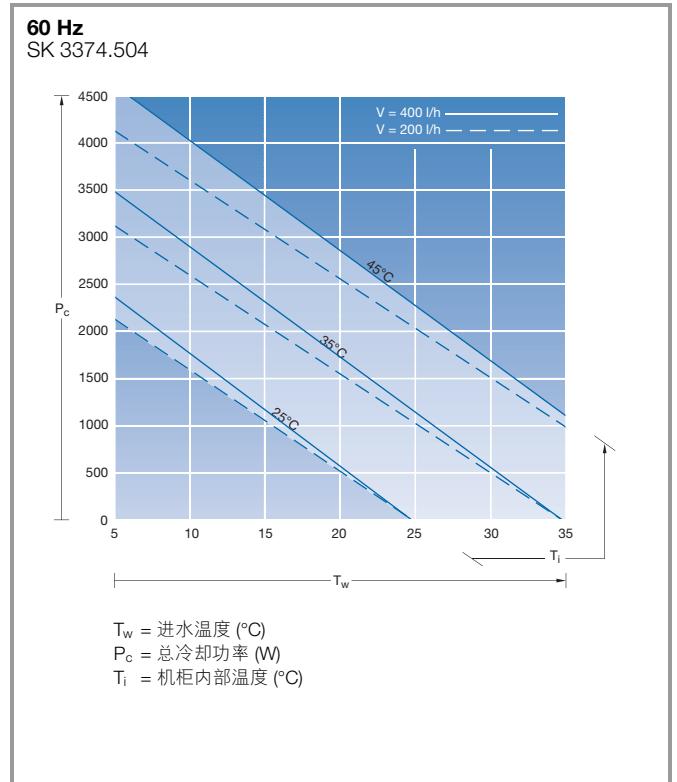
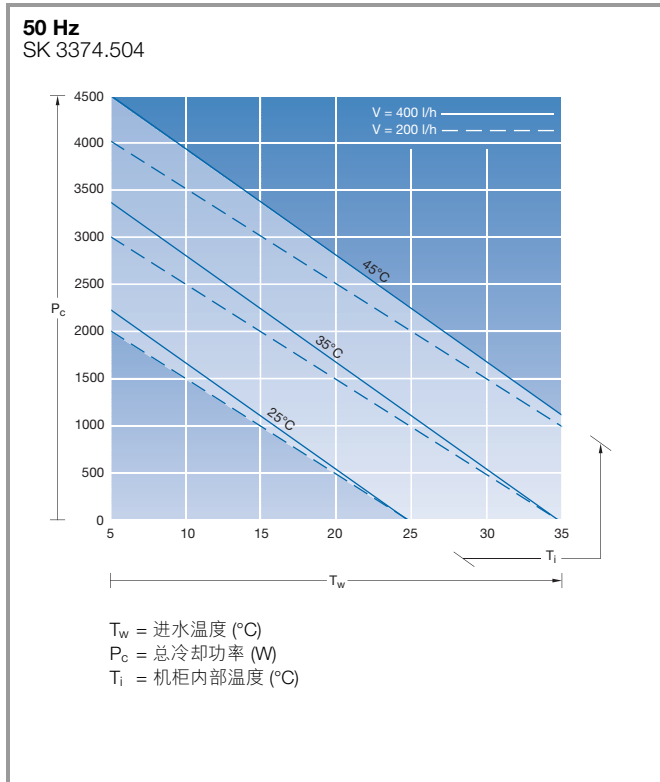


\dot{V} = 容积流量 (l/h)
 ΔP = 水压力 (mbar)

液体冷却

壁挂式空气 / 水热交换器

有效冷却功率 2500 W
 导水部件：不锈钢 (1.4571)



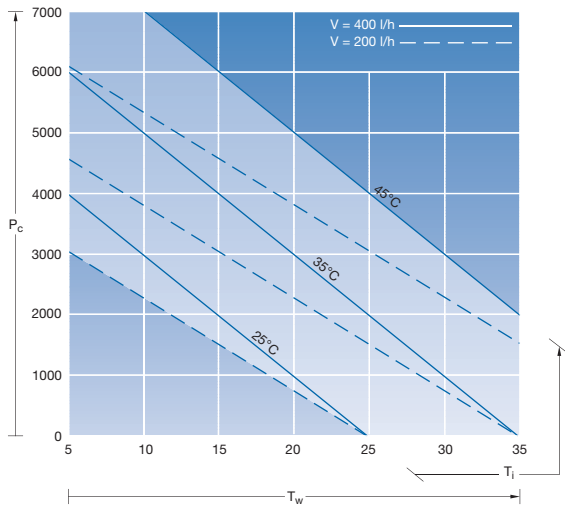
壁装式空气 / 水热交换器

有效冷却功率 5000 W

导水部件：铜 / 黄铜 (Cu/CuZn)

50 Hz

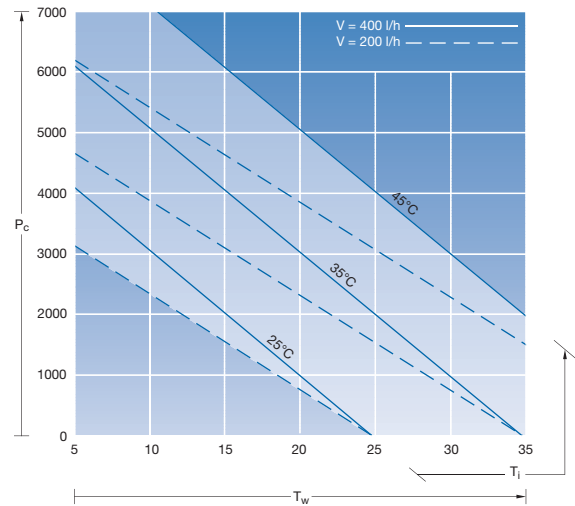
SK 3375.100, .500



T_w = 进水温度 (°C)
 P_c = 总冷却功率 (W)
 T_i = 机柜内部温度 (°C)

60 Hz

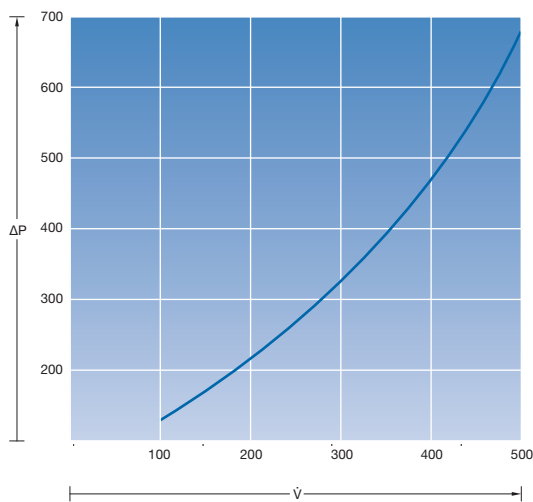
SK 3375.100, .500



T_w = 进水温度 (°C)
 P_c = 总冷却功率 (W)
 T_i = 机柜内部温度 (°C)

