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Performance diagrams – Climate control

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Performance diagrams

Cooling with ambient air

Cooling units

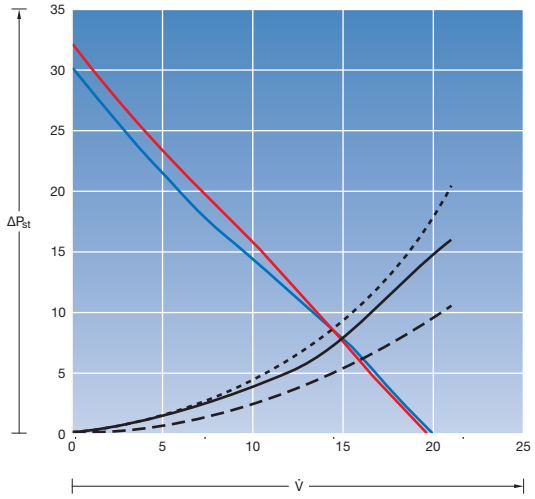
Cooling with water

Enclosure heaters

TopTherm fan-and-filter units and EMC TopTherm fan-and-filter units

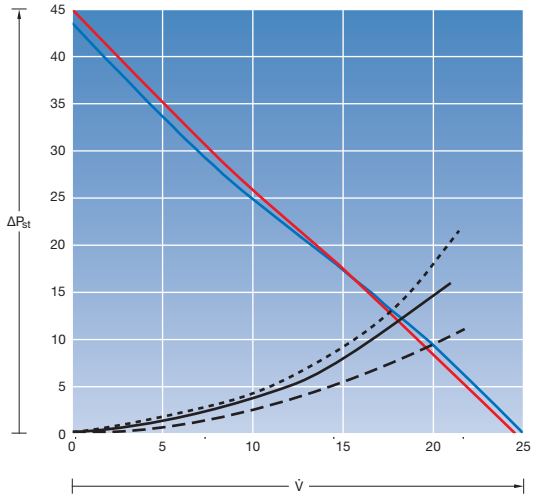
Air throughput 20/25 m³/h

50 Hz
SK 3237.100, .110, .124, .600



V̇ = Volumetric flow (m³/h)
ΔPst = Stat. pressure difference (Pa)
= with standard filter
= with hose-proof hood
= 1 x outlet filter with hose-proof hood
= 1 x outlet filter
= 2 x outlet filter

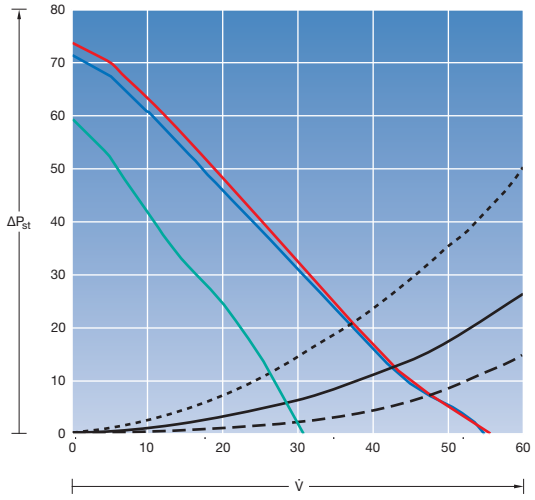
60 Hz
SK 3237.100, .110, .600



V̇ = Volumetric flow (m³/h)
ΔPst = Stat. pressure difference (Pa)
= with standard filter
= with hose-proof hood
= 1 x outlet filter with hose-proof hood
= 1 x outlet filter
= 2 x outlet filter

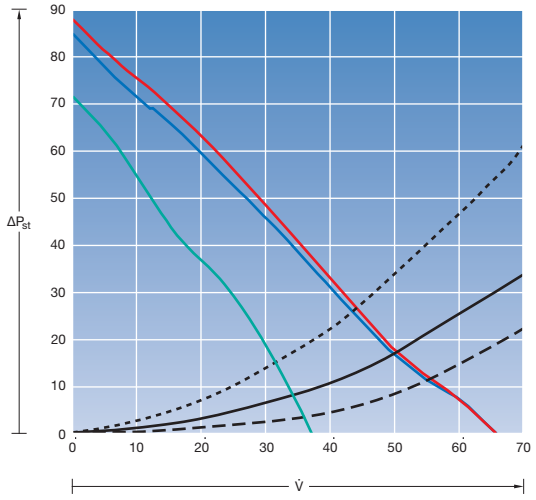
Air throughput 55/66 m³/h

50 Hz
SK 3238.100, .110, .124, .600



V̇ = Volumetric flow (m³/h)
ΔPst = Stat. pressure difference (Pa)
= with standard filter
= with hose-proof hood
= with standard and fine filter
= 1 x outlet filter with hose-proof hood
= 1 x outlet filter
= 2 x outlet filter

60 Hz
SK 3238.100, .110, .600

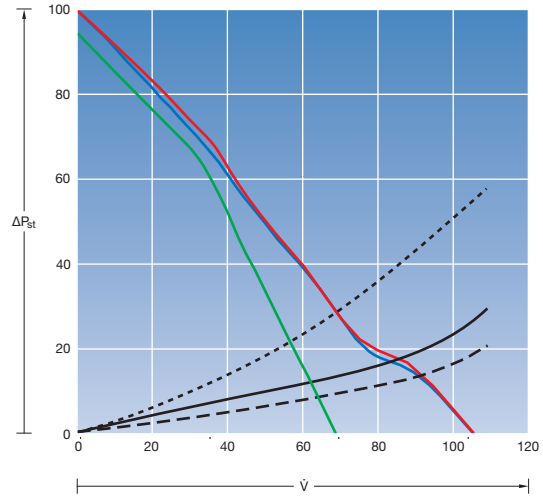


V̇ = Volumetric flow (m³/h)
ΔPst = Stat. pressure difference (Pa)
= with standard filter
= with hose-proof hood
= with standard and fine filter
= 1 x outlet filter with hose-proof hood
= 1 x outlet filter
= 2 x outlet filter

TopTherm fan-and-filter units and EMC TopTherm fan-and-filter units

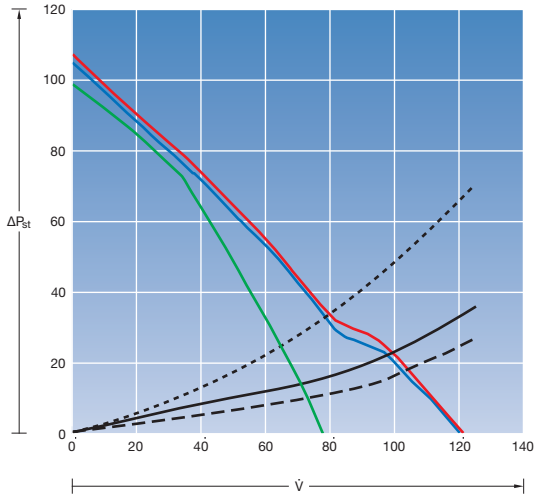
Air throughput 105/120 m³/h

50 Hz
SK 3239.100, .110, .124, .600



V̇ = Volumetric flow (m³/h)
ΔPst = Stat. pressure difference (Pa)
= with standard filter
= with hose-proof hood
= with standard and fine filter
= 1 x outlet filter with hose-proof hood
= 1 x outlet filter
= 2 x outlet filter

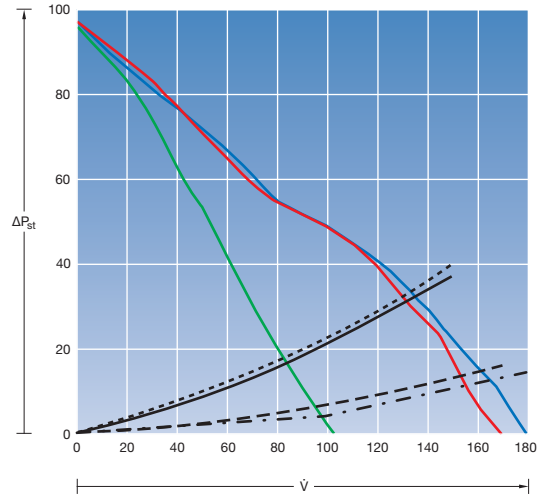
60 Hz
SK 3239.100, .110, .600



V̇ = Volumetric flow (m³/h)
ΔPst = Stat. pressure difference (Pa)
= with standard filter
= with hose-proof hood
= with standard and fine filter
= 1 x outlet filter with hose-proof hood
= 1 x outlet filter
= 2 x outlet filter

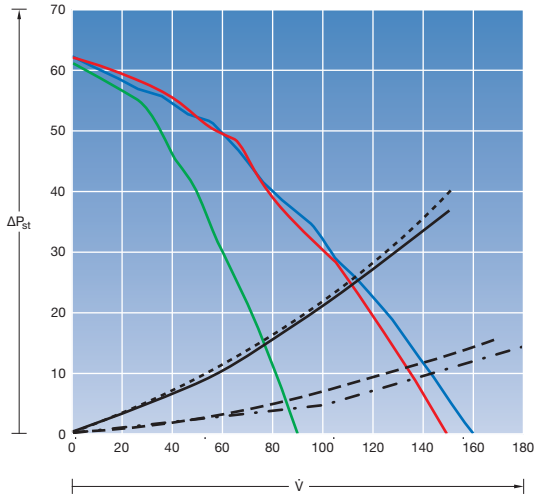
Air throughput 180/160 m³/h

50 Hz
SK 3240.100, .110, .124, .600



V̇ = Volumetric flow (m³/h)
ΔPst = Stat. pressure difference (Pa)
= with standard filter
= with hose-proof hood
= with standard and fine filter
= 1 x outlet filter with hose-proof hood
= 1 x outlet filter
= 2 x outlet filter
= 1 x roof vent 3138.000 with filter

60 Hz
SK 3240.100, .110, .600

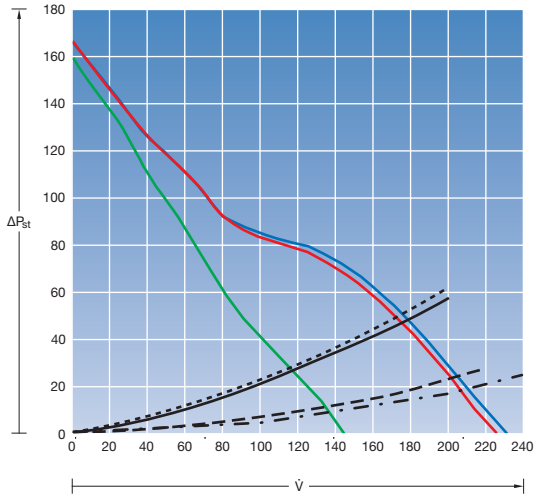


V̇ = Volumetric flow (m³/h)
ΔPst = Stat. pressure difference (Pa)
= with standard filter
= with hose-proof hood
= with standard and fine filter
= 1 x outlet filter with hose-proof hood
= 1 x outlet filter
= 2 x outlet filter
= 1 x roof vent 3138.000 with filter

TopTherm fan-and-filter units and EMC TopTherm fan-and-filter units

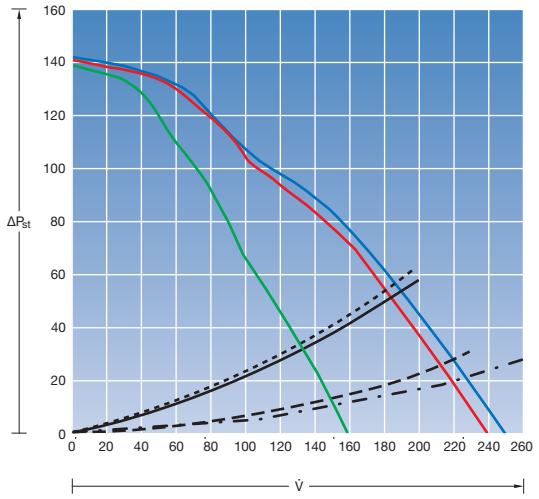
Air throughput 230/250 m³/h

50 Hz
SK 3241.100, .110, .124, .600



V̇ = Volumetric flow (m³/h)
ΔPst = Stat. pressure difference (Pa)
= with standard filter
= with hose-proof hood
= with standard and fine filter
= 1 x outlet filter with hose-proof hood
= 1 x outlet filter
= 2 x outlet filter
= 1 x roof vent 3138.000 with filter

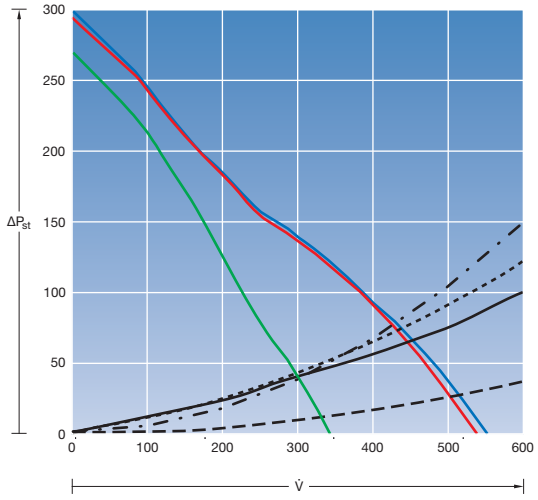
60 Hz
SK 3241.100, .110, .600



V̇ = Volumetric flow (m³/h)
ΔPst = Stat. pressure difference (Pa)
= with standard filter
= with hose-proof hood
= with standard and fine filter
= 1 x outlet filter with hose-proof hood
= 1 x outlet filter
= 2 x outlet filter
= 1 x roof vent 3138.000 with filter

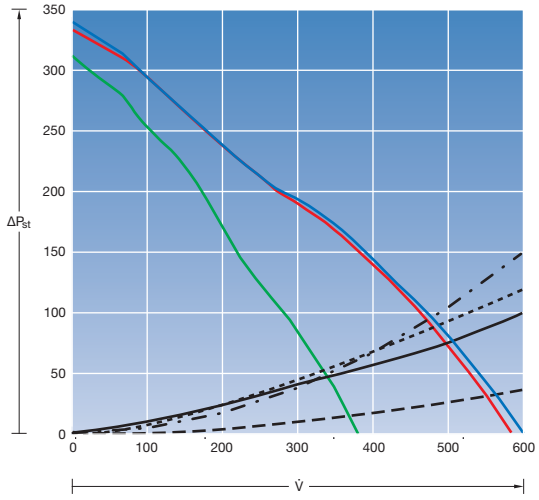
Air throughput 550/600 m³/h

50 Hz
SK 3243.100, .110, .600



V̇ = Volumetric flow (m³/h)
ΔPst = Stat. pressure difference (Pa)
= with standard filter
= with hose-proof hood
= with standard and fine filter
= 1 x outlet filter with hose-proof hood
= 1 x outlet filter
= 2 x outlet filter
= 1 x roof vent 3138.000 with filter

60 Hz
SK 3243.100, .110, .600

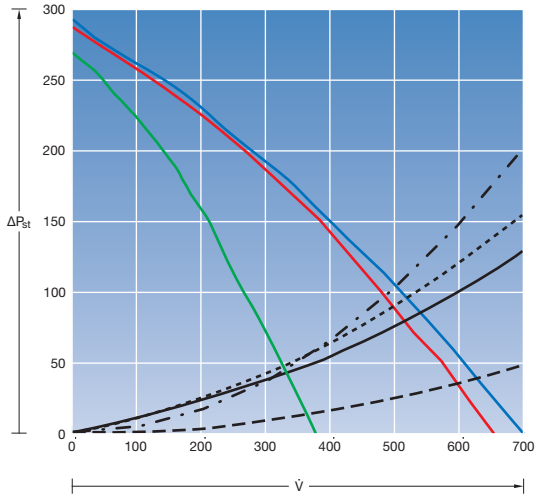


V̇ = Volumetric flow (m³/h)
ΔPst = Stat. pressure difference (Pa)
= with standard filter
= with hose-proof hood
= with standard and fine filter
= 1 x outlet filter with hose-proof hood
= 1 x outlet filter
= 2 x outlet filter
= 1 x roof vent 3138.000 with filter

TopTherm fan-and-filter units and EMC TopTherm fan-and-filter units

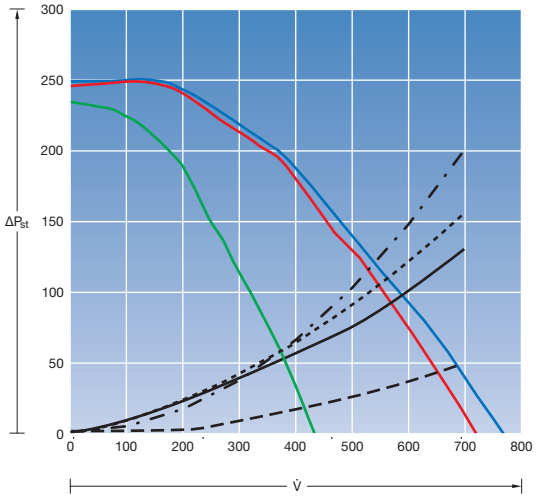
Air throughput 700/770 m³/h

50 Hz
SK 3244.100, .110, .140, .600



V̇ = Volumetric flow (m³/h)
ΔPst = Stat. pressure difference (Pa)
= with standard filter
= with hose-proof hood
= with standard and fine filter
= 1 x outlet filter with hose-proof hood
= 1 x outlet filter
= 2 x outlet filter
= 1 x roof vent 3138.000 with filter

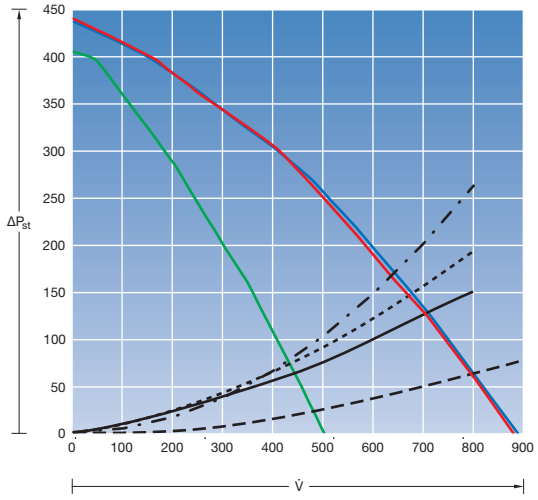
60 Hz
SK 3244.100, .110, .140, .600



V̇ = Volumetric flow (m³/h)
ΔPst = Stat. pressure difference (Pa)
= with standard filter
= with hose-proof hood
= with standard and fine filter
= 1 x outlet filter with hose-proof hood
= 1 x outlet filter
= 2 x outlet filter
= 1 x roof vent 3138.000 with filter