水压图

SK 3375.100, .500

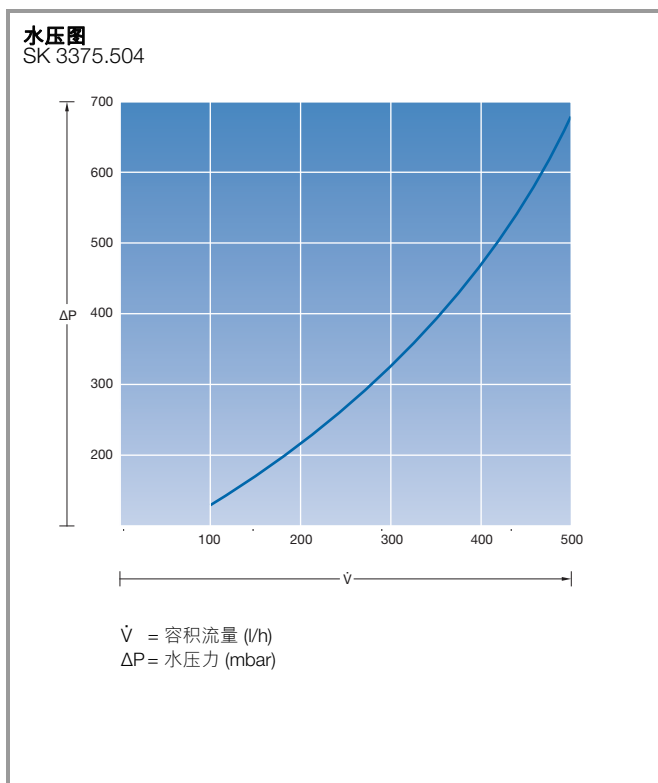
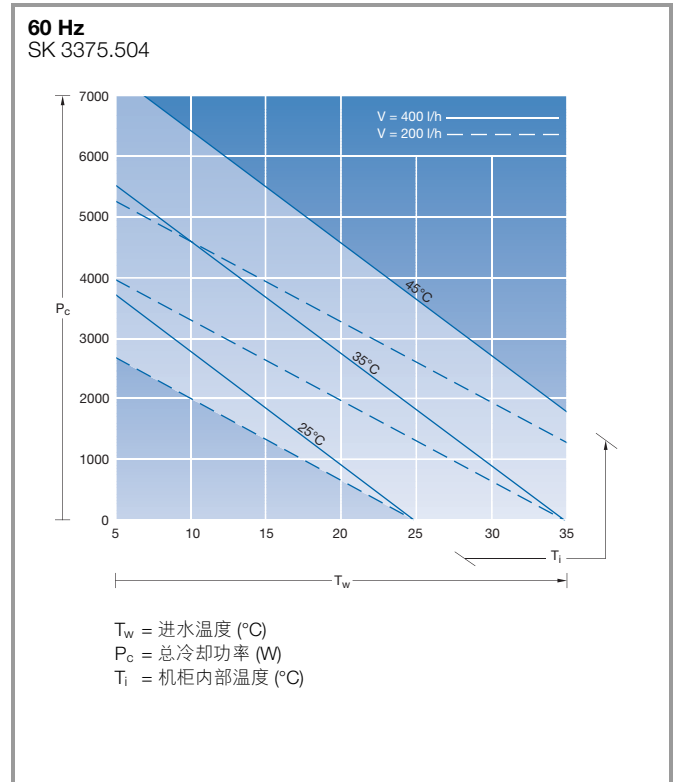
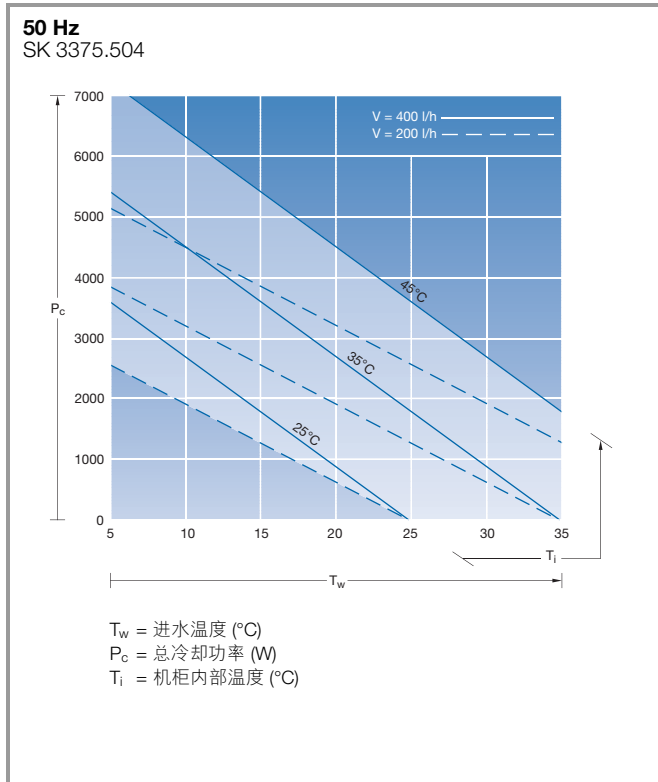


\dot{V} = 容积流量 (l/h)
 ΔP = 水压力 (mbar)