Air throughput 900 m³/h

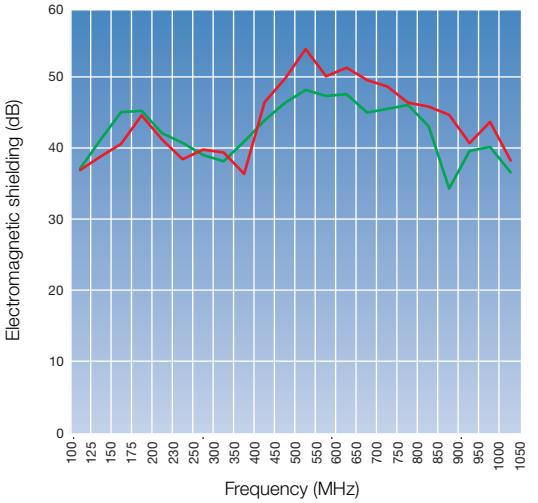
50/60 Hz
SK 3245.600



V̇ = Volumetric flow (m³/h)
ΔPst = Stat. pressure difference (Pa)
= with standard filter
= with hose-proof hood
= with standard and fine filter
= 1 x outlet filter with hose-proof hood
= 1 x outlet filter
= 2 x outlet filter
= 1 x roof vent 3138.000 with filter

Shielding/attenuation diagram
Testing to EN 61587-3: 2006 – Electromagnetic shielding performance tests for cabinets, racks and sub-racks

TopTherm EMC fan-and-filter units/outlet filters
SK 3237.XXX – SK 3245.XXX

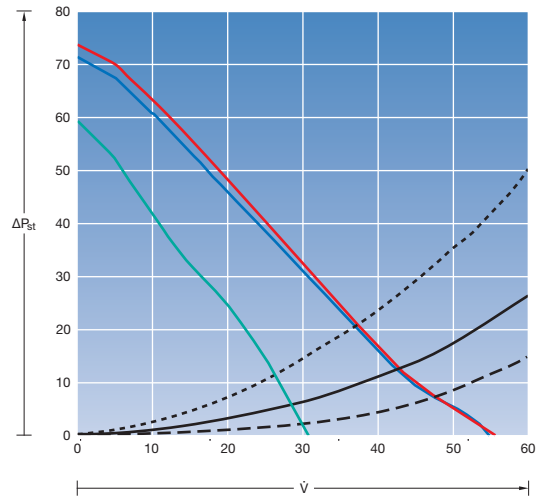


= vertical attenuation
= horizontal attenuation

TopTherm fan-and-filter units with EC technology

Air throughput 55 m³/h

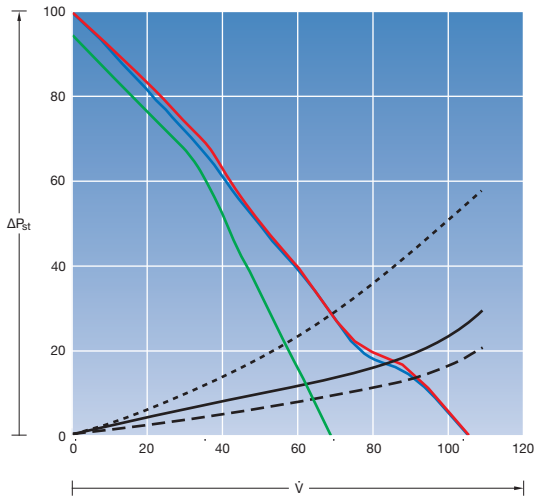
50/60 Hz
SK 3238.500



V̇ = Volumetric flow (m³/h)
ΔPst = Stat. pressure difference (Pa)
= with standard filter
= with hose-proof hood
= with standard and fine filter
= 1 x outlet filter with hose-proof hood
= 1 x outlet filter
= 2 x outlet filter

Air throughput 105 m³/h

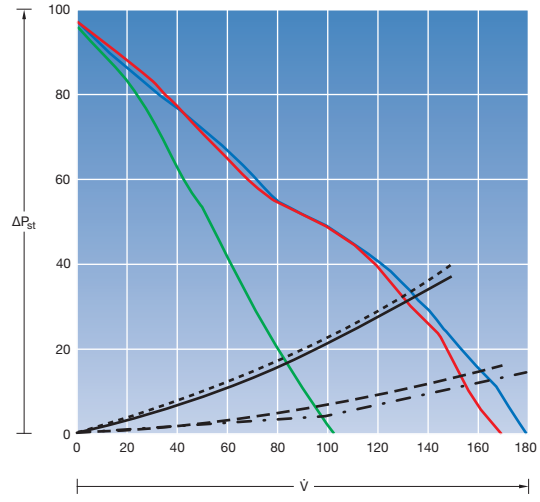
50/60 Hz
SK 3239.500



V̇ = Volumetric flow (m³/h)
ΔPst = Stat. pressure difference (Pa)
= with standard filter
= with hose-proof hood
= with standard and fine filter
= 1 x outlet filter with hose-proof hood
= 1 x outlet filter
= 2 x outlet filter

Air throughput 180 m³/h

50/60 Hz
SK 3240.500



V̇ = Volumetric flow (m³/h)
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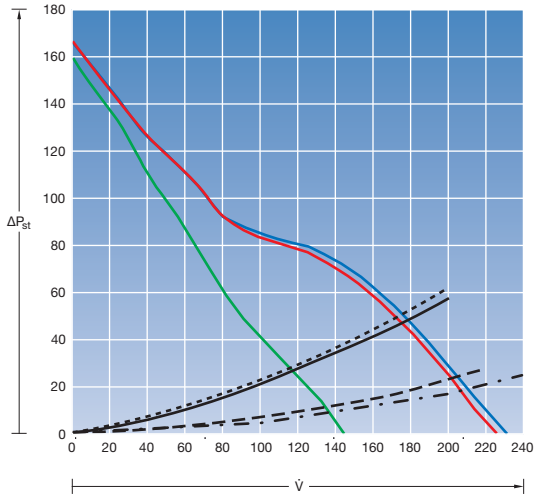
= with standard filter
= with hose-proof hood
= with standard and fine filter
= 1 x outlet filter with hose-proof hood
= 1 x outlet filter
= 2 x outlet filter
= 1 x roof vent 3138.000 with filter

Air throughput 230 m³/h

50/60 Hz
SK 3241.500



V̇ = Volumetric flow (m³/h)
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= with standard filter
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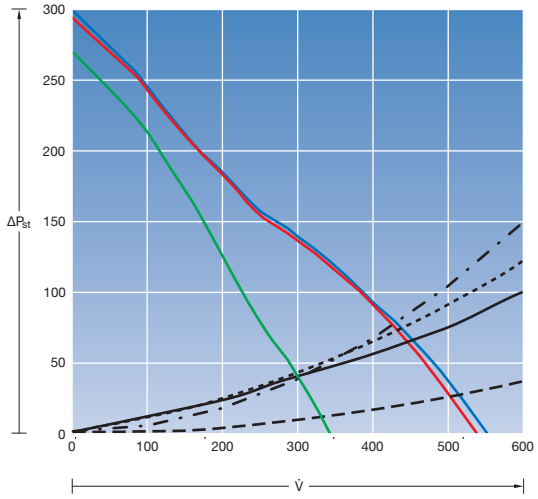
= 1 x outlet filter
= 2 x outlet filter
= 1 x roof vent 3138.000 with filter

TopTherm fan-and-filter units with EC technology

Air throughput 550 m³/h

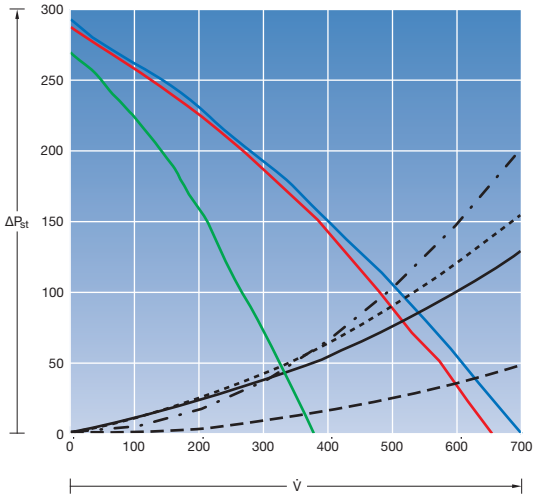
50/60 Hz
SK 3243.500



V̇ = Volumetric flow (m³/h)
ΔPst = Stat. pressure difference (Pa)
= with standard filter
= with hose-proof hood
= with standard and fine filter
= 1 x outlet filter with hose-proof hood
= 1 x outlet filter
= 2 x outlet filter
= 1 x roof vent 3138.000 with filter

Air throughput 700 m³/h

50/60 Hz
SK 3244.500



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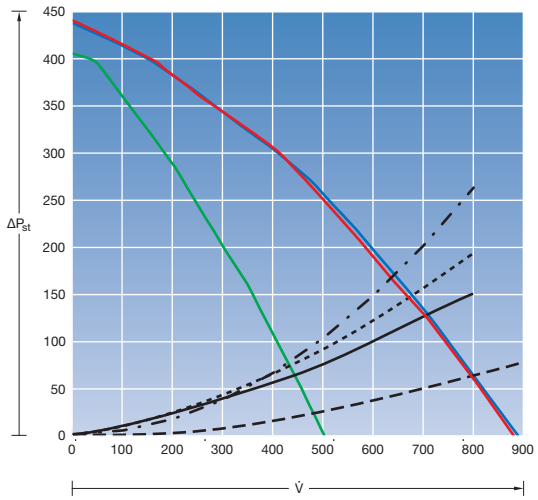
= with standard and fine filter
= 1 x outlet filter with hose-proof hood
= 1 x outlet filter
= 2 x outlet filter
= 1 x roof vent 3138.000 with filter

Air throughput 900 m³/h

50/60 Hz
SK 3245.500, .510



V̇ = Volumetric flow (m³/h)
ΔPst = Stat. pressure difference (Pa)
= with standard filter
= with hose-proof hood
= with standard and fine filter
= 1 x outlet filter with hose-proof hood
= 1 x outlet filter
= 2 x outlet filter
= 1 x roof vent 3138.000 with filter

Roof-mounted fans

Using the base/plinth:

If the vented base/plinth is used as an air inlet instead of the outlet filter 3243.200, the resistance curves as indicated in the performance diagrams will apply as follows:

----- 1 x vented base/plinth with filter

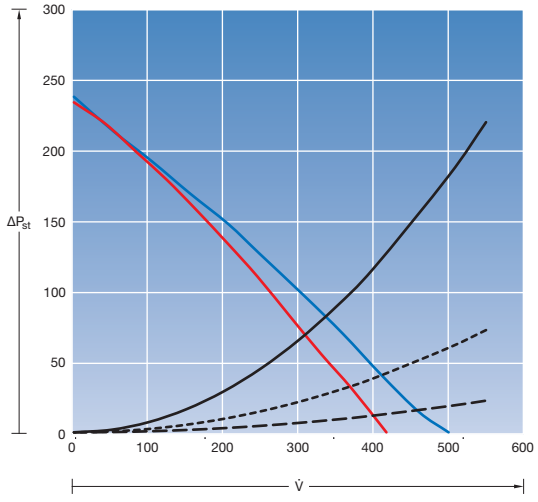
– – – 2 x vented base/plinth with filter

– – – 1 x vented base/plinth without filter

Roof-mounted fans

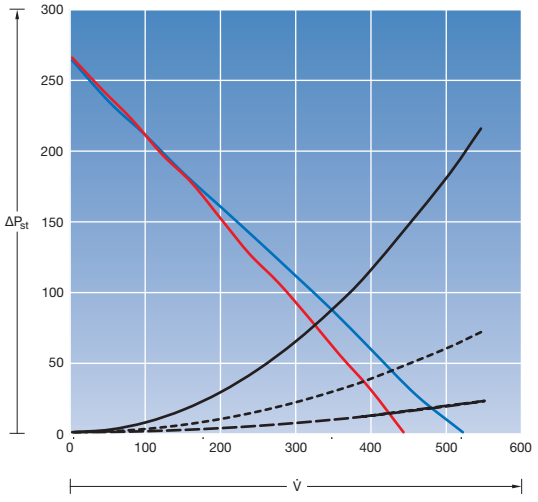
Air throughput 500/525 m³/h

50 Hz
SK 3139.100/.110



V̇ = Volumetric flow (m³/h)
ΔPst = Stat. pressure difference (Pa)
——— = without filter mat (IP 22)
——— = with filter mat (IP 55)
——— = 1 x outlet filter 3243.200 with standard and fine filter (IP 55)
----- = 1 x outlet filter 3243.200 with standard filter (IP 54) or 2 x outlet filter 3243.200 with standard and fine filter (IP 55)
– – – = 2 x outlet filter 3243.200 with standard filter (IP 54)

60 Hz
SK 3139.100/.110

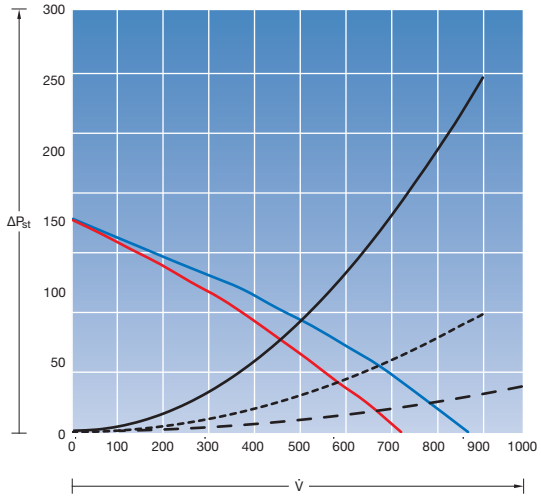


V̇ = Volumetric flow (m³/h)
ΔPst = Stat. pressure difference (Pa)
——— = without filter mat (IP 22)
——— = with filter mat (IP 55)
——— = 1 x outlet filter 3243.200 with standard and fine filter (IP 55)
----- = 1 x outlet filter 3243.200 with standard filter (IP 54) or 2 x outlet filter 3243.200 with standard and fine filter (IP 55)
– – – = 2 x outlet filter 3243.200 with standard filter (IP 54)

Roof-mounted fans

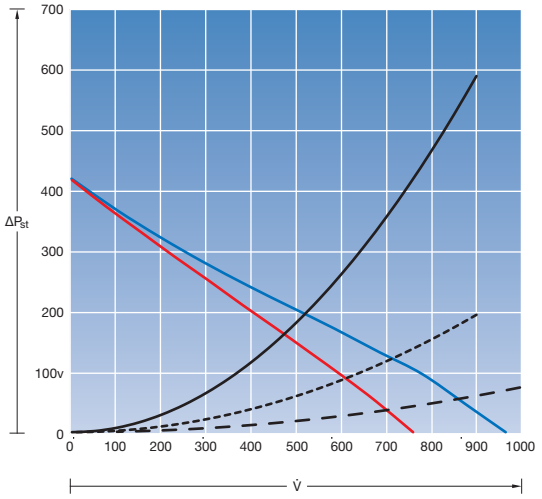
Air throughput 873/965 m³/h

50 Hz
SK 3140.100/.110



V̇ = Volumetric flow (m³/h)
ΔPst = Stat. pressure difference (Pa)
= without filter mat (IP 22)
= with filter mat (IP 55)
= 1 x outlet filter 3243.200 with standard and fine filter (IP 55)
= 1 x outlet filter 3243.200 with standard filter (IP 54) or 2 x outlet filter 3243.200 with standard and fine filter (IP 55)
= 2 x outlet filter 3243.200 with standard filter (IP 54)

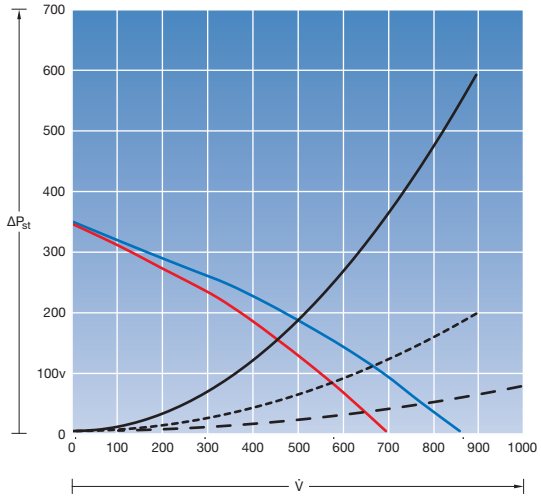
60 Hz
SK 3140.100/.110



V̇ = Volumetric flow (m³/h)
ΔPst = Stat. pressure difference (Pa)
= without filter mat (IP 22)
= with filter mat (IP 55)
= 1 x outlet filter 3243.200 with standard and fine filter (IP 55)
= 1 x outlet filter 3243.200 with standard filter (IP 54) or 2 x outlet filter 3243.200 with standard and fine filter (IP 55)
= 2 x outlet filter 3243.200 with standard filter (IP 54)

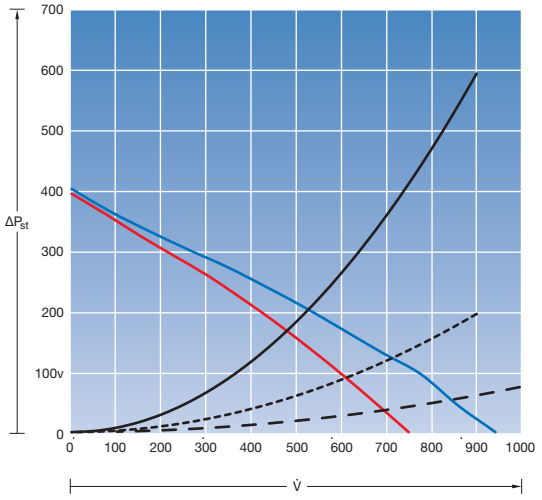
Air throughput 863/942 m³/h

400 V, 50 Hz
SK 3140.140



V̇ = Volumetric flow (m³/h)
ΔPst = Stat. pressure difference (Pa)
= without filter mat (IP 22)
= with filter mat (IP 55)
= 1 x outlet filter 3243.200 with standard and fine filter (IP 55)
= 1 x outlet filter 3243.200 with standard filter (IP 54) or 2 x outlet filter 3243.200 with standard and fine filter (IP 55)
= 2 x outlet filter 3243.200 with standard filter (IP 54)

400 V, 60 Hz
SK 3140.140

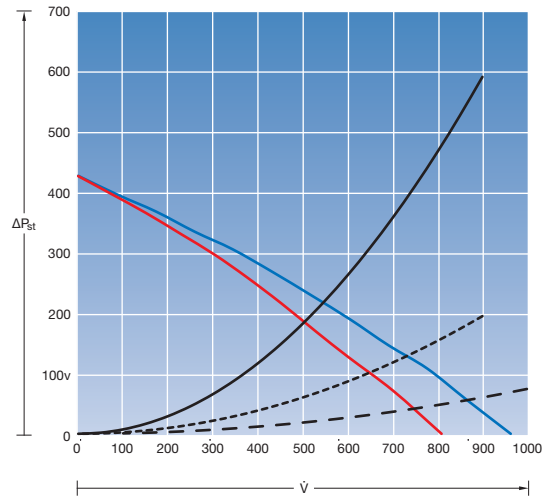


V̇ = Volumetric flow (m³/h)
ΔPst = Stat. pressure difference (Pa)
= without filter mat (IP 22)
= with filter mat (IP 55)
= 1 x outlet filter 3243.200 with standard and fine filter (IP 55)
= 1 x outlet filter 3243.200 with standard filter (IP 54) or 2 x outlet filter 3243.200 with standard and fine filter (IP 55)
= 2 x outlet filter 3243.200 with standard filter (IP 54)

Roof-mounted fans

Air throughput 963 m³/h

460 V, 60 Hz
SK 3140.140

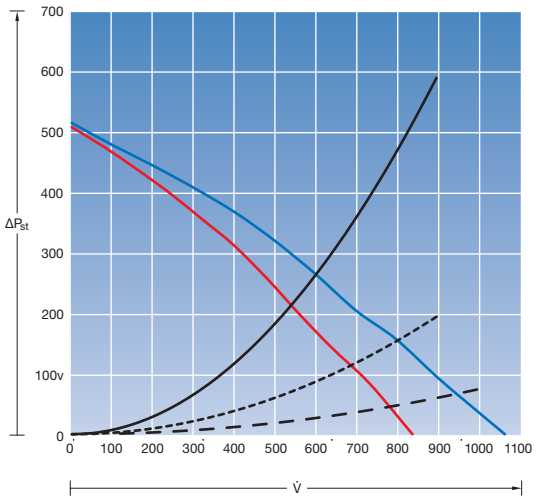


V̇ = Volumetric flow (m³/h)
ΔPst = Stat. pressure difference (Pa)
= without filter mat (IP 22)
= with filter mat (IP 55)
= 1 x outlet filter 3243.200 with standard and fine filter (IP 55)
= 1 x outlet filter 3243.200 with standard filter (IP 54) or 2 x outlet filter 3243.200 with standard and fine filter (IP 55)
= 2 x outlet filter 3243.200 with standard filter (IP 54)

Roof-mounted fans with EC technology

Air throughput 1069 m³/h

50/60 Hz
SK 3140.500/.510

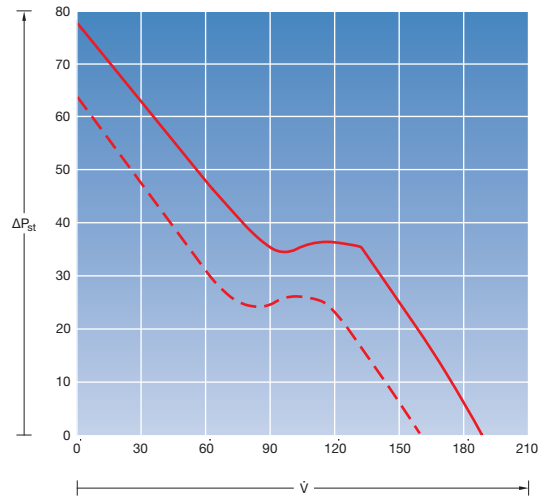


V̇ = Volumetric flow (m³/h)
ΔPst = Stat. pressure difference (Pa)
= without filter mat (IP 22)
= with filter mat (IP 55)
= 1 x outlet filter 3243.200 with standard and fine filter (IP 55)
= 1 x outlet filter 3243.200 with standard filter (IP 54) or 2 x outlet filter 3243.200 with standard and fine filter (IP 55)
= 2 x outlet filter 3243.200 with standard filter (IP 54)

Rack-mounted fans for 482.6 mm (19˝)

Air throughput 320/480 m³/h

50/60 Hz
SK 3340.230, 3341.024, .115, .230, 3342.024, .230, .500, 3350.115, .230, 3351.230, 3352.230, .500

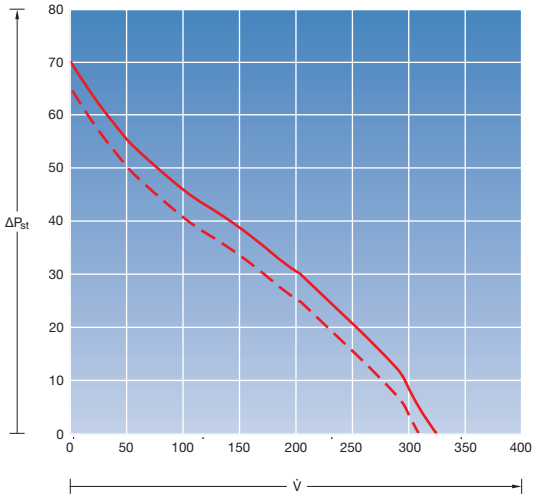


V̇ = Volumetric flow (m³/h)
ΔPst = Stat. pressure difference (Pa)
= 50 Hz
= 60 Hz

Tangential fans for 482.6 mm (19˝)

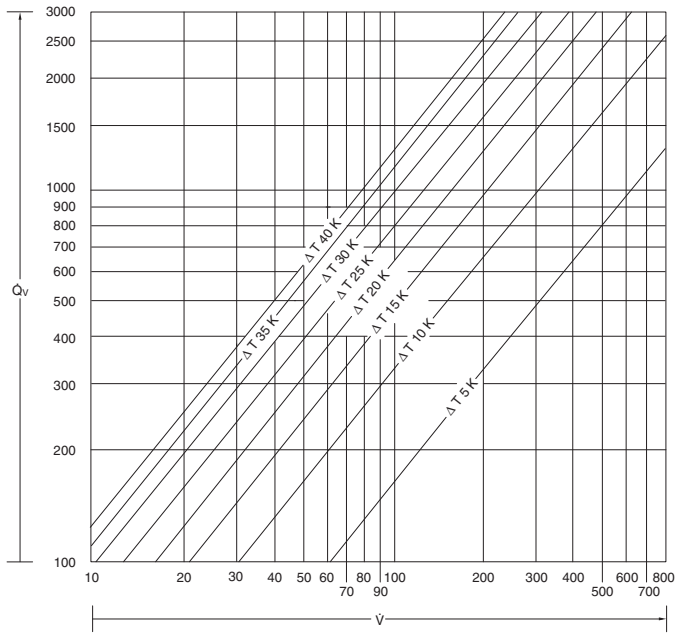
Air throughput 320 m³/h

50/60 Hz
SK 3144.000, 3145.000



V̇ = Volumetric flow (m³/h)
ΔPst = Stat. pressure difference (Pa)
= 50 Hz
= 60 Hz

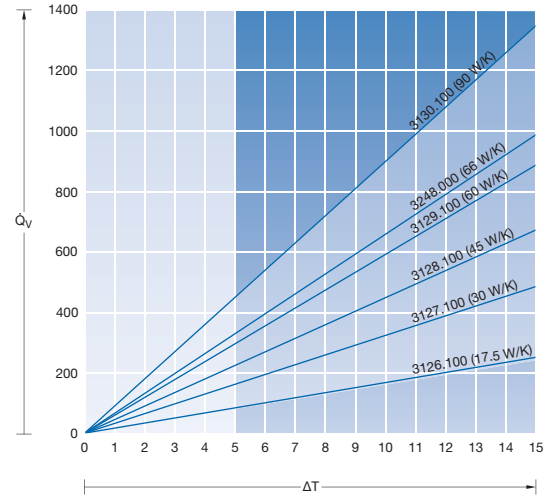
Selection diagram
for fans



$\dot{V}$ = Volumetric flow (m^3/h)
$\dot{Q}_V$ = Heat loss (W)

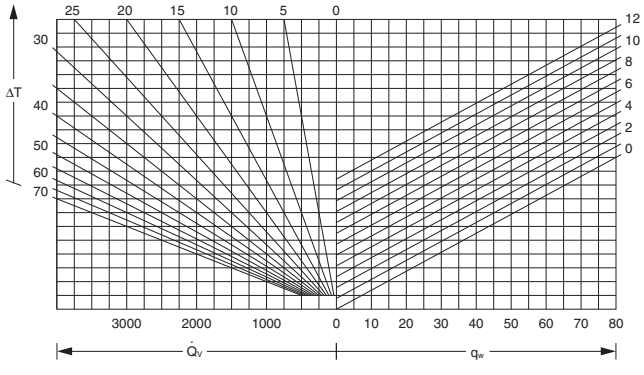
TopTherm air/air heat exchangers
Specific thermal output 17.5 – 90 W/K, wall-mounted with controller

50/60 Hz
SK 3126.100, 3127.100, 3128.100, 3129.100, 3130.100, 3248.000



$\dot{Q}_V$ = Heat loss (W)
ΔT = Temperature difference (K)

Selection diagram
for air/air heat exchangers

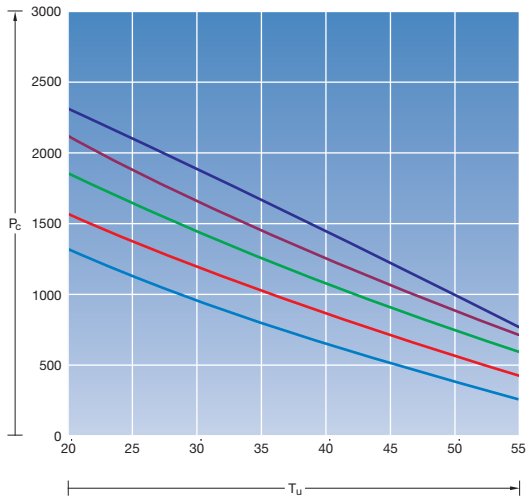


ΔT	=	Temperature difference (K)
$\dot{Q}_V$	=	Heat loss (W)
q_W	=	Specific thermal output (W/K)
A	=	Enclosure surface area to IEC 890 (m^2)
k	=	Heat transfer coefficient (W/m^2 K) for sheet steel k = 5.5 W/m^2 K

VX25 Blue e+ integration solution

Output class 1300 W (110 – 240 V, 1 ~, 50 – 60 Hz / 380 – 480 V, 3 ~, 50 – 60 Hz)

1.30 kW
SK 3185.030



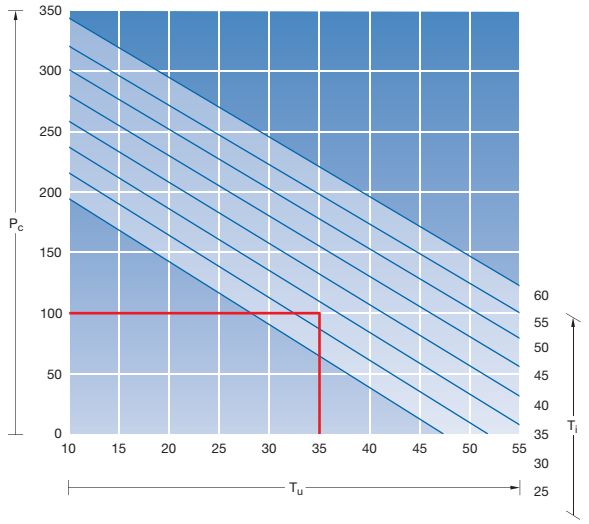
Enclosure internal temperature T_i
- 45 °C
- 40 °C
- 35 °C
- 30 °C
- 25 °C

P_c = Total cooling output [W]
T_u = Ambient temperature [°C]

Thermoelectric coolers

Cooling output

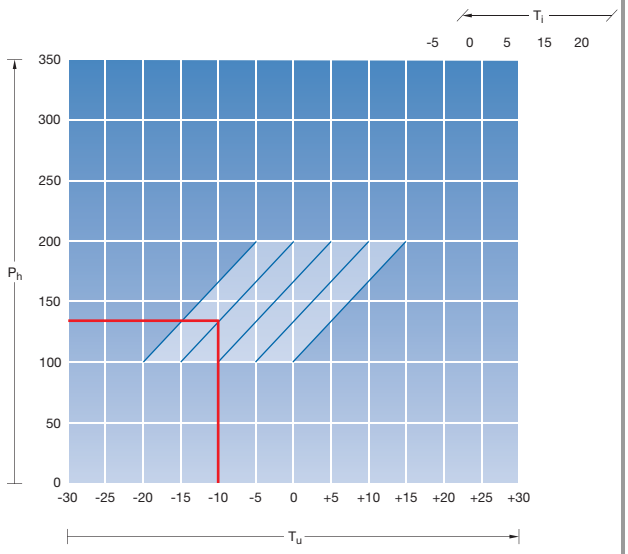
50/60 Hz
SK 3201.200, .300



T_u = Ambient temperature (°C)
P_c = Total cooling output (W)
T_i = Enclosure internal temperature (°C)

Heating output

50/60 Hz
SK 3201.200, .300

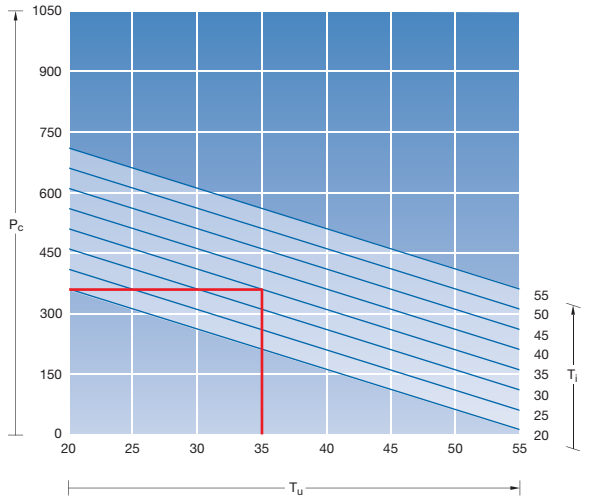


T_u = Ambient temperature (°C)
P_h = Heating output (W)
T_i = Enclosure internal temperature (°C)

TopTherm wall-mounted cooling units

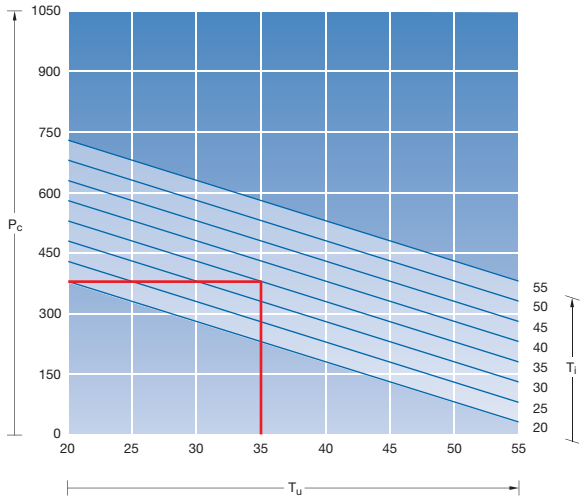
Output class 300 W (115/230 V, 1~)

50 Hz
SK 3302.300, .310, .100, .110, .200



T_u = Ambient temperature (°C)
P_c = Total cooling output (W)
T_i = Enclosure internal temperature (°C)

60 Hz
SK 3302.300, .310, .100, .110, .200

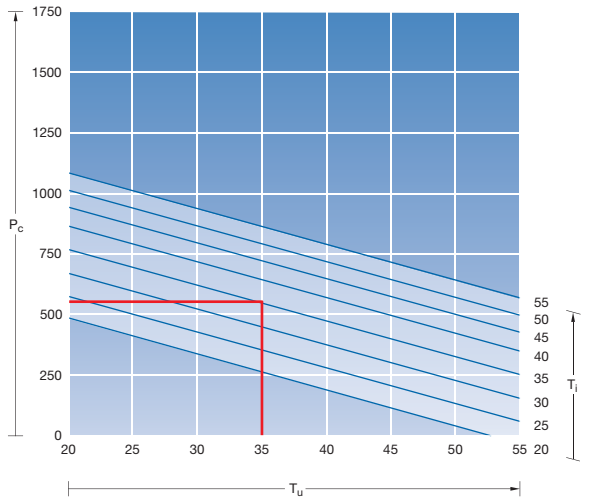


T_u = Ambient temperature (°C)
P_c = Total cooling output (W)
T_i = Enclosure internal temperature (°C)

TopTherm wall-mounted cooling units Blue e

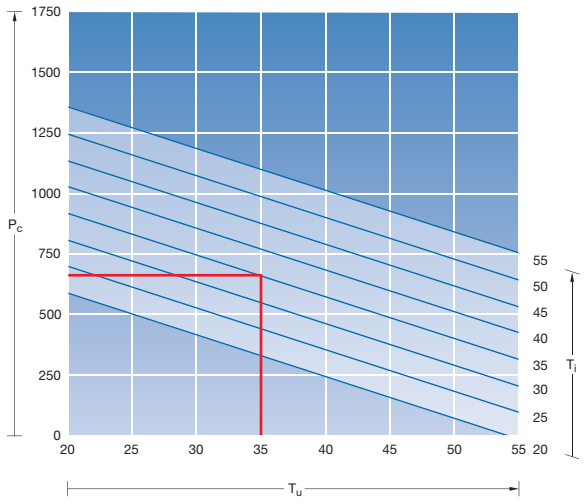
Output class 500 W (115/230 V, 1~)

50 Hz
SK 3303.500, .510, .600, .504, .514



T_u = Ambient temperature (°C)
P_c = Total cooling output (W)
T_i = Enclosure internal temperature (°C)

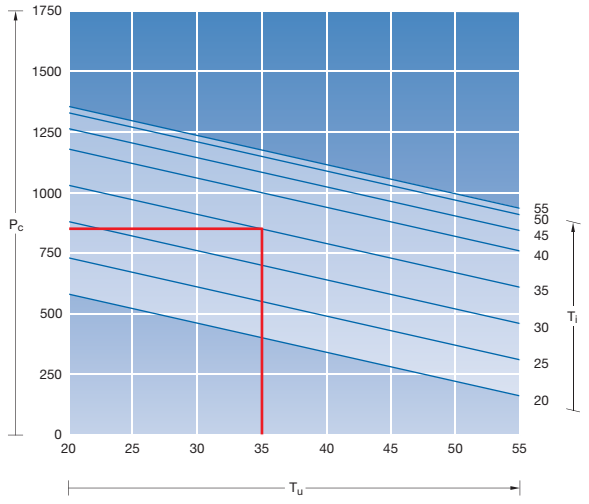
60 Hz
SK 3303.500, .510, .600, .504, .514



T_u = Ambient temperature (°C)
P_c = Total cooling output (W)
T_i = Enclosure internal temperature (°C)

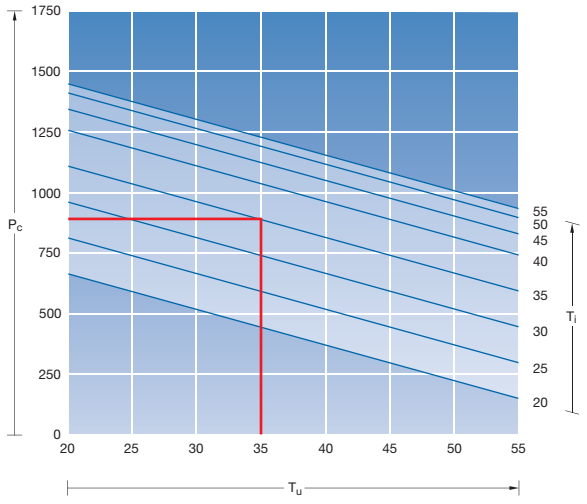
Output class 750 W (115/230 V, 1~, 400 V, 2~)

50 Hz
SK 3361.500, .510, .540, .600



T_u = Ambient temperature (°C)
P_c = Total cooling output (W)
T_i = Enclosure internal temperature (°C)