液体冷却

壁装式空气 / 水热交换器

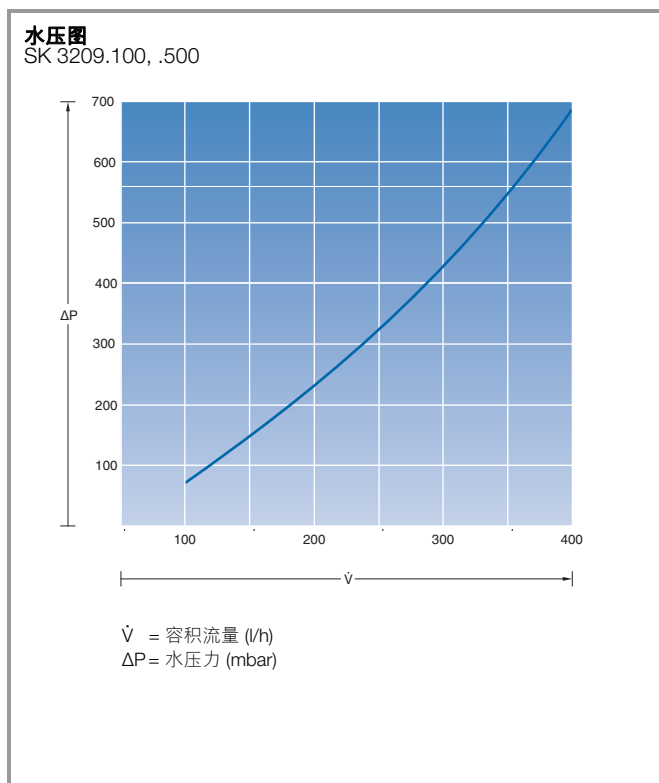
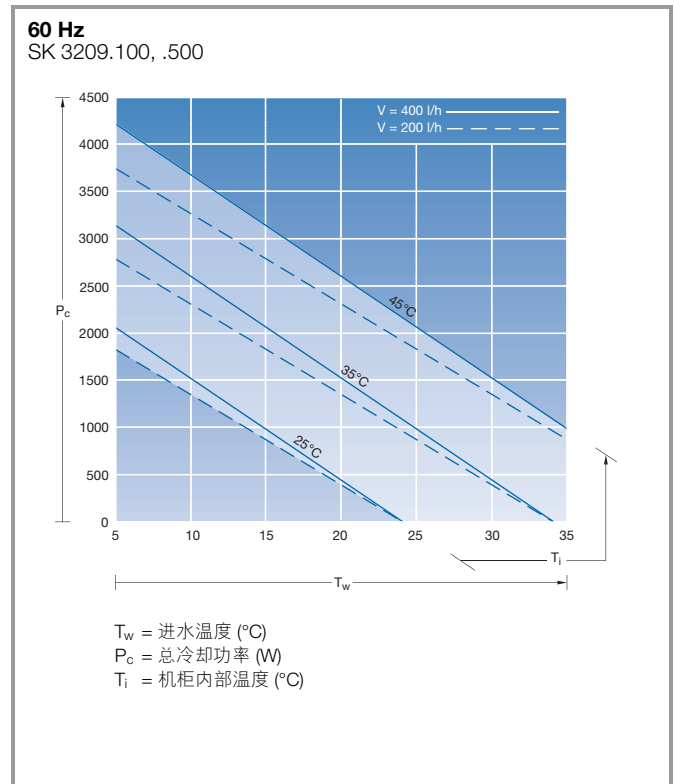
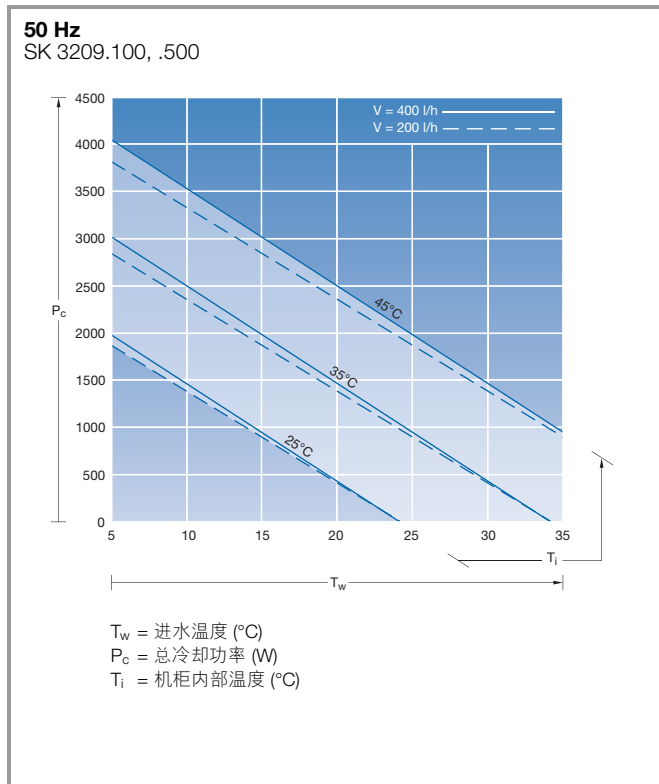
有效冷却功率 4000 W
 导水部件：不锈钢 (1.4571)



顶装式空气 / 水热交换器

有效冷却功率 2500 W

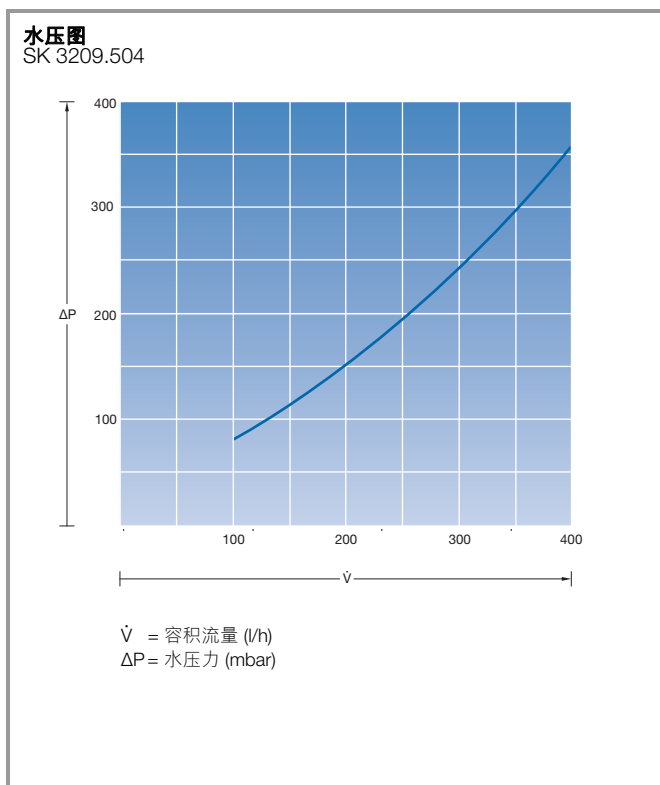
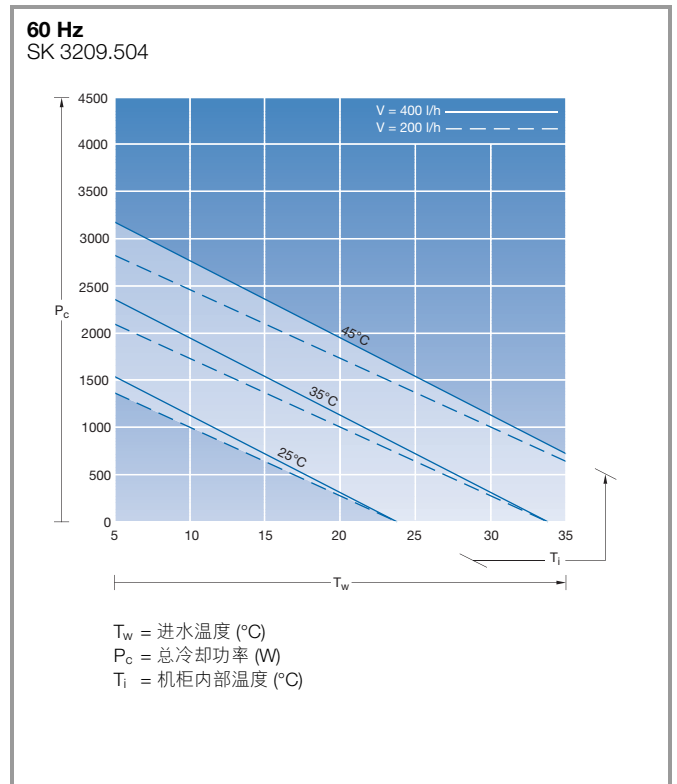
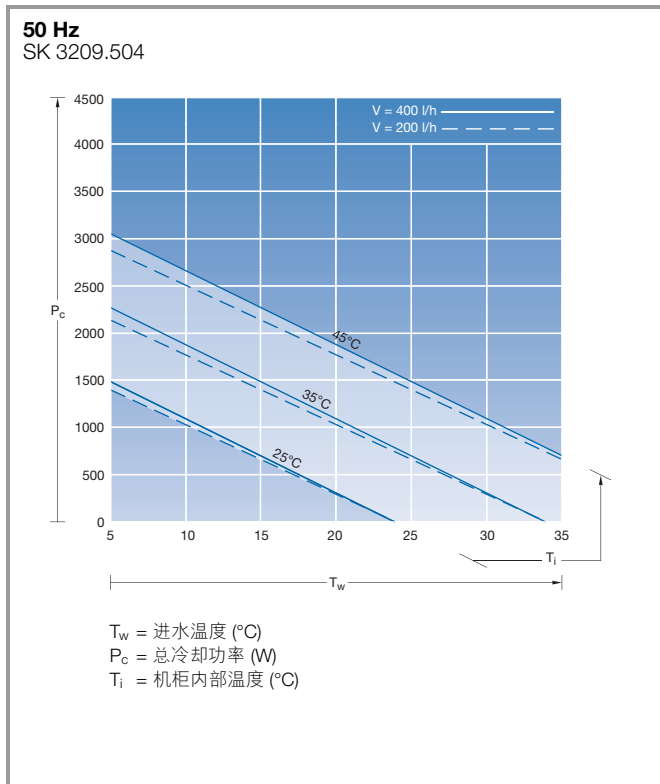
导水部件：铜 / 黄铜 (Cu/CuZn)