60 Hz
SK 3361.500, .510, .540, .600

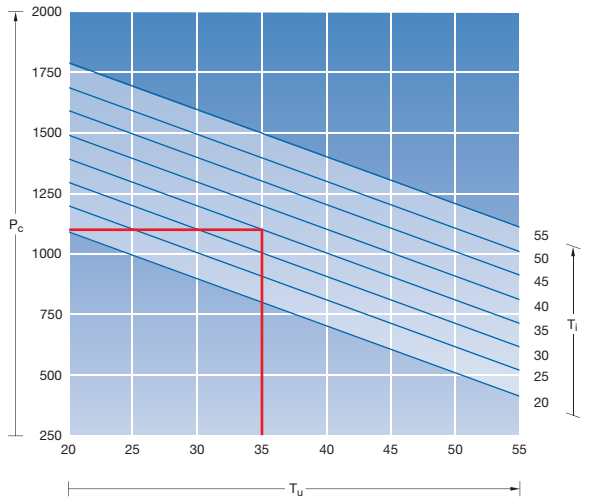


T_u = Ambient temperature (°C)
P_c = Total cooling output (W)
T_i = Enclosure internal temperature (°C)

TopTherm wall-mounted cooling units Blue e

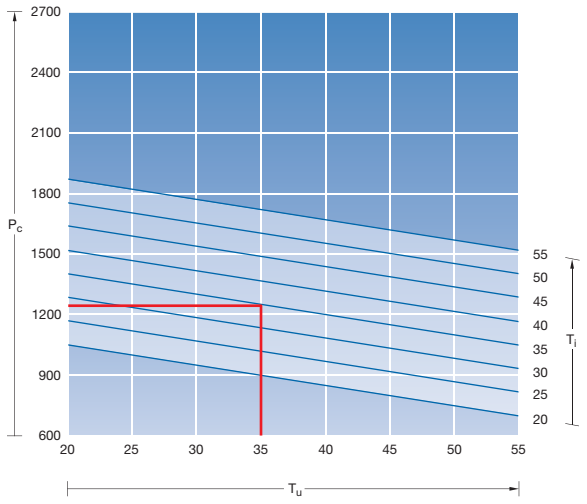
Output class 1000 W (115/230 V, 1~)

50 Hz
SK 3304.500, .510, .600, .504



T_u = Ambient temperature (°C)
P_c = Total cooling output (W)
T_i = Enclosure internal temperature (°C)

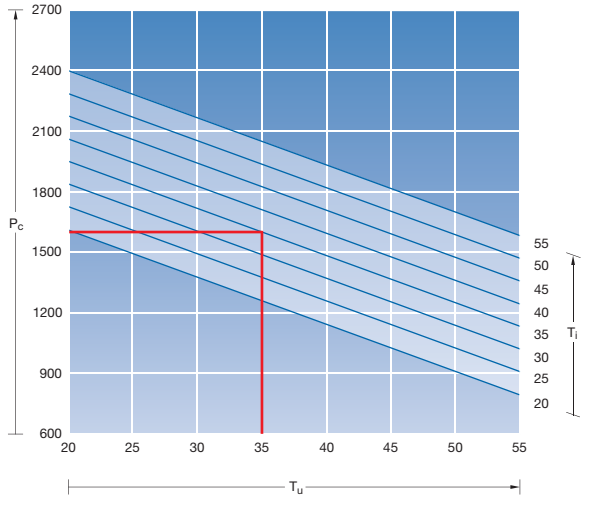
60 Hz
SK 3304.500, .510, .600, .504



T_u = Ambient temperature (°C)
P_c = Total cooling output (W)
T_i = Enclosure internal temperature (°C)

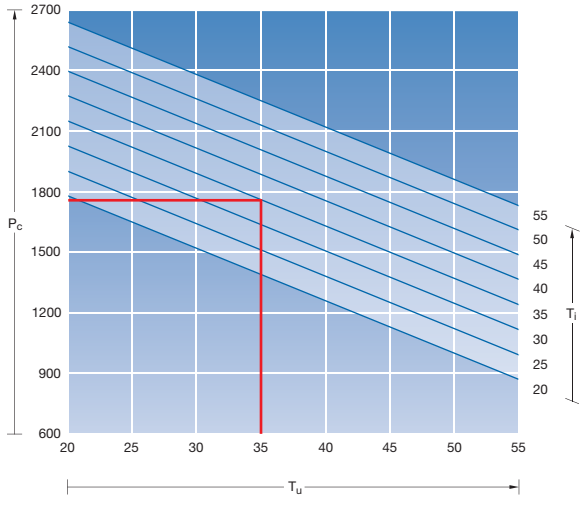
Output class 1500 W (115/230 V, 1~)

50 Hz
SK 3305.500, .510, .600, .504



T_u = Ambient temperature (°C)
P_c = Total cooling output (W)
T_i = Enclosure internal temperature (°C)

60 Hz
SK 3305.500, .510, .600, .504

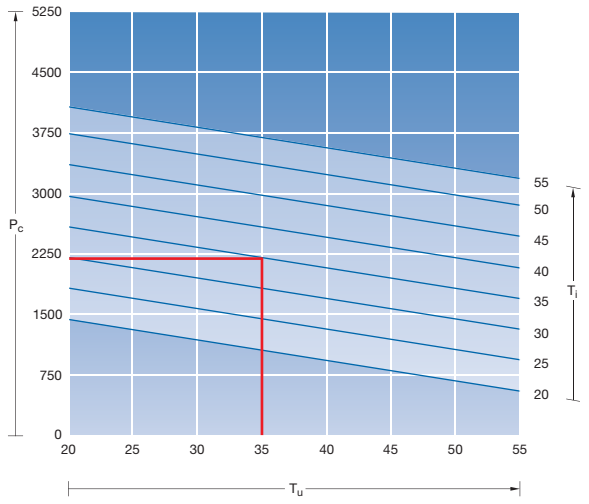


T_u = Ambient temperature (°C)
P_c = Total cooling output (W)
T_i = Enclosure internal temperature (°C)

TopTherm wall-mounted cooling units Blue e

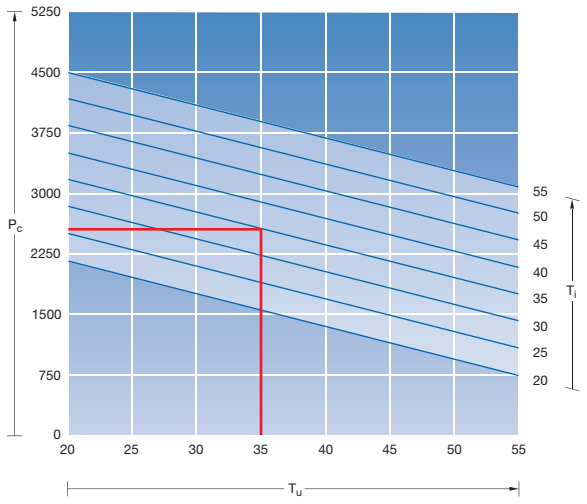
Output class 2000 W (115/230 V, 1~)

50 Hz
SK 3328.500, .510, .600, .504



T_u = Ambient temperature (°C)
P_c = Total cooling output (W)
T_i = Enclosure internal temperature (°C)

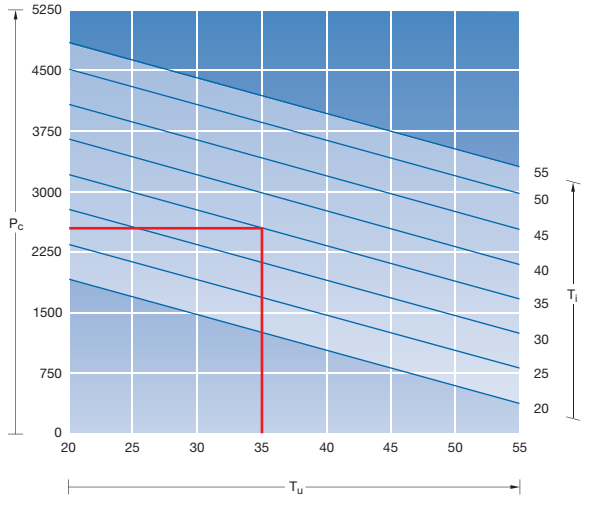
60 Hz
SK 3328.500, .510, .600, .504



T_u = Ambient temperature (°C)
P_c = Total cooling output (W)
T_i = Enclosure internal temperature (°C)

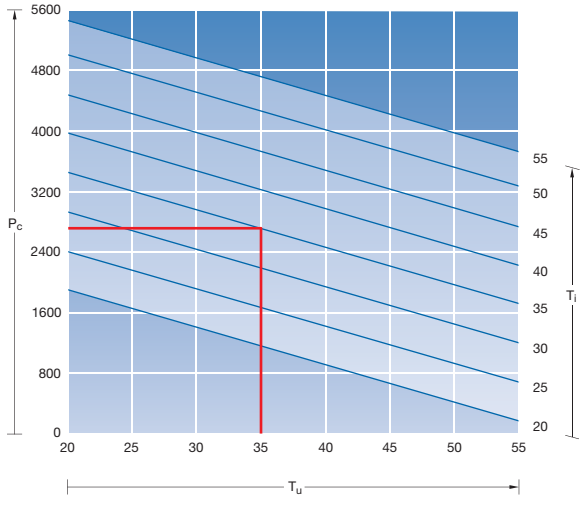
Output class 2500 W (115/230 V, 1~)

50 Hz
SK 3329.500, .510, .600, .504



T_u = Ambient temperature (°C)
P_c = Total cooling output (W)
T_i = Enclosure internal temperature (°C)

60 Hz
SK 3329.500, .510, .600, .504

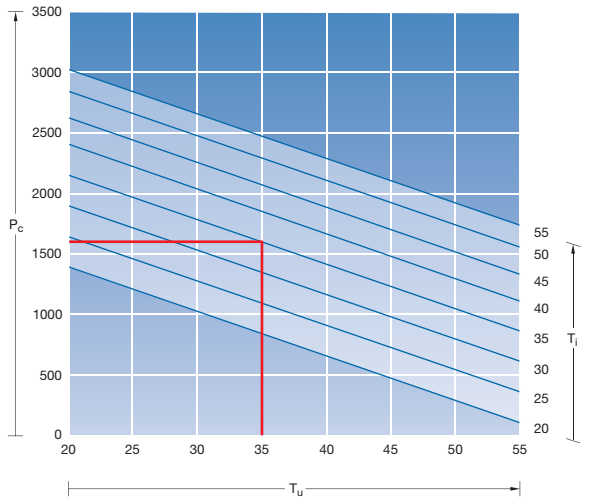


T_u = Ambient temperature (°C)
P_c = Total cooling output (W)
T_i = Enclosure internal temperature (°C)

TopTherm wall-mounted cooling units Blue e, slimline

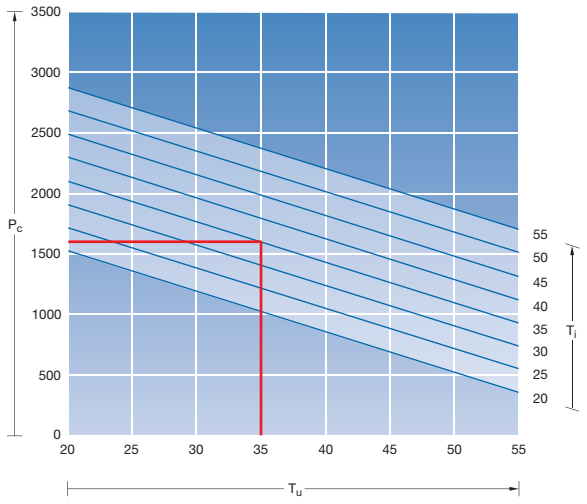
Output class 1500 W (230 V, 1~)

50 Hz
SK 3366.500



T_u = Ambient temperature (°C)
P_c = Total cooling output (W)
T_i = Enclosure internal temperature (°C)

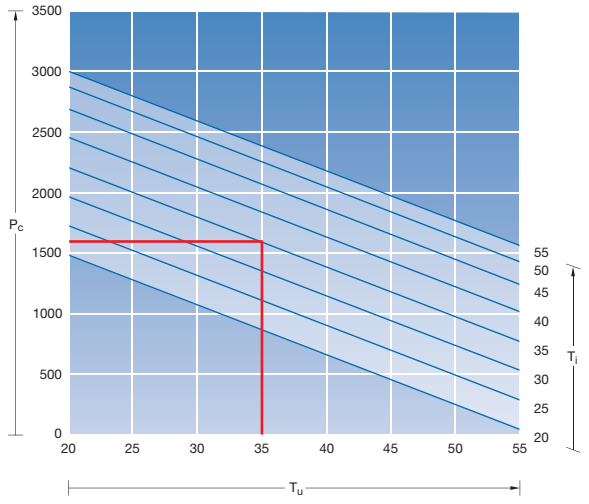
60 Hz
SK 3366.500



T_u = Ambient temperature (°C)
P_c = Total cooling output (W)
T_i = Enclosure internal temperature (°C)

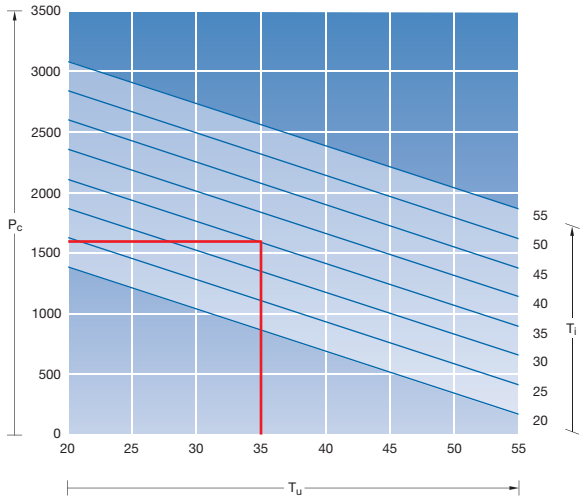
Output class 1500 W (400/460 V, 3~)

50 Hz
SK 3366.540



T_u = Ambient temperature (°C)
P_c = Total cooling output (W)
T_i = Enclosure internal temperature (°C)

60 Hz
SK 3366.540

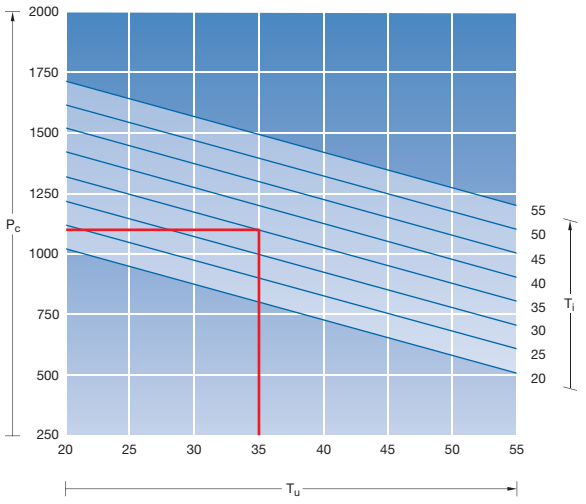


T_u = Ambient temperature (°C)
P_c = Total cooling output (W)
T_i = Enclosure internal temperature (°C)

TopTherm wall-mounted cooling units Blue e

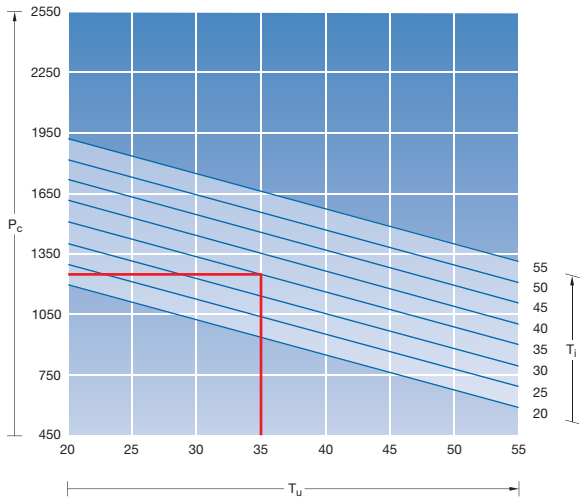
Output class 1000 W (400/460 V, 3~)

50 Hz
SK 3304.540, .640, .544



T_u = Ambient temperature (°C)
P_c = Total cooling output (W)
T_i = Enclosure internal temperature (°C)

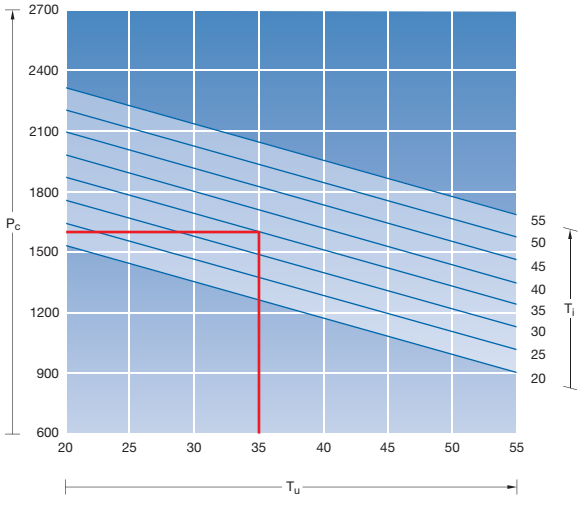
60 Hz
SK 3304.540, .640, .544



T_u = Ambient temperature (°C)
P_c = Total cooling output (W)
T_i = Enclosure internal temperature (°C)

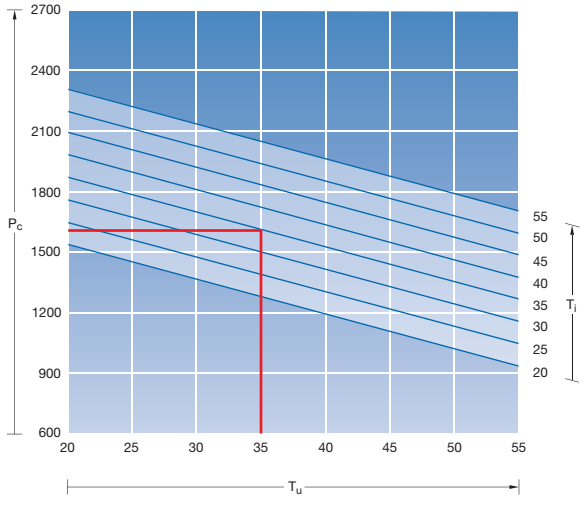
Output class 1500 W (400/460 V, 3~)

50 Hz
SK 3305.540, .640, .544



T_u = Ambient temperature (°C)
P_c = Total cooling output (W)
T_i = Enclosure internal temperature (°C)

60 Hz
SK 3305.540, .640, .544

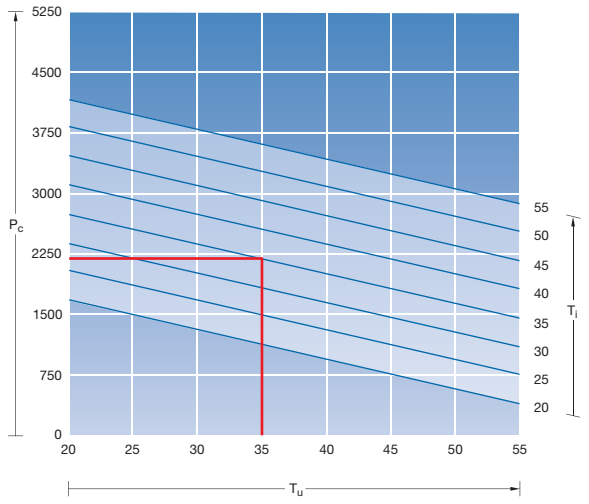


T_u = Ambient temperature (°C)
P_c = Total cooling output (W)
T_i = Enclosure internal temperature (°C)

TopTherm wall-mounted cooling units Blue e

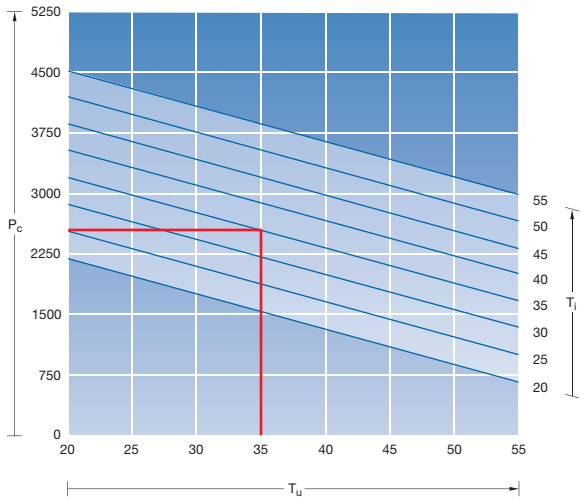
Output class 2000 W (400/460 V, 3~)

50 Hz
SK 3328.540, .640, .544



T_u = Ambient temperature (°C)
P_c = Total cooling output (W)
T_i = Enclosure internal temperature (°C)

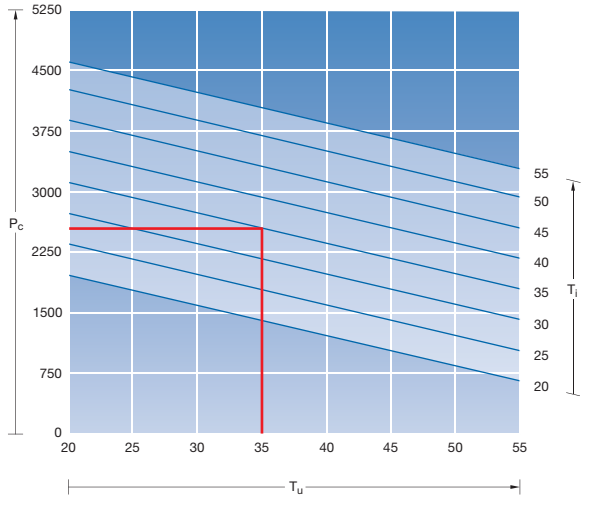
60 Hz
SK 3328.540, .640, .544



T_u = Ambient temperature (°C)
P_c = Total cooling output (W)
T_i = Enclosure internal temperature (°C)

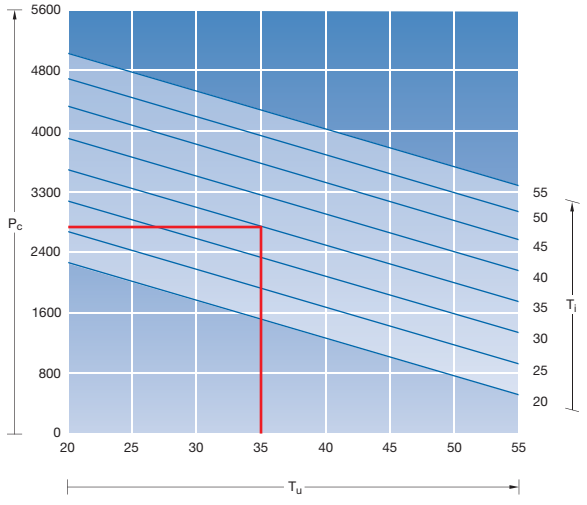
Output class 2500 W (400/460 V, 3~)

50 Hz
SK 3329.540, .640, .544



T_u = Ambient temperature (°C)
P_c = Total cooling output (W)
T_i = Enclosure internal temperature (°C)

60 Hz
SK 3329.540, .640, .544

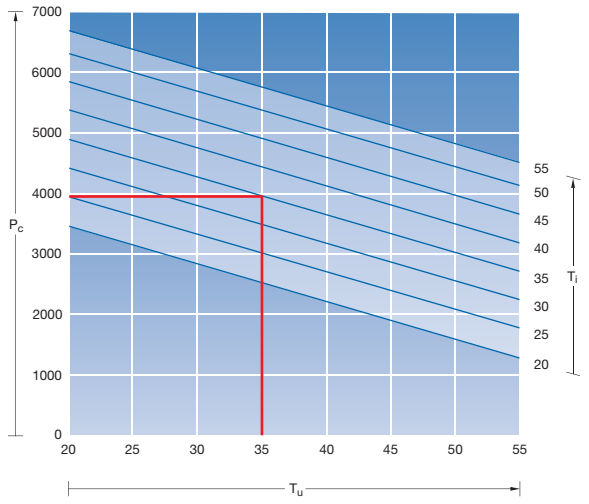


T_u = Ambient temperature (°C)
P_c = Total cooling output (W)
T_i = Enclosure internal temperature (°C)

TopTherm wall-mounted cooling units Blue e

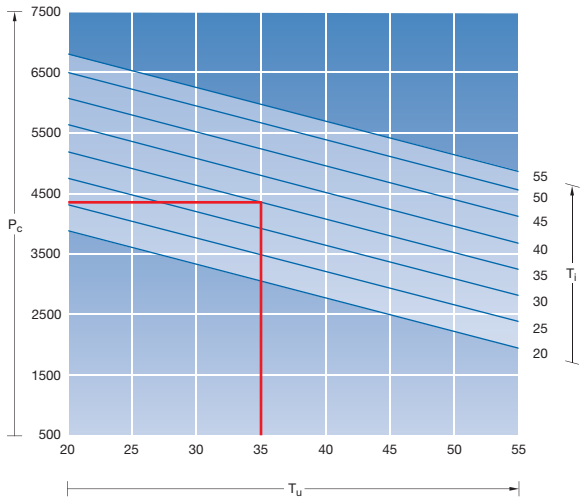
Output class 4000 W (400/460 V, 3~)

50 Hz
SK 3332.540, .640



T_u = Ambient temperature (°C)
P_c = Total cooling output (W)
T_i = Enclosure internal temperature (°C)

60 Hz
SK 3332.540, .640

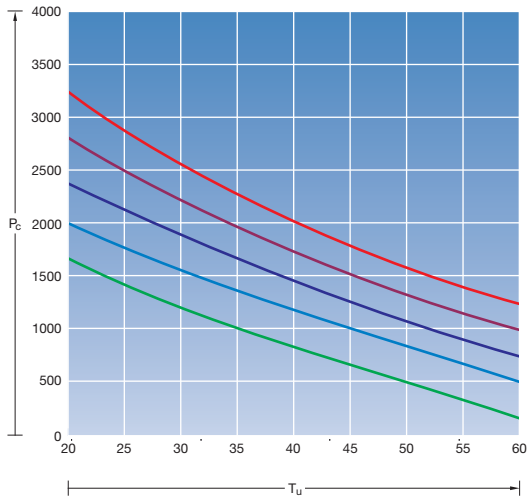


T_u = Ambient temperature (°C)
P_c = Total cooling output (W)
T_i = Enclosure internal temperature (°C)

Wall-mounted cooling units Blue e+

Output class 1600/2000 W (110 – 240 V, 1~, 50 – 60 Hz / 380 – 480 V, 3~, 50 – 60 Hz)

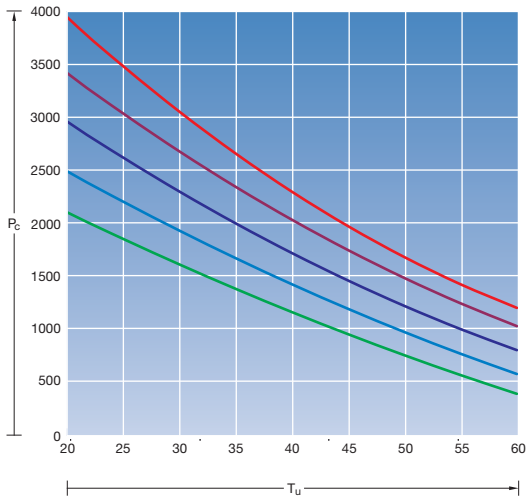
1.6 kW
SK 3185.530, .830



Enclosure internal temperature T_i
- 45 °C
- 40 °C
- 35 °C
- 30 °C
- 25 °C

P_c = Total cooling output [W]
T_u = Ambient temperature [°C]

2 kW
SK 3186.630, .930

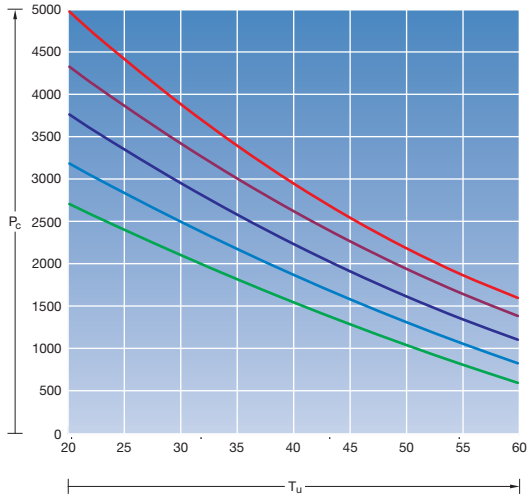


Enclosure internal temperature T_i
- 45 °C
- 40 °C
- 35 °C
- 30 °C
- 25 °C

P_c = Total cooling output [W]
T_u = Ambient temperature [°C]

Output class 2600/4200 W (110 – 240 V, 1~, 50 – 60 Hz / 380 – 480 V, 3~, 50 – 60 Hz)

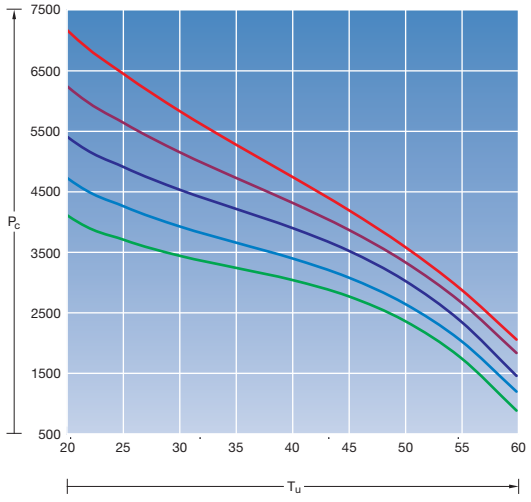
2.6 kW
SK 3187.630, .930



Enclosure internal temperature T_i
- 45 °C
- 40 °C
- 35 °C
- 30 °C
- 25 °C

P_c = Total cooling output [W]
T_u = Ambient temperature [°C]

4.2 kW
SK 3188.640, .940



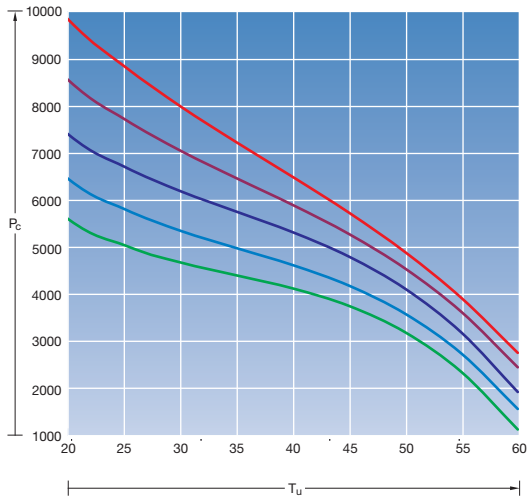
Enclosure internal temperature T_i
- 45 °C
- 40 °C
- 35 °C
- 30 °C
- 25 °C

P_c = Total cooling output [W]
T_u = Ambient temperature [°C]

Wall-mounted cooling units Blue e+

Output class 5800 W (380 – 480 V, 3~, 50 – 60 Hz)

5.8 kW
SK 3189.640, .940



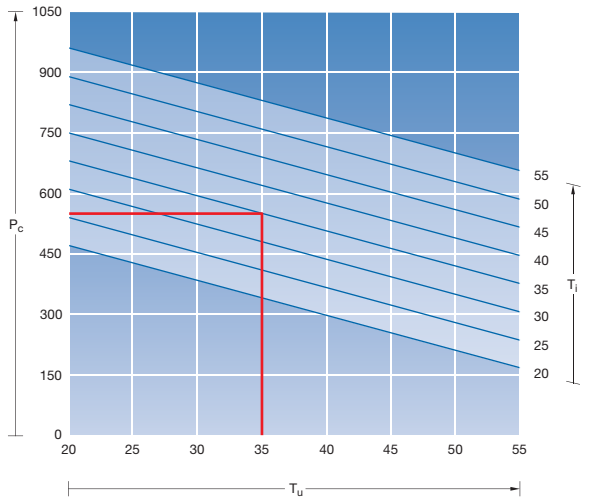
Enclosure internal temperature T_i
- 45 °C
- 40 °C
- 35 °C
- 30 °C
- 25 °C

P_c = Total cooling output [W]
T_u = Ambient temperature [°C]

TopTherm roof-mounted cooling units Blue e

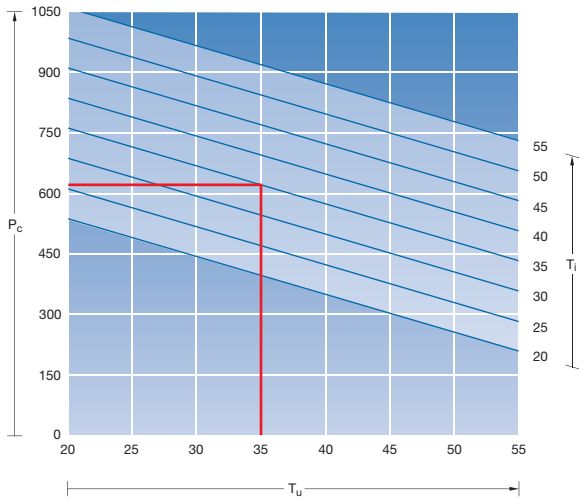
Output class 500 W (115/230 V, 1~)

50 Hz
SK 3382.500, .510, .600



T_u = Ambient temperature (°C)
P_c = Total cooling output (W)
T_i = Enclosure internal temperature (°C)

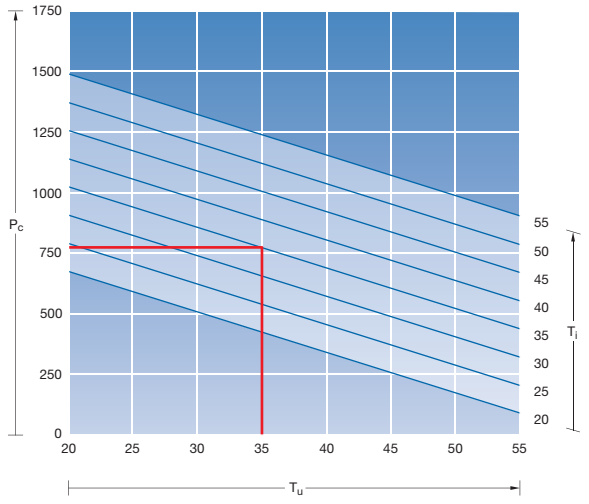
60 Hz
SK 3382.500, .510, .600



T_u = Ambient temperature (°C)
P_c = Total cooling output (W)
T_i = Enclosure internal temperature (°C)

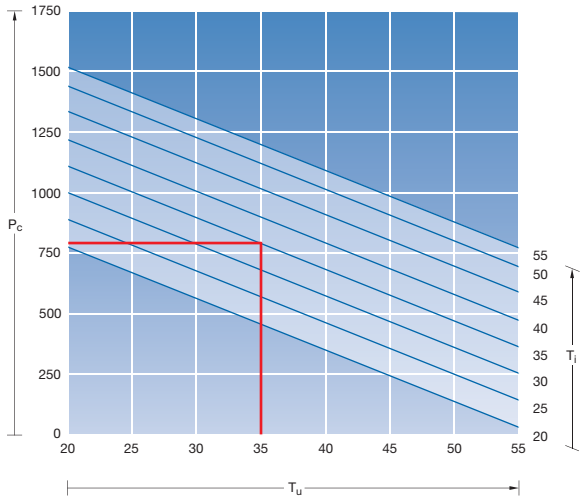
Output class 750 W (115/230 V, 1~, 400 V, 2~)

50 Hz
SK 3359.500, .510, .540, .600



T_u = Ambient temperature (°C)
P_c = Total cooling output (W)
T_i = Enclosure internal temperature (°C)

60 Hz
SK 3359.500, .510, .540, .600

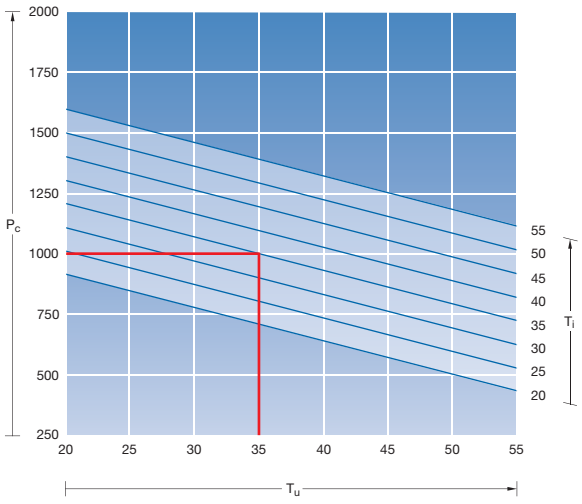


T_u = Ambient temperature (°C)
P_c = Total cooling output (W)
T_i = Enclosure internal temperature (°C)

TopTherm roof-mounted cooling units Blue e

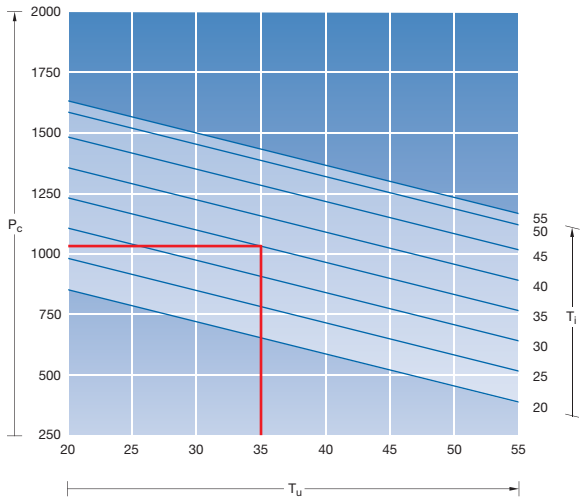
Output class 1000 W (115/230 V, 1~, 400 V, 2~)