液体冷却

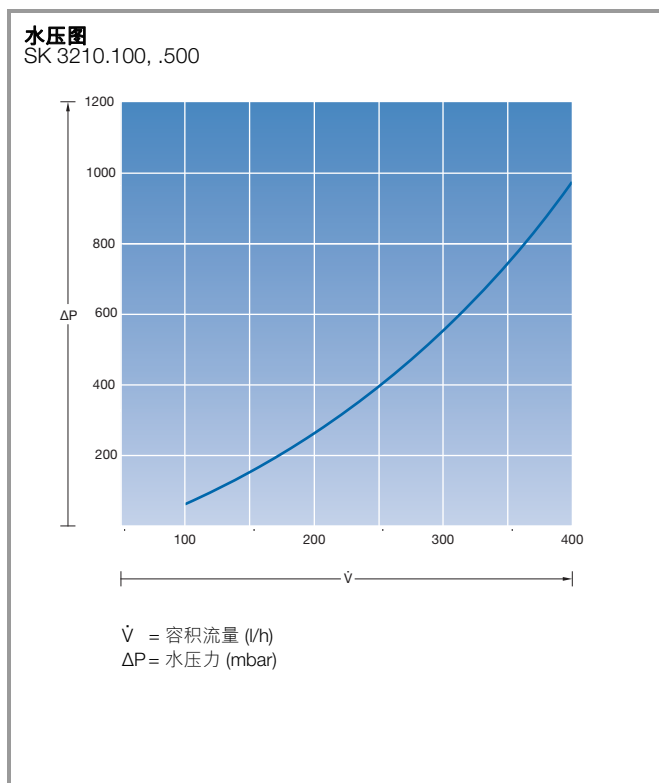
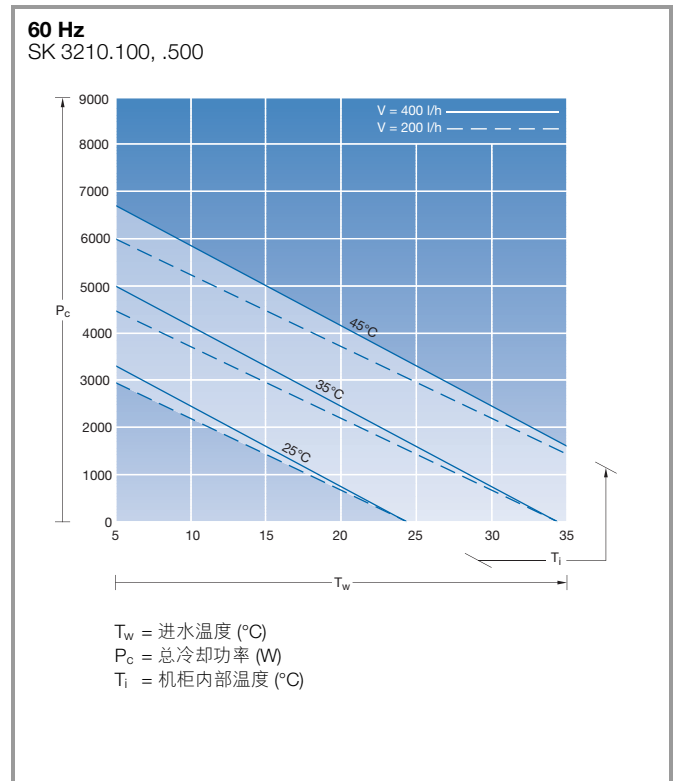
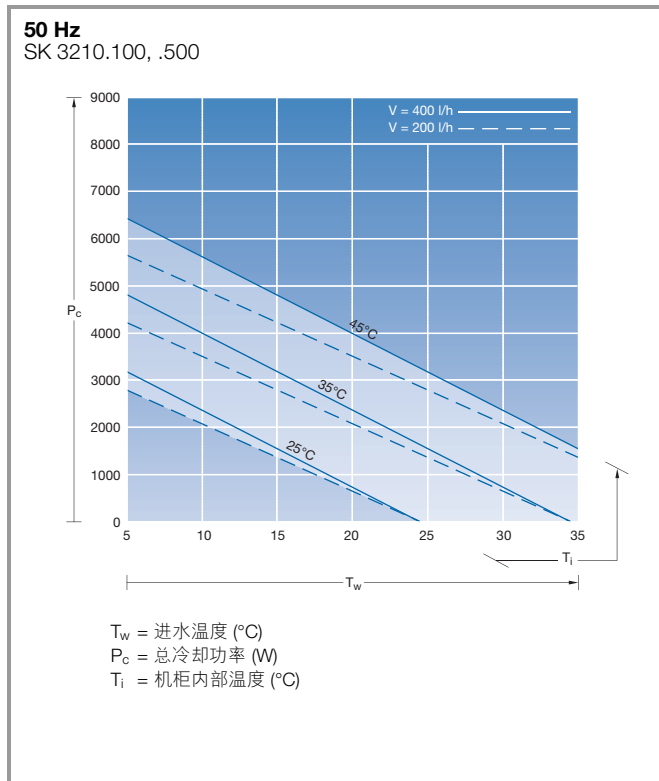
顶装式空气 / 水热交换器

有效冷却功率 1875 W
 导水部件：不锈钢 (1.4571)



顶装式空气 / 水热交换器

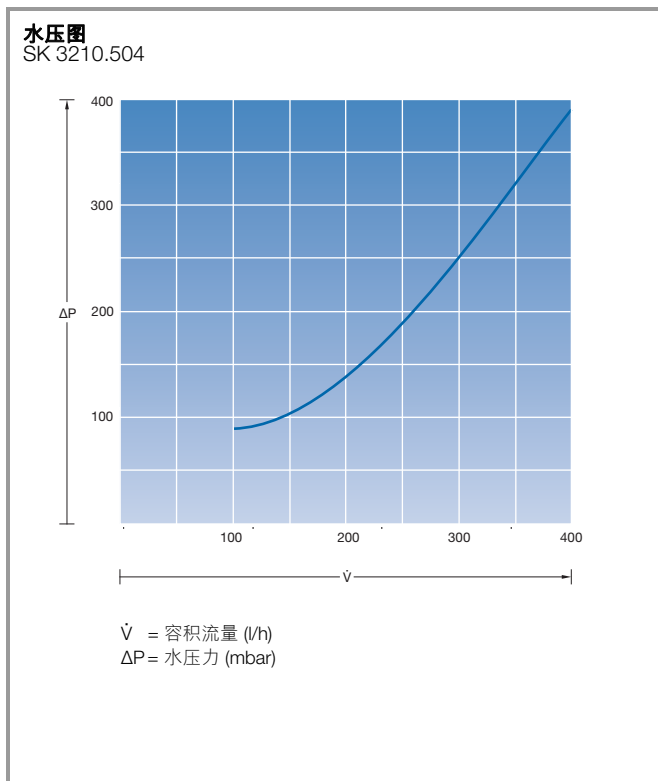
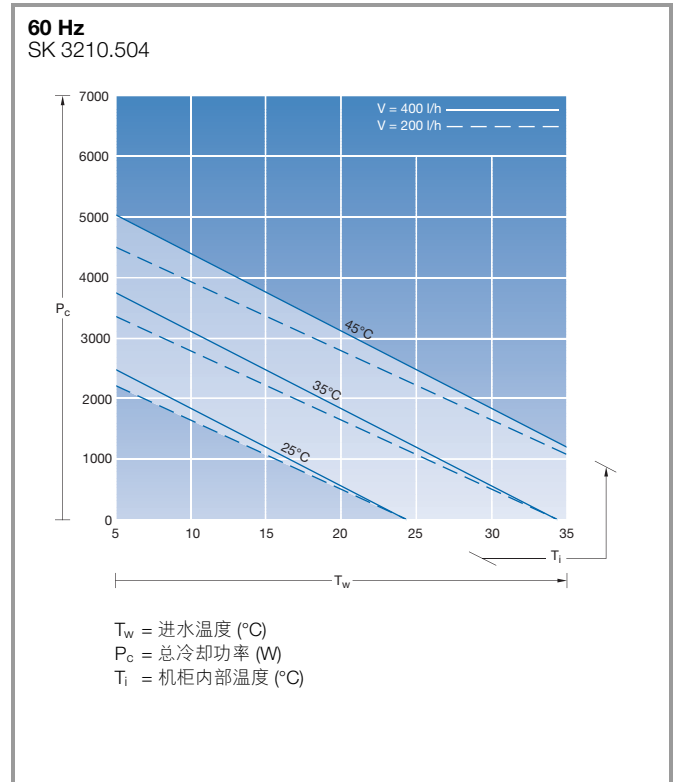
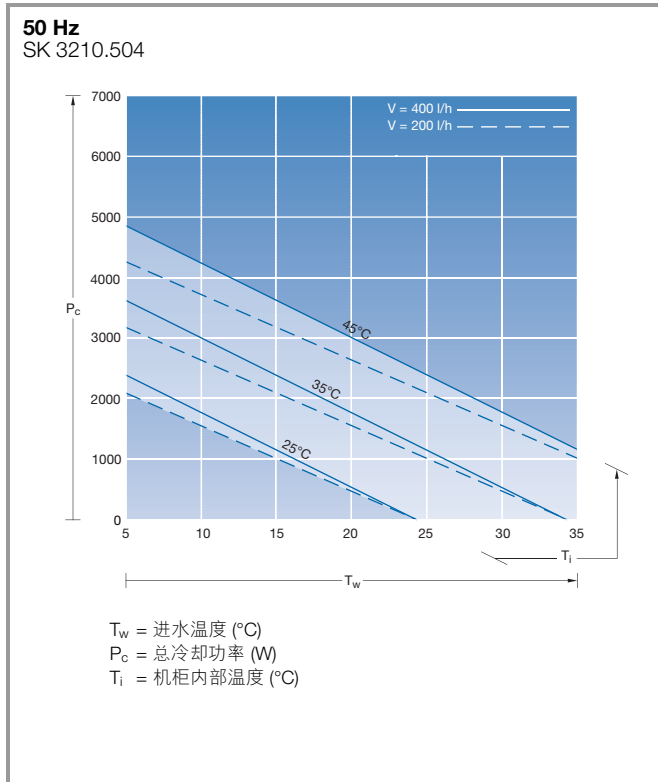
有效冷却功率 4000 W
 导水部件：铜 / 黄铜 (Cu/CuZn)



液体冷却

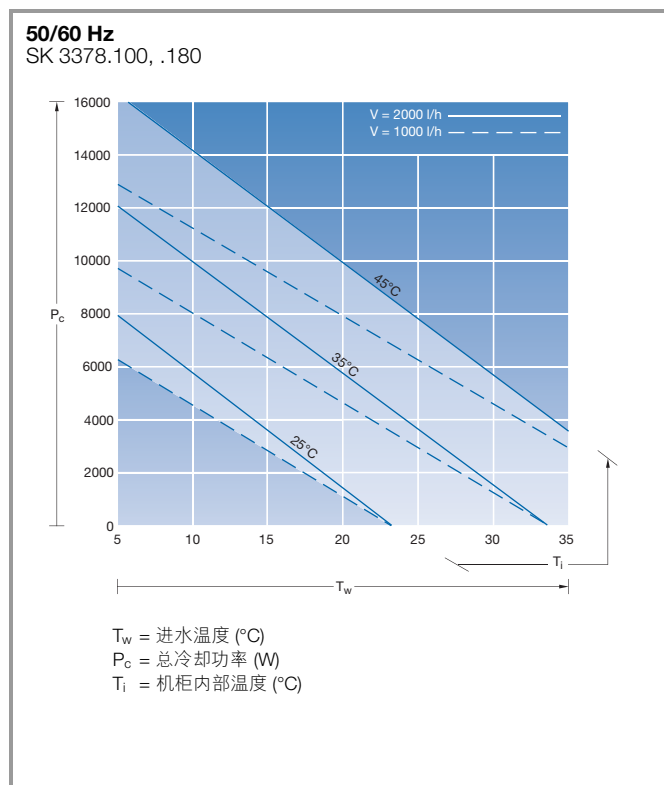
顶装式空气 / 水热交换器

有效冷却功率 3000 W
 导水部件：不锈钢 (1.4571)