50 Hz
3383.500, .510, .540, .600



T_u = Ambient temperature (°C)
P_c = Total cooling output (W)
T_i = Enclosure internal temperature (°C)

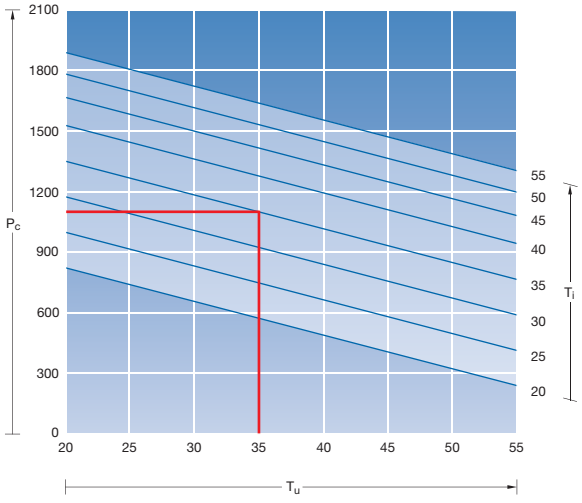
60 Hz
3383.500, .510, .540, .600



T_u = Ambient temperature (°C)
P_c = Total cooling output (W)
T_i = Enclosure internal temperature (°C)

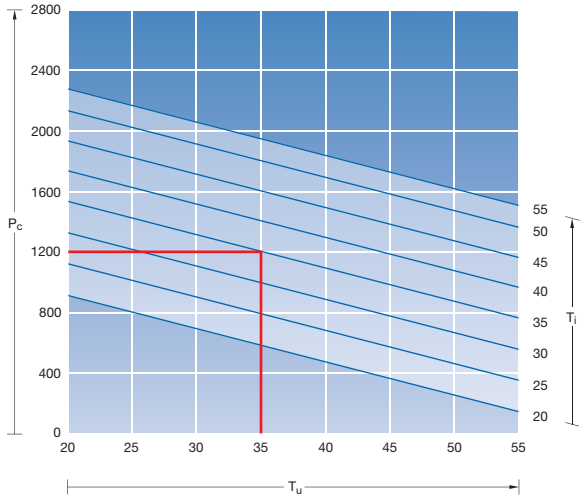
Output class 1100 W (115/230 V, 1~)

50 Hz
SK 3273.500, .515



T_u = Ambient temperature (°C)
P_c = Total cooling output (W)
T_i = Enclosure internal temperature (°C)

60 Hz
SK 3273.500, .515

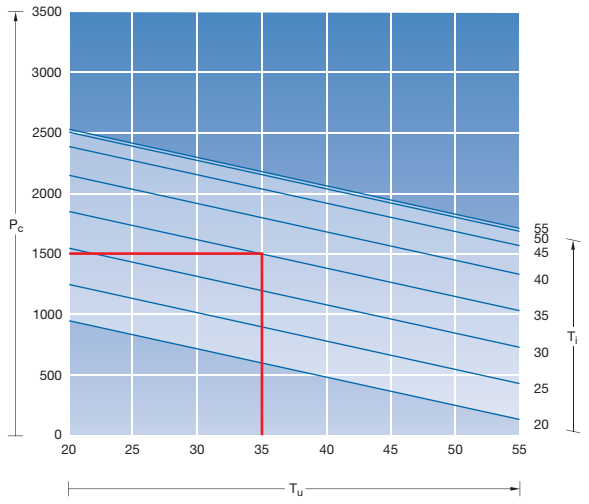


T_u = Ambient temperature (°C)
P_c = Total cooling output (W)
T_i = Enclosure internal temperature (°C)

TopTherm roof-mounted cooling units Blue e

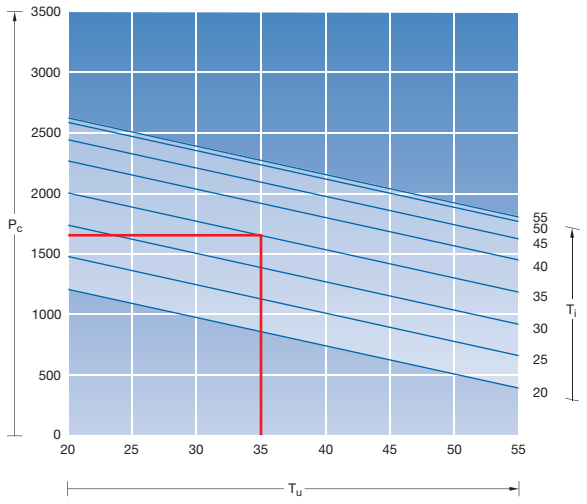
Output class 1500 W (115/230 V, 1~, 400 V, 2~)

50 Hz
3384.500, .510, .540, .600



T_u = Ambient temperature (°C)
P_c = Total cooling output (W)
T_i = Enclosure internal temperature (°C)

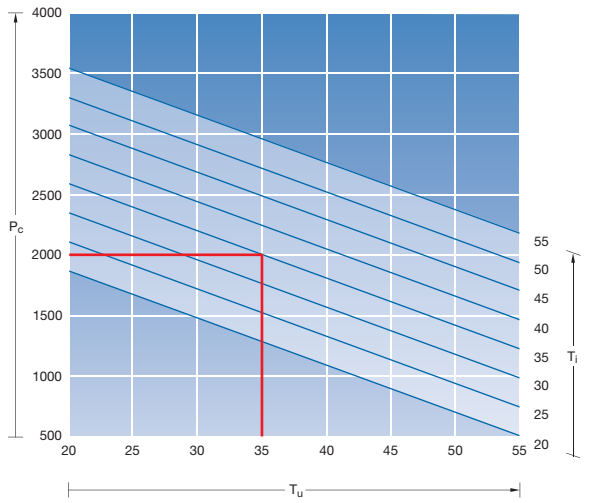
60 Hz
3384.500, .510, .540, .600



T_u = Ambient temperature (°C)
P_c = Total cooling output (W)
T_i = Enclosure internal temperature (°C)

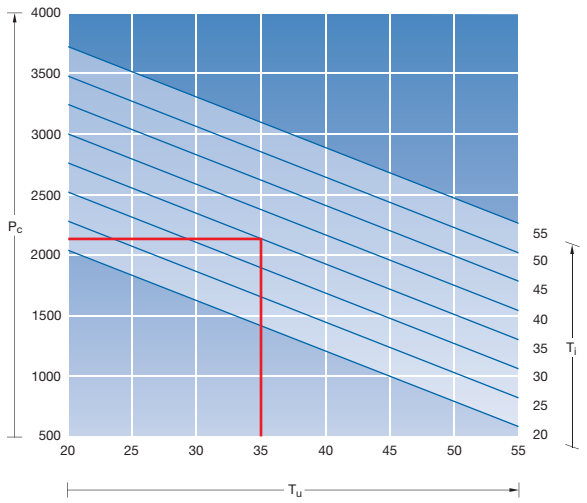
Output class 2000 W (115/230 V, 1~, 400 V, 2~)

50 Hz
SK 3385.500, .510, .540, .600, .640



T_u = Ambient temperature (°C)
P_c = Total cooling output (W)
T_i = Enclosure internal temperature (°C)

60 Hz
SK 3385.500, .510, .540, .600, .640

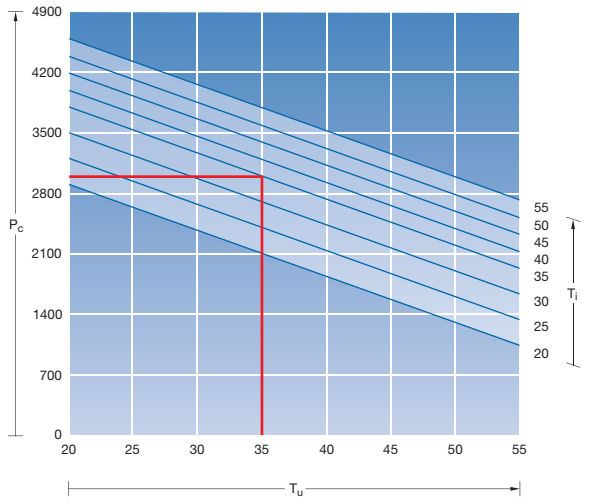


T_u = Ambient temperature (°C)
P_c = Total cooling output (W)
T_i = Enclosure internal temperature (°C)

TopTherm roof-mounted cooling units Blue e

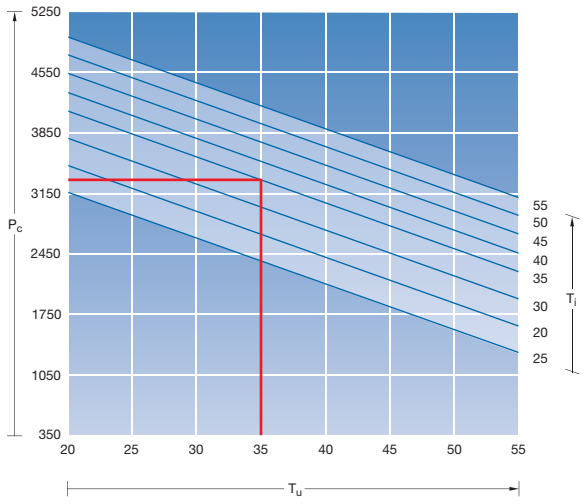
Output class 3000 W (400/460 V, 3~)

50 Hz
3386.540, .640



T_u = Ambient temperature (°C)
P_c = Total cooling output (W)
T_i = Enclosure internal temperature (°C)

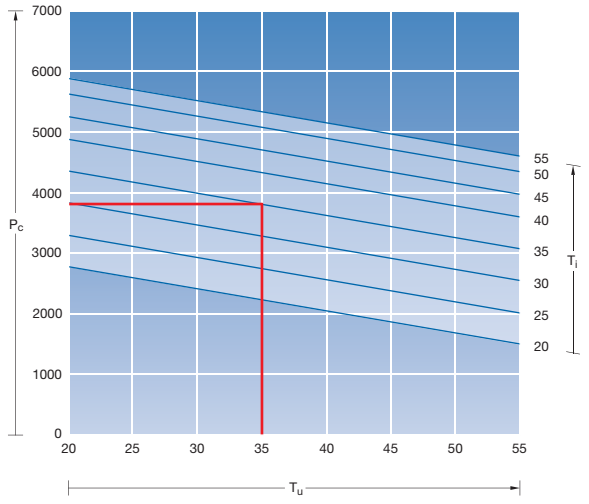
60 Hz
3386.540, .640



T_u = Ambient temperature (°C)
P_c = Total cooling output (W)
T_i = Enclosure internal temperature (°C)

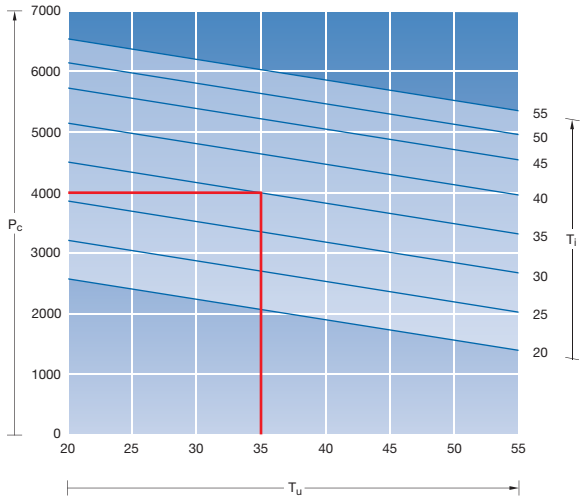
Output class 4000 W (400/460 V, 3~)

50 Hz
3387.540, .640



T_u = Ambient temperature (°C)
P_c = Total cooling output (W)
T_i = Enclosure internal temperature (°C)

60 Hz
3387.540, .640

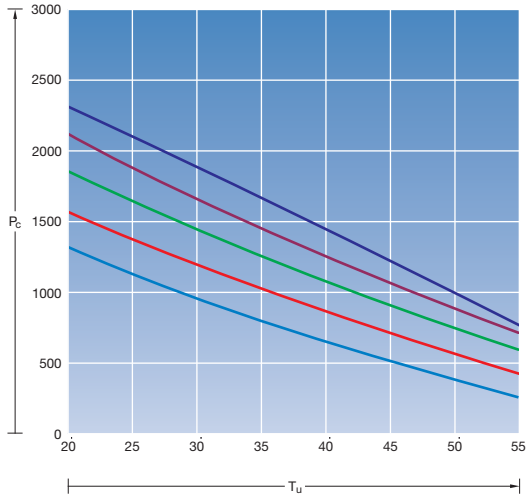


T_u = Ambient temperature (°C)
P_c = Total cooling output (W)
T_i = Enclosure internal temperature (°C)

Roof-mounted cooling unit Blue e+

Output class 1300 W (110 – 240 V, 1 ~, 50 – 60 Hz / 380 – 480 V, 3 ~, 50 – 60 Hz)

1.30 kW
SK 3185.730



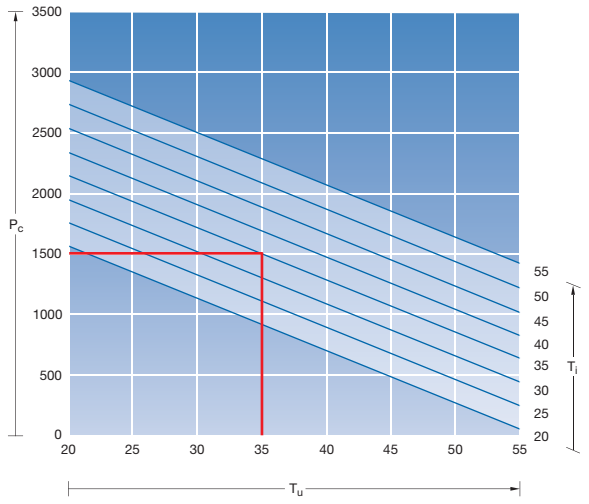
Enclosure internal temperature T_i
- 45 °C
- 40 °C
- 35 °C
- 30 °C
- 25 °C

P_c = Total cooling output [W]
T_u = Ambient temperature [°C]

Modular climate control concept – Cooling module Blue e

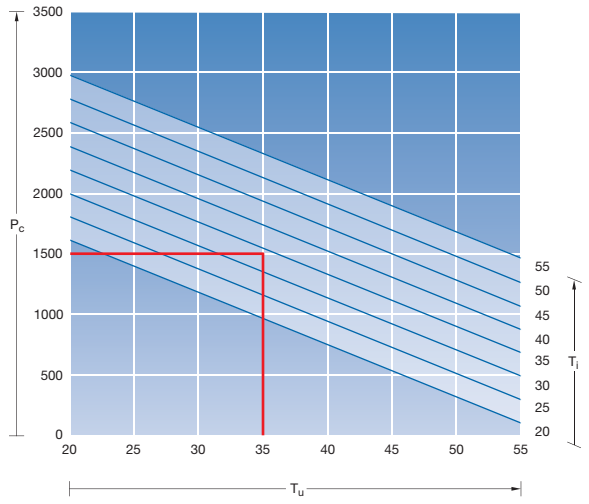
Output class 1500 W (230 V, 1~)

50 Hz
SK 3307.700



T_u = Ambient temperature (°C)
P_c = Total cooling output (W)
T_i = Enclosure internal temperature (°C)

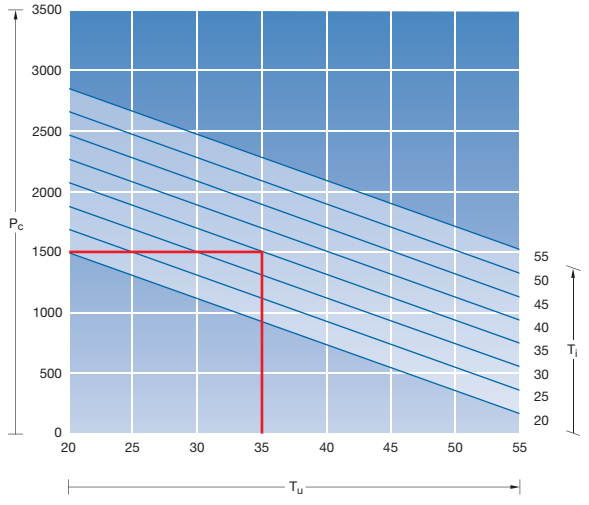
60 Hz
SK 3307.700



T_u = Ambient temperature (°C)
P_c = Total cooling output (W)
T_i = Enclosure internal temperature (°C)

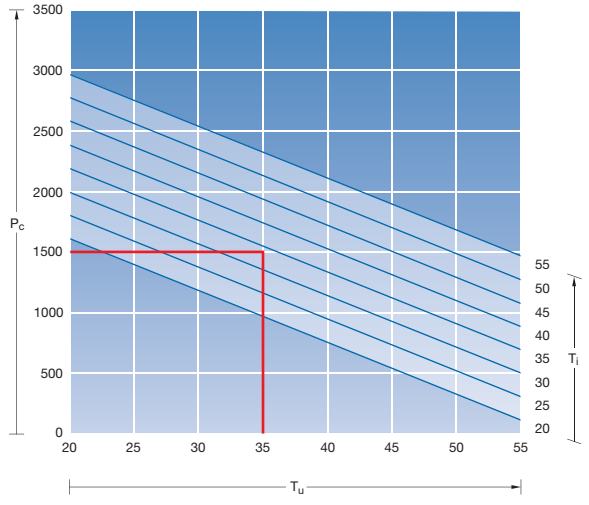
Output class 1500 W (400/460 V, 3~)

50 Hz
SK 3307.740



T_u = Ambient temperature (°C)
P_c = Total cooling output (W)
T_i = Enclosure internal temperature (°C)

60 Hz
SK 3307.740

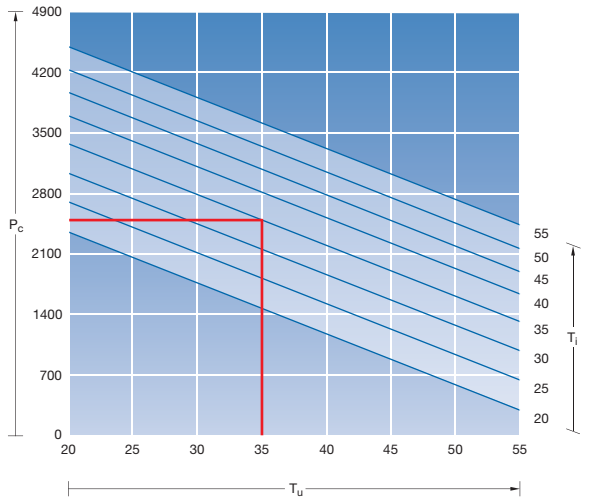


T_u = Ambient temperature (°C)
P_c = Total cooling output (W)
T_i = Enclosure internal temperature (°C)

Modular climate control concept – Cooling module Blue e

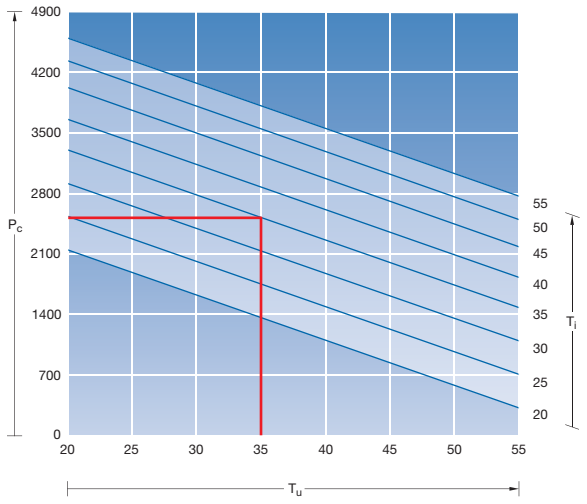
Output class 2500 W (230 V, 1~)

50 Hz
SK 3310.700



T_u = Ambient temperature (°C)
P_c = Total cooling output (W)
T_i = Enclosure internal temperature (°C)

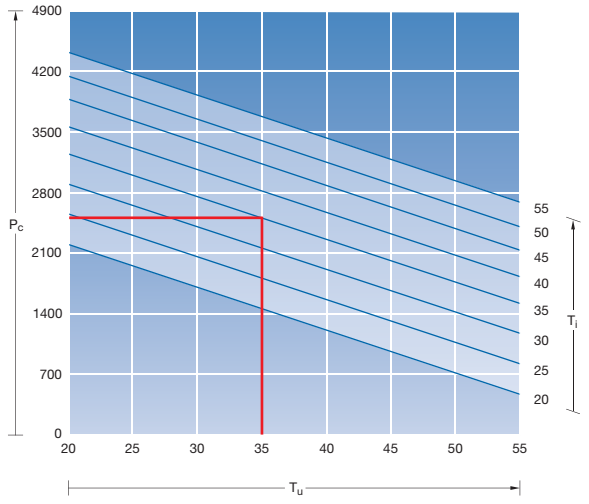
60 Hz
SK 3310.700



T_u = Ambient temperature (°C)
P_c = Total cooling output (W)
T_i = Enclosure internal temperature (°C)

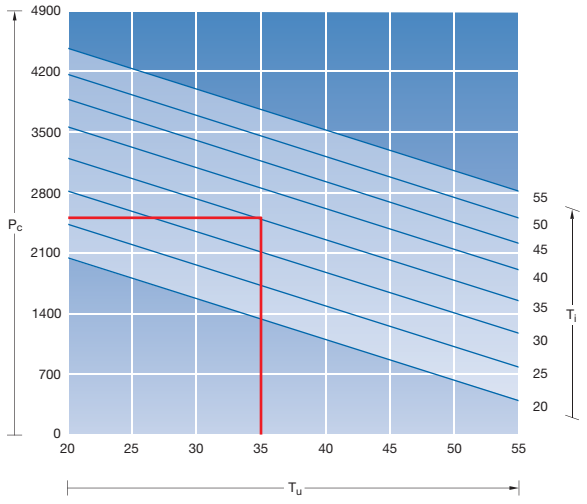
Output class 2500 W (400/460 V, 3~)

50 Hz
SK 3310.740



T_u = Ambient temperature (°C)
P_c = Total cooling output (W)
T_i = Enclosure internal temperature (°C)

60 Hz
SK 3310.740

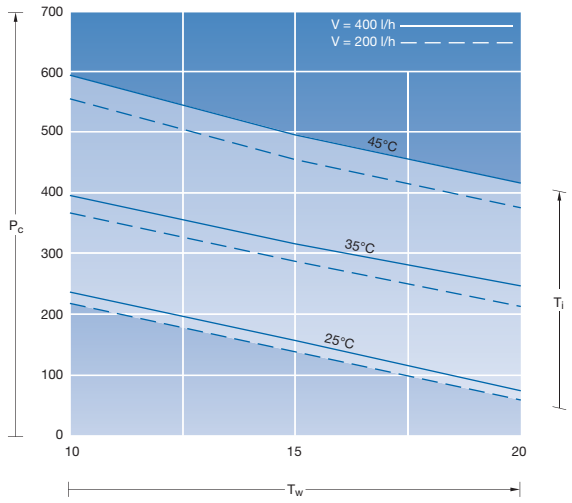


T_u = Ambient temperature (°C)
P_c = Total cooling output (W)
T_i = Enclosure internal temperature (°C)

Wall-mounted air/water heat exchangers

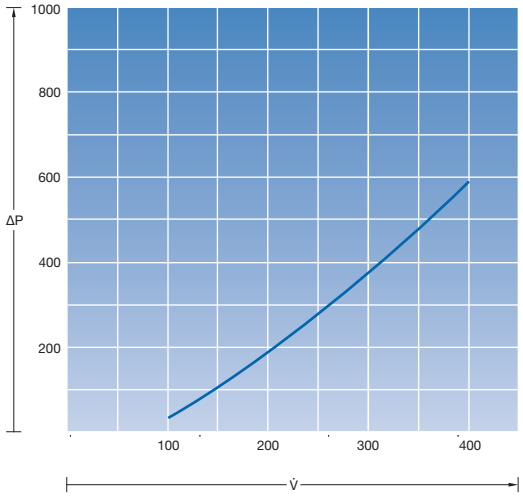
Output class 300 W
Water-carrying parts: Copper/brass (Cu/CuZn)

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



T_w = Water inlet temperature (°C)
P_c = Total cooling output (W)
T_i = Enclosure internal temperature (°C)

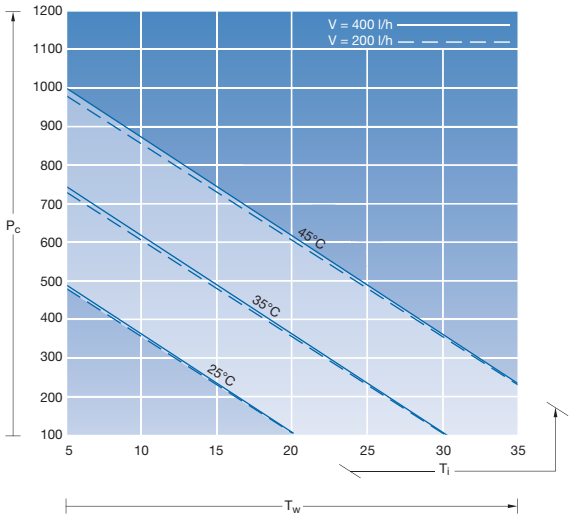
Water resistance diagram
SK 3212.024, .115, .230



$\dot{V}$ = Volumetric flow (l/h)
ΔP = Water resistance (mbar)

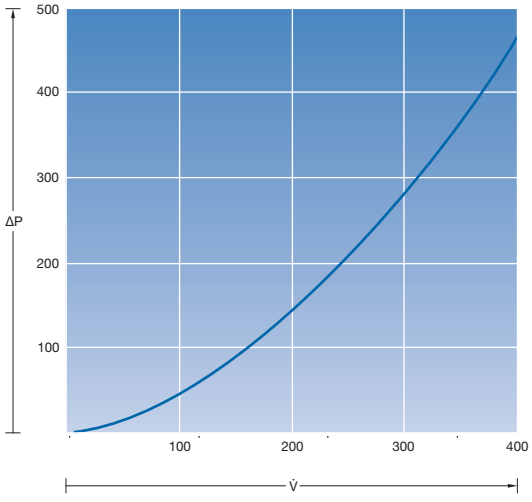
Output class 600 W
Water-carrying parts: Copper/brass (Cu/CuZn)

50/60 Hz
SK 3214.100



T_w = Water inlet temperature (°C)
P_c = Total cooling output (W)
T_i = Enclosure internal temperature (°C)

Water resistance diagram
SK 3214.100

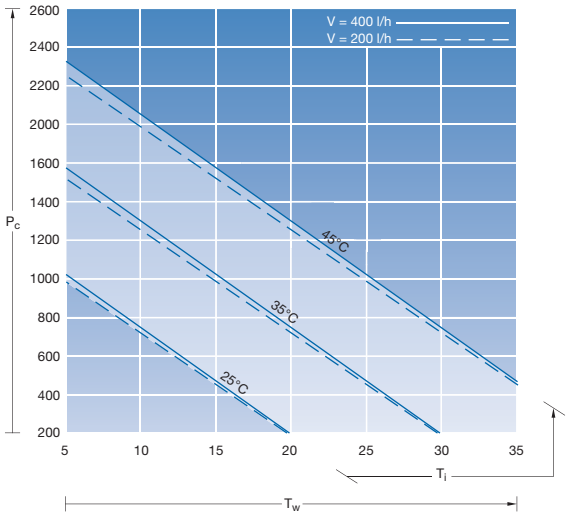


$\dot{V}$ = Volumetric flow (l/h)
ΔP = Water resistance (mbar)

Wall-mounted air/water heat exchangers

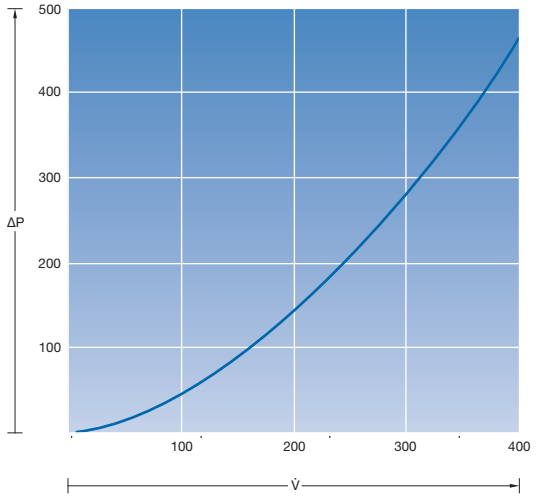
Output class 1250 W
Water-carrying parts: Copper/brass (Cu/CuZn)

50/60 Hz
SK 3215.100



T_w = Water inlet temperature (°C)
P_c = Total cooling output (W)
T_i = Enclosure internal temperature (°C)

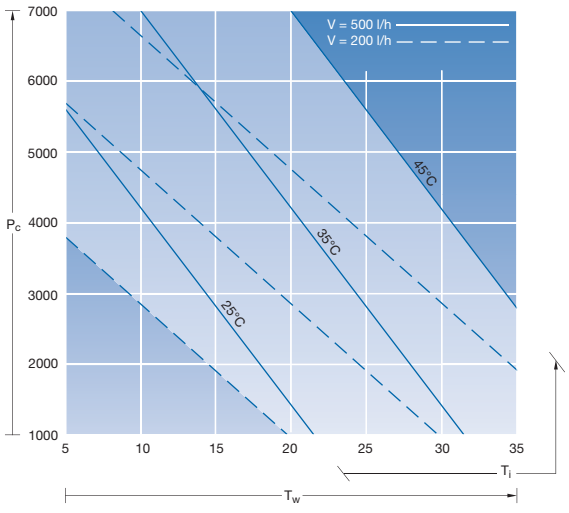
Water resistance diagram
SK 3215.100



$\dot{V}$ = Volumetric flow (l/h)
ΔP = Water resistance (mbar)

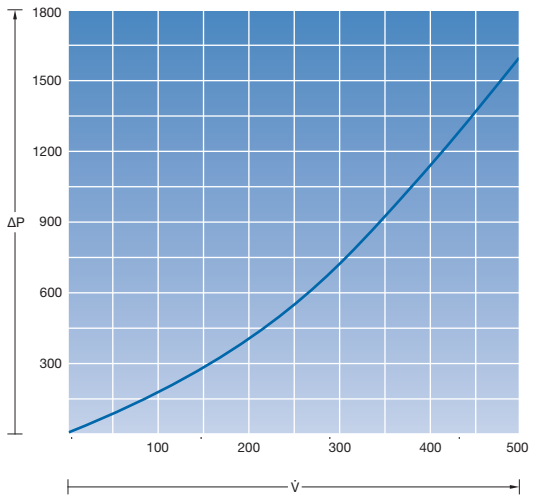
Output class 7000 W
Water-carrying parts: Copper/brass (Cu/CuZn)

50/60 Hz
SK 3216.480



T_w = Water inlet temperature (°C)
P_c = Total cooling output (W)
T_i = Enclosure internal temperature (°C)

Water resistance diagram
SK 3216.480

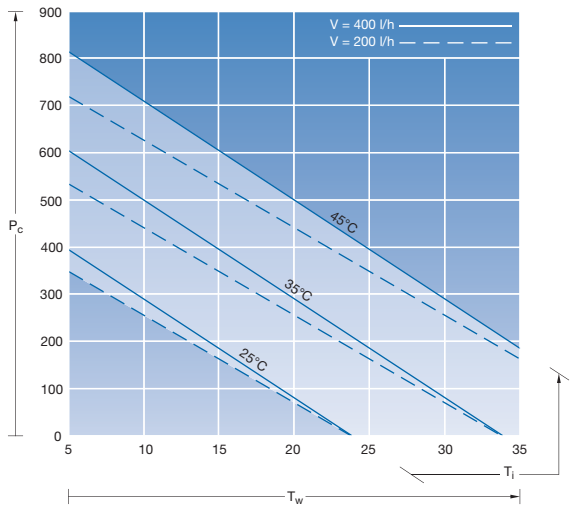


$\dot{V}$ = Volumetric flow (l/h)
ΔP = Water resistance (mbar)

Wall-mounted air/water heat exchangers

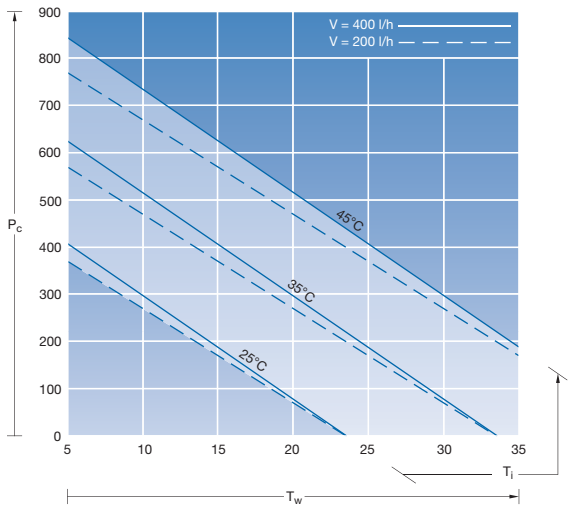
Output class 500 W
Water-carrying parts: Copper/brass (Cu/CuZn)

50 Hz
SK 3363.100, .500



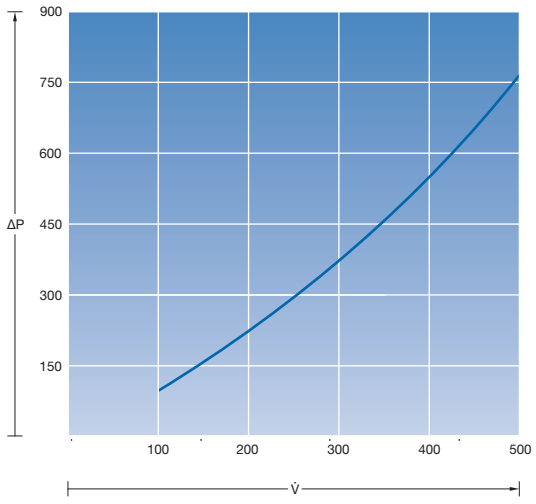
T_w = Water inlet temperature (°C)
P_c = Total cooling output (W)
T_i = Enclosure internal temperature (°C)

60 Hz
SK 3363.100, .500



T_w = Water inlet temperature (°C)
P_c = Total cooling output (W)
T_i = Enclosure internal temperature (°C)

Water resistance diagram
SK 3363.100, .500

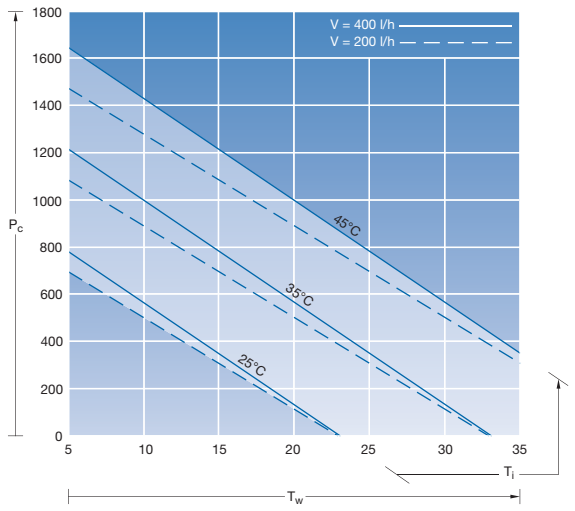


$\dot{V}$ = Volumetric flow (l/h)
ΔP = Water resistance (mbar)

Wall-mounted air/water heat exchangers

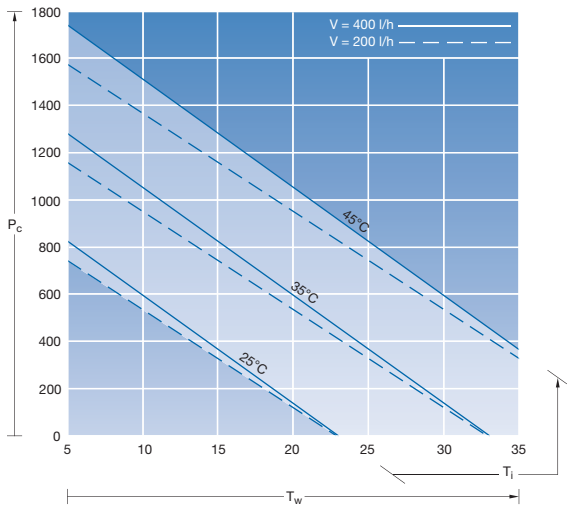
Output class 1000 W
Water-carrying parts: Copper/brass (Cu/CuZn)

50 Hz
SK 3364.100, .500



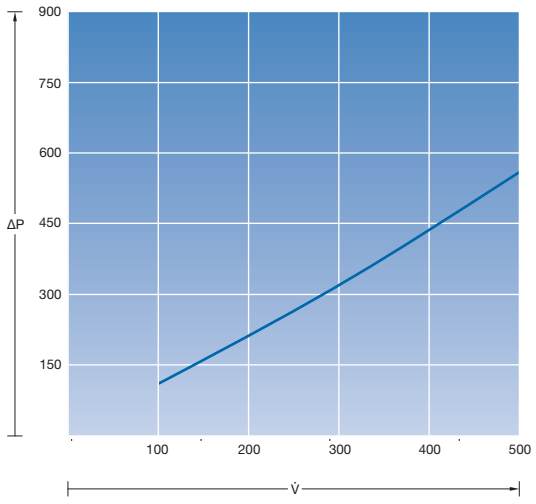
T_w = Water inlet temperature (°C)
P_c = Total cooling output (W)
T_i = Enclosure internal temperature (°C)

60 Hz
SK 3364.100, .500



T_w = Water inlet temperature (°C)
P_c = Total cooling output (W)
T_i = Enclosure internal temperature (°C)