液体冷却柜 (LCP)

有效冷却功率 10 kW, LCP 工业机柜
 导水部件: 铜 / 黄铜 (Cu/CuZn)

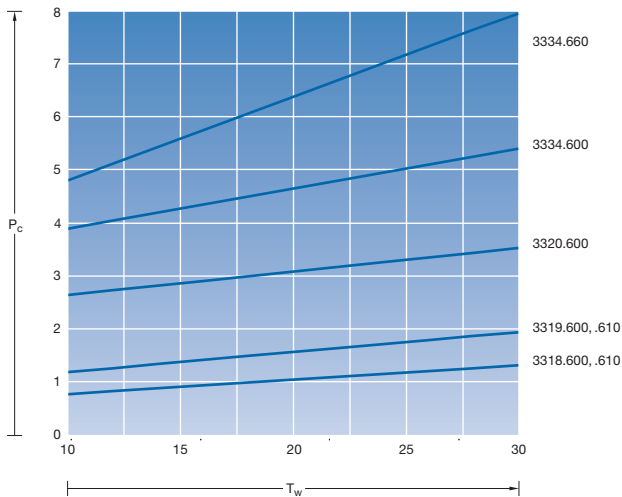


液体冷却

冷水机 TopTherm

有效冷却功率 1 – 6 kW

50 Hz 在 $T_u = 32^\circ\text{C}$ (环境温度)

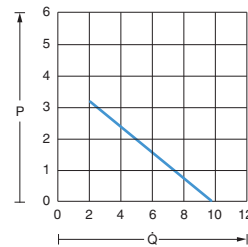


T_w = 进水温度 (°C)
 P_c = 总冷却功率 (kW)

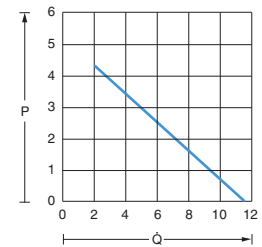
泵特性曲线

SK 3318.600/SK 3318.610/ SK 3319.600/SK 3319.610

50 Hz

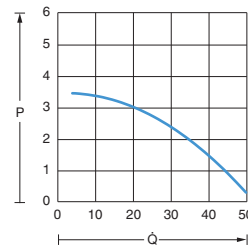


60 Hz

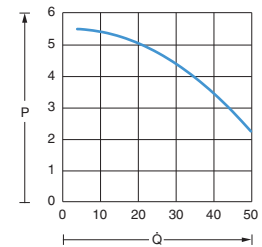


SK 3320.600/SK 3334.600/SK 3334.660

50 Hz



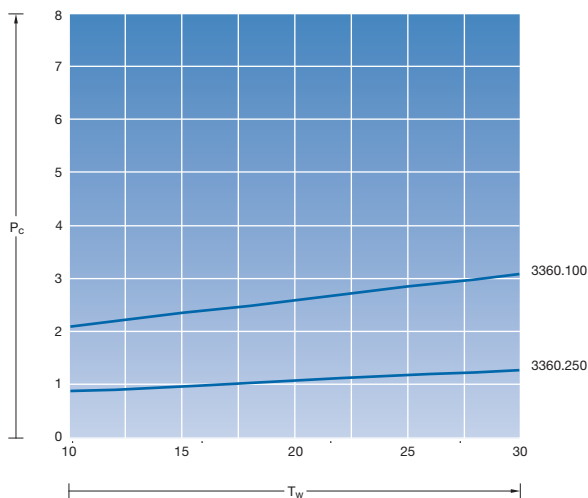
60 Hz



P = 外部静压 [bar]
Q = 输送流量 [l/min]

壁挂式, 有效冷却功率 1 – 2.5 kW

50 Hz 在 $T_u = 32^\circ\text{C}$ (环境温度)

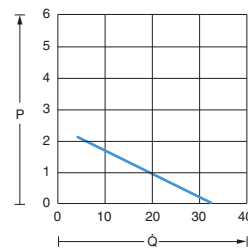


T_w = 进水温度 (°C)
 P_c = 总冷却功率 (kW)

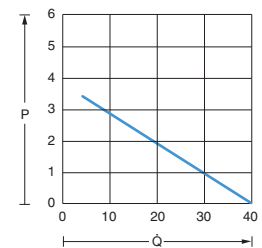
泵特性曲线

SK 3360.100, .250

50 Hz



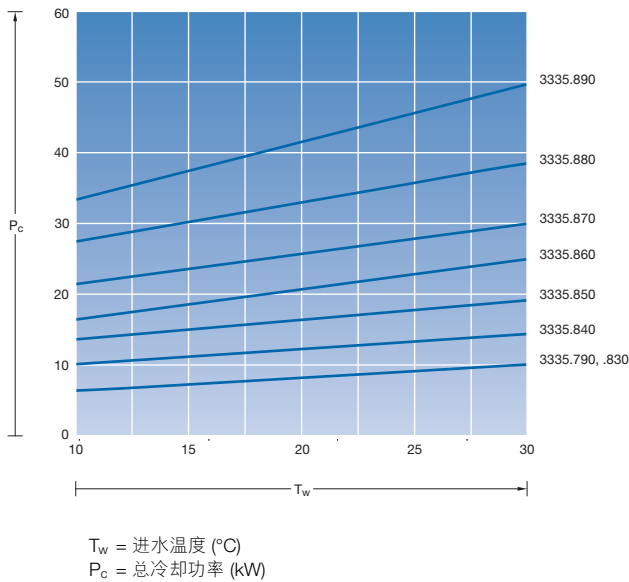
60 Hz



P = 外部静压 [bar]
Q = 输送流量 [l/min]

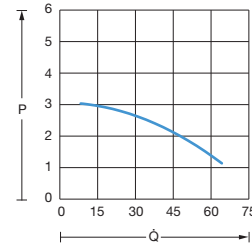
冷水机 TopTherm 有效冷却功率 8 – 40 kW

50 Hz 在 $T_u = 32^\circ\text{C}$ (环境温度)

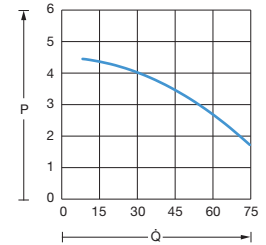


泵特性曲线
SK 3335.850

50 Hz

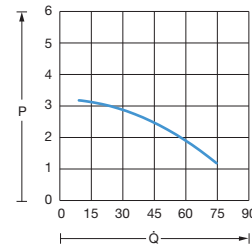


60 Hz

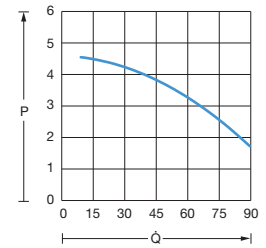


SK 3335.860

50 Hz

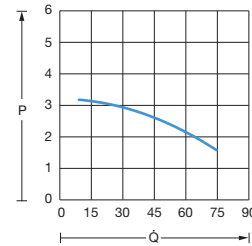


60 Hz

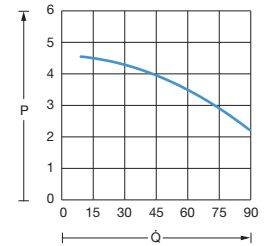


SK 3335.870

50 Hz



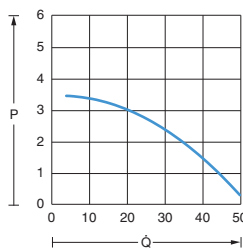
60 Hz



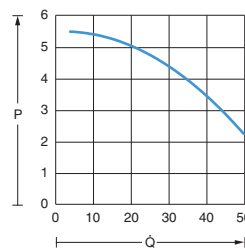
泵特性曲线

SK 3335.790, .830

50 Hz

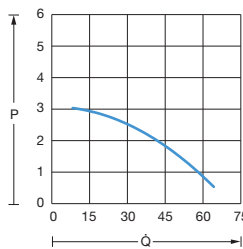


60 Hz

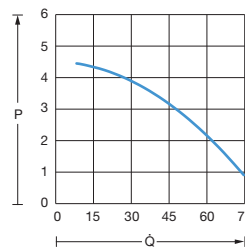


SK 3335.840

50 Hz

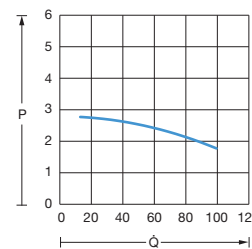


60 Hz

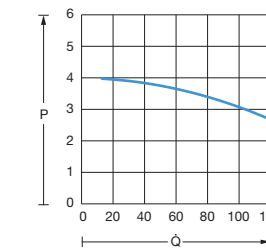


SK 3335.880

50 Hz

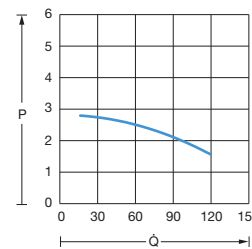


60 Hz

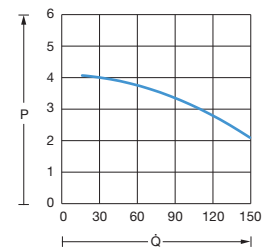


SK 3335.890

50 Hz



60 Hz

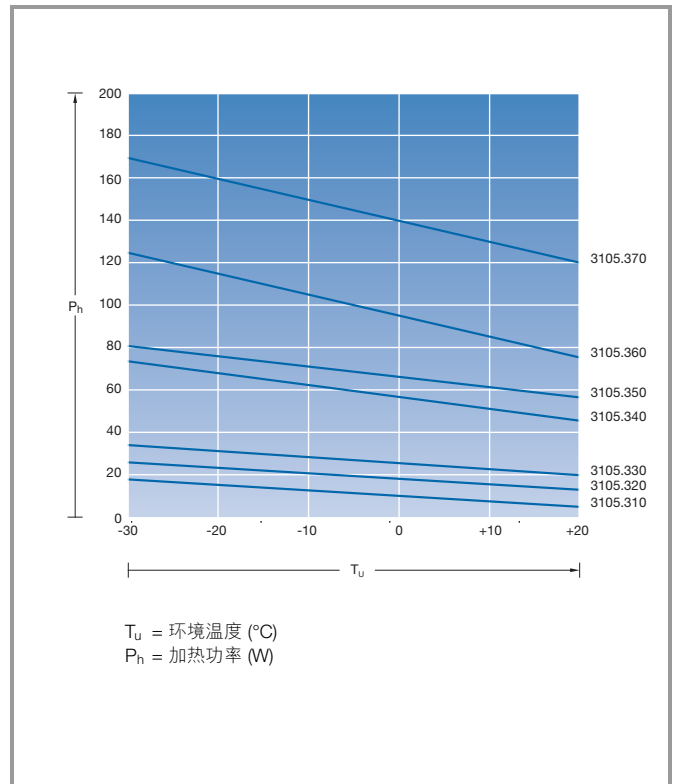
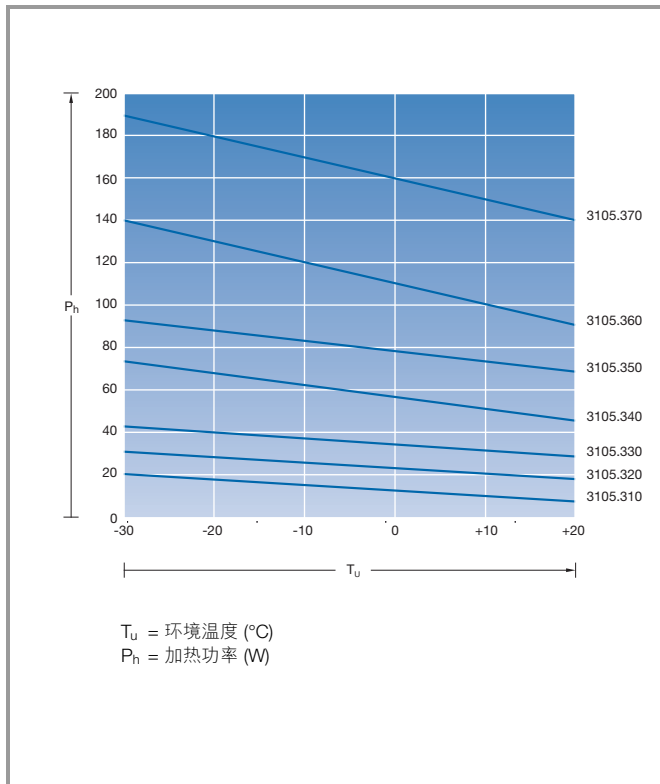


P = 外部静压 [bar]
 \dot{Q} = 输送流量 [l/min]

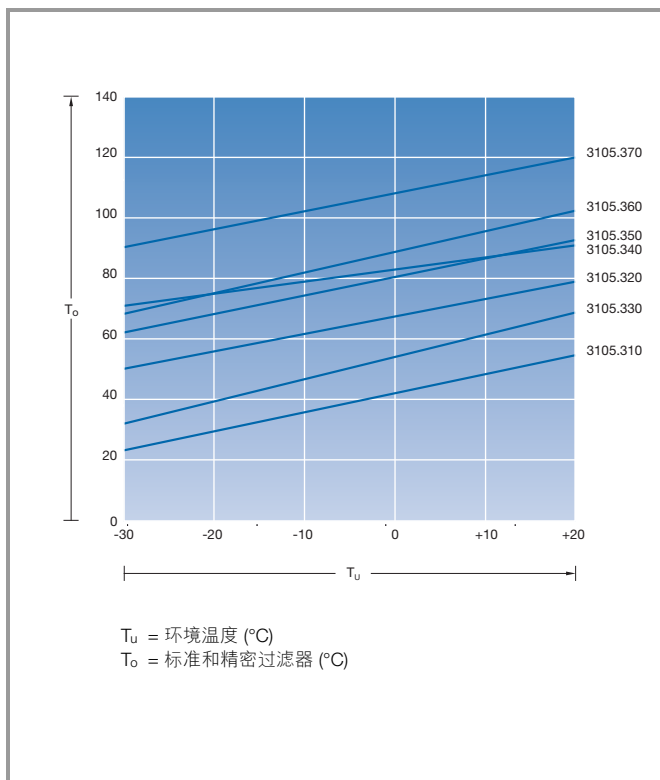
机柜加热器

控制机柜加热装置，无风扇 230 V

110 V

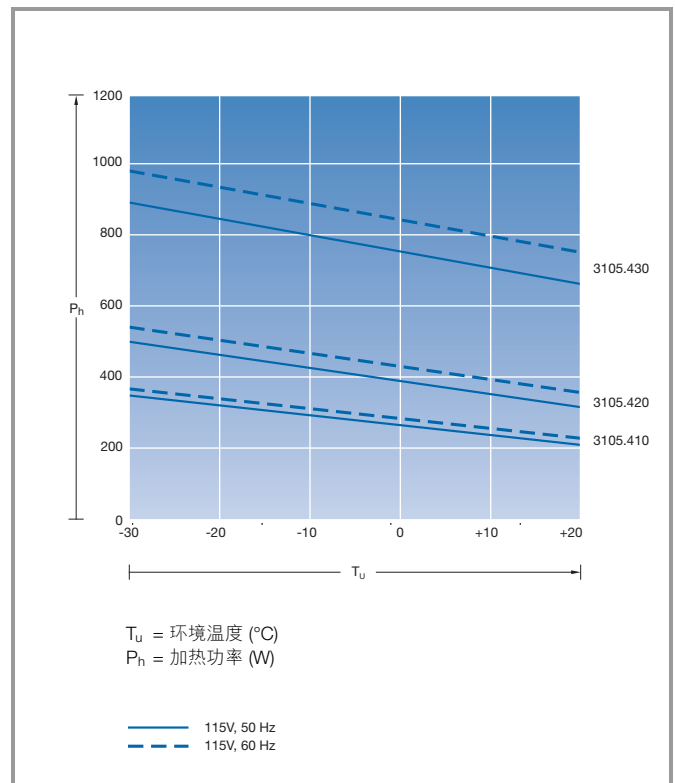
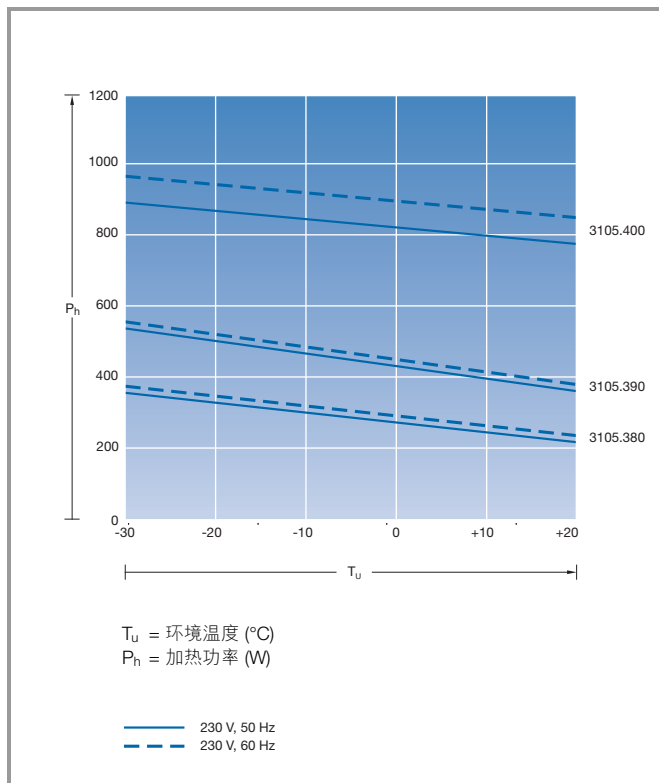


最高表面温度

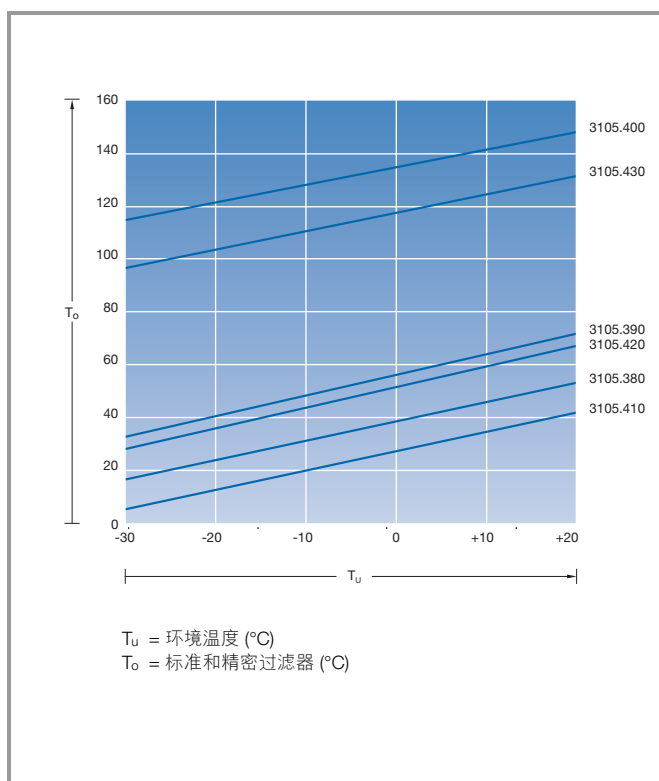


控制机柜加热装置，带风扇 230 V, 50/60 Hz

115 V, 50/60 Hz



最高表面温度



Rittal – The System.

Faster – better – everywhere.

- 机箱机柜
- 配电组件
- 温控系统
- IT 基础设施
- 软件与服务

通过二维码，
您可获得全球威图的联系方式。



www.rittal.com/contact

ENCLOSURES

POWER DISTRIBUTION

CLIMATE CONTROL

IT INFRASTRUCTURE

SOFTWARE & SERVICES



FRIEDHELM LOH GROUP