Water resistance diagram
SK 3364.100, .500

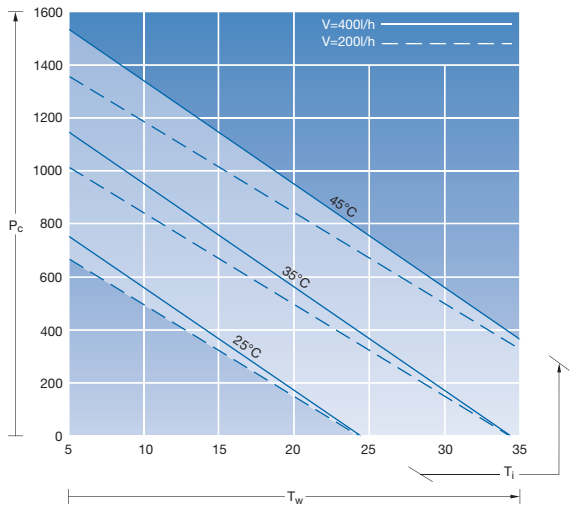


$\dot{V}$ = Volumetric flow (l/h)
ΔP = Water resistance (mbar)

Wall-mounted air/water heat exchangers

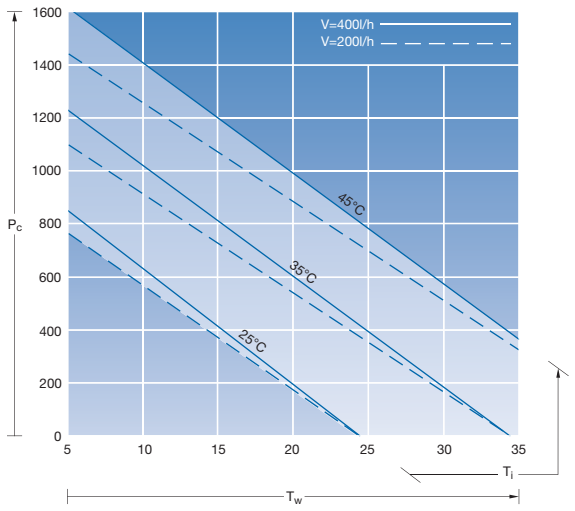
Output class 1000 W
Water-carrying parts: Stainless steel (1.4571)

50 Hz
SK 3364.504



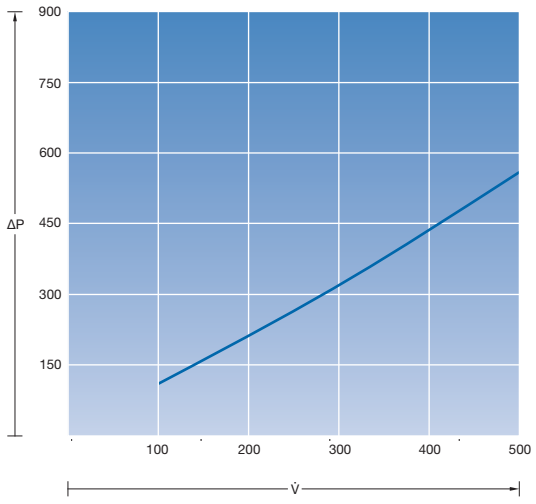
T_w = Water inlet temperature (°C)
P_c = Total cooling output (W)
T_i = Enclosure internal temperature (°C)

60 Hz
SK 3364.504



T_w = Water inlet temperature (°C)
P_c = Total cooling output (W)
T_i = Enclosure internal temperature (°C)

Water resistance diagram
SK 3364.504

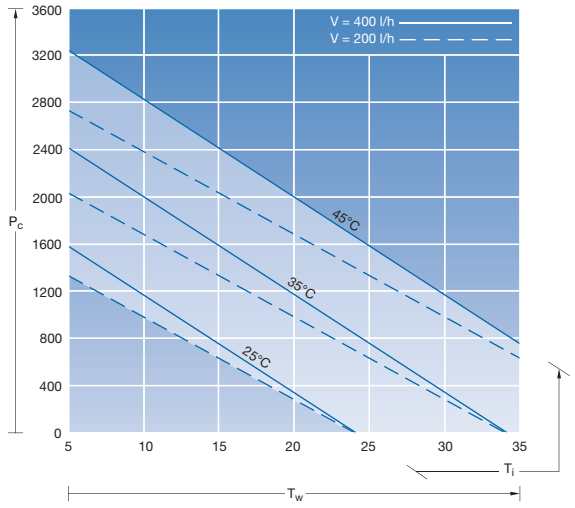


$\dot{V}$ = Volumetric flow (l/h)
ΔP = Water resistance (mbar)

Wall-mounted air/water heat exchangers

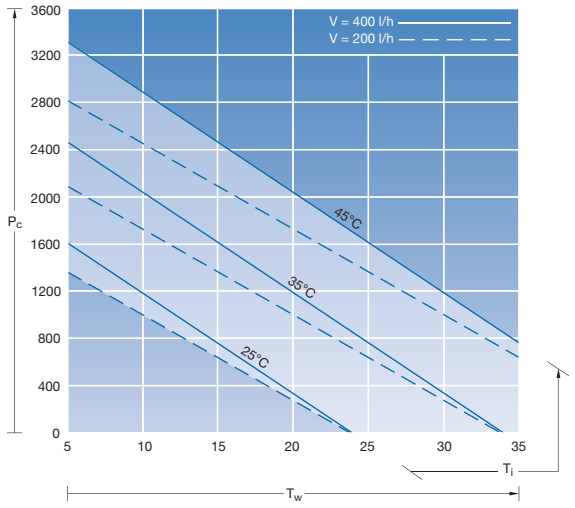
Output class 2000 W
Water-carrying parts: Copper/brass (Cu/CuZn)

50 Hz
SK 3373.100, .500



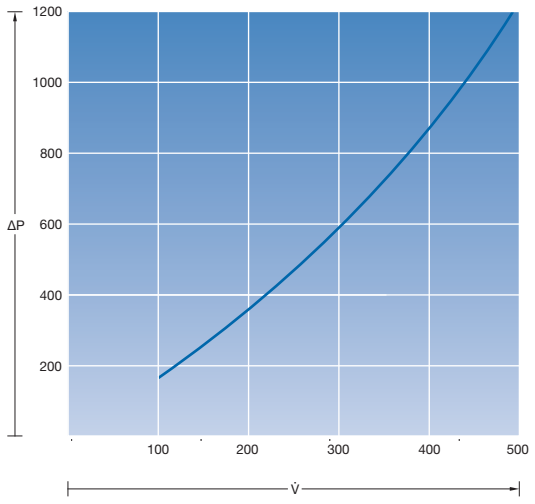
T_w = Water inlet temperature (°C)
P_c = Total cooling output (W)
T_i = Enclosure internal temperature (°C)

60 Hz
SK 3373.100, .500



T_w = Water inlet temperature (°C)
P_c = Total cooling output (W)
T_i = Enclosure internal temperature (°C)

Water resistance diagram
SK 3373.100, .500

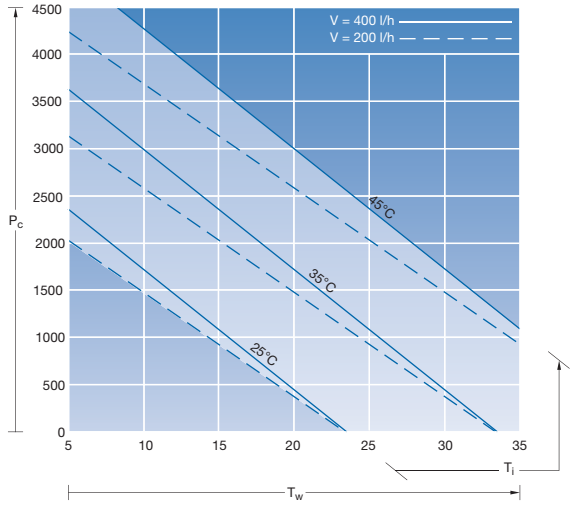


$\dot{V}$ = Volumetric flow (l/h)
ΔP = Water resistance (mbar)

Wall-mounted air/water heat exchangers

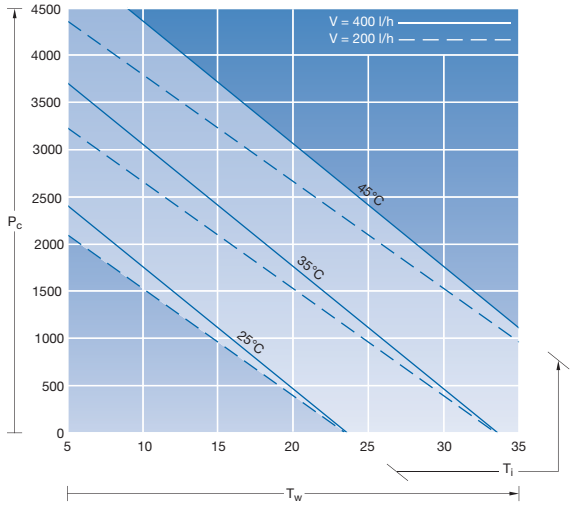
Output class 3000 W
Water-carrying parts: Copper/brass (Cu/CuZn)

50 Hz
SK 3374.100, .500



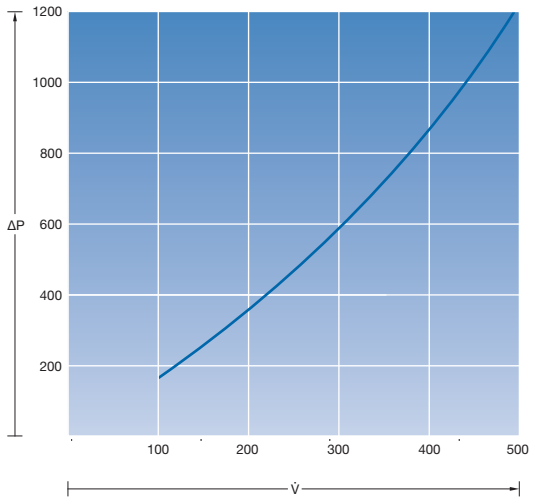
T_w = Water inlet temperature (°C)
P_c = Total cooling output (W)
T_i = Enclosure internal temperature (°C)

60 Hz
SK 3374.100, .500



T_w = Water inlet temperature (°C)
P_c = Total cooling output (W)
T_i = Enclosure internal temperature (°C)

Water resistance diagram
SK 3374.100, .500

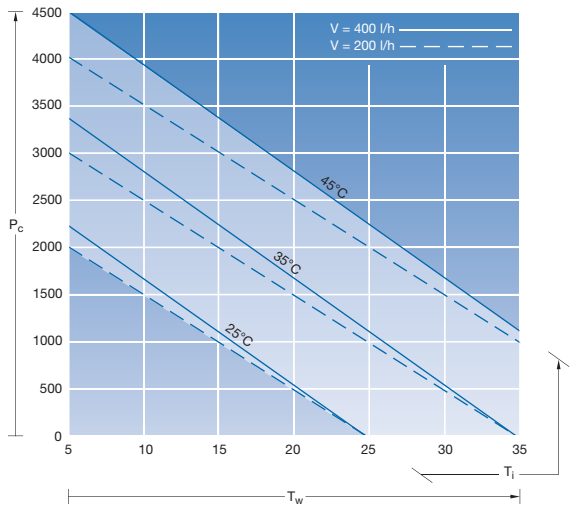


$\dot{V}$ = Volumetric flow (l/h)
ΔP = Water resistance (mbar)

Wall-mounted air/water heat exchangers

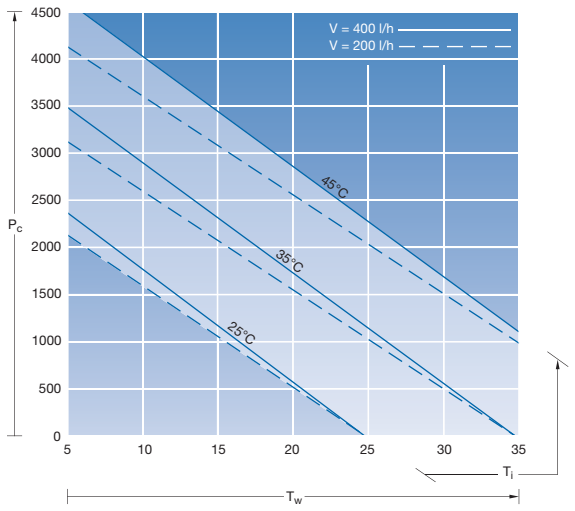
Output class 2500 W
Water-carrying parts: Stainless steel (1.4571)

50 Hz
SK 3374.504



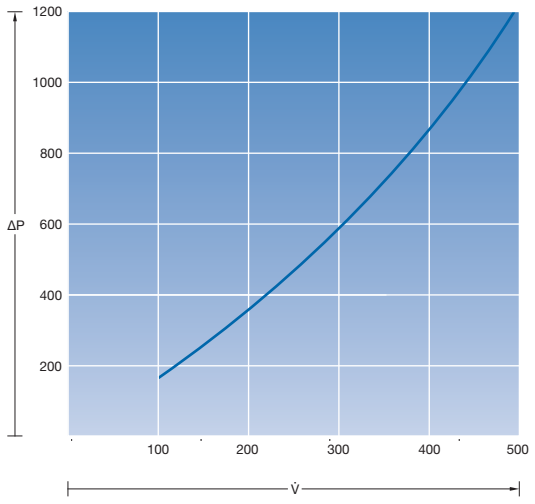
T_w = Water inlet temperature (°C)
P_c = Total cooling output (W)
T_i = Enclosure internal temperature (°C)

60 Hz
SK 3374.504



T_w = Water inlet temperature (°C)
P_c = Total cooling output (W)
T_i = Enclosure internal temperature (°C)

Water resistance diagram
SK 3374.504

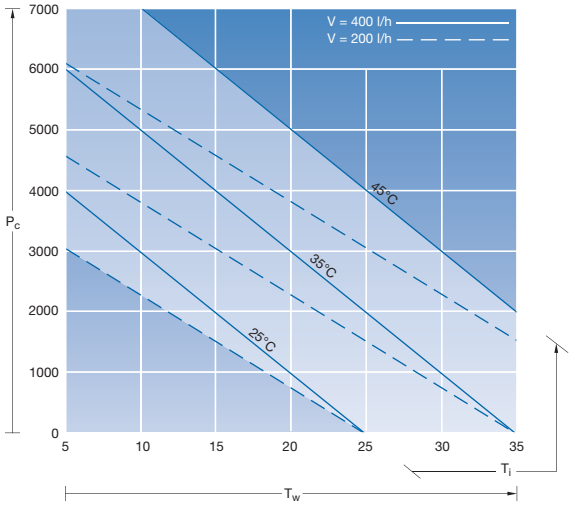


$\dot{V}$ = Volumetric flow (l/h)
ΔP = Water resistance (mbar)

Wall-mounted air/water heat exchangers

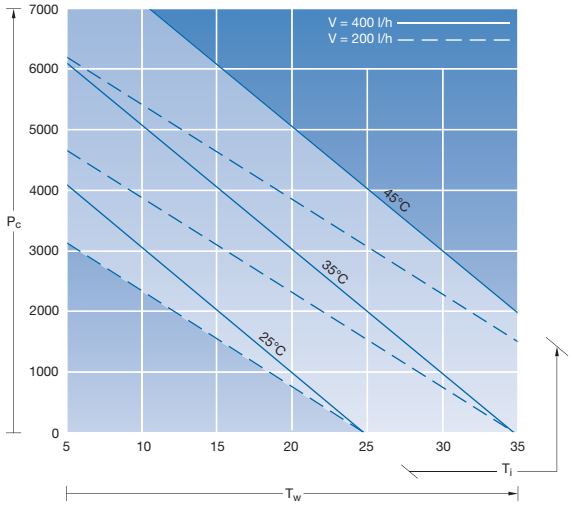
Output class 5000 W
Water-carrying parts: Copper/brass (Cu/CuZn)

50 Hz
SK 3375.100, .500



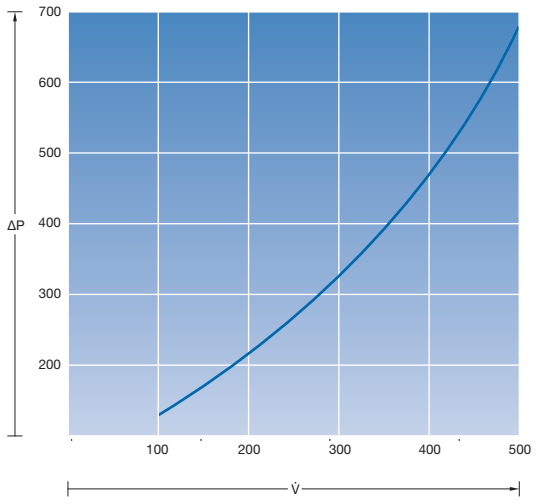
T_w = Water inlet temperature (°C)
P_c = Total cooling output (W)
T_i = Enclosure internal temperature (°C)

60 Hz
SK 3375.100, .500



T_w = Water inlet temperature (°C)
P_c = Total cooling output (W)
T_i = Enclosure internal temperature (°C)

Water resistance diagram
SK 3375.100, .500

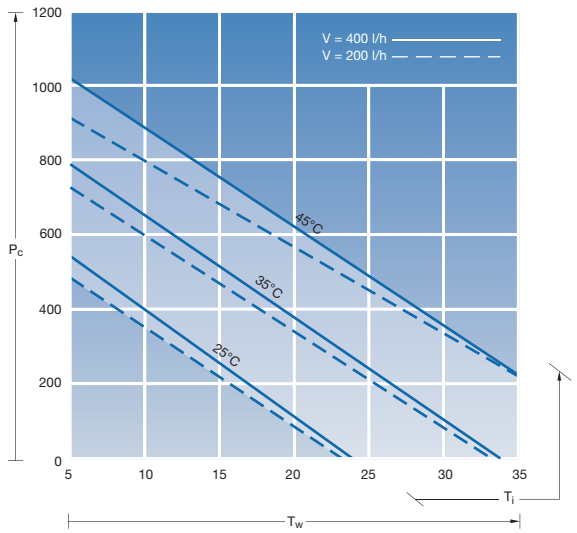


$\dot{V}$ = Volumetric flow (l/h)
ΔP = Water resistance (mbar)

Wall-mounted air/water heat exchangers HD

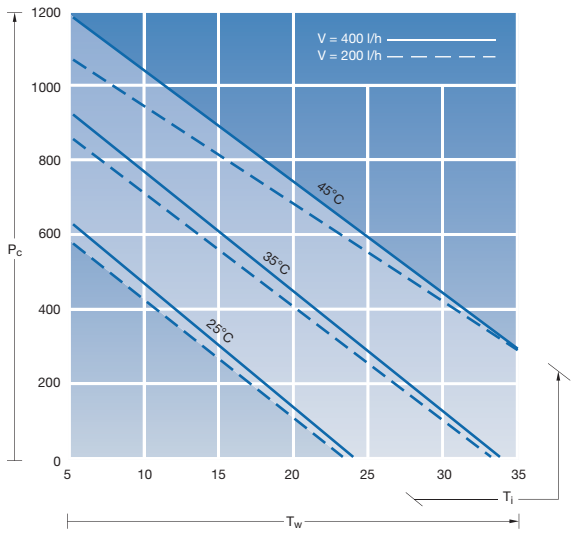
Output class 600/1200 W
Water-carrying parts: Copper/brass (Cu/CuZn)

50 Hz
SK 3214.700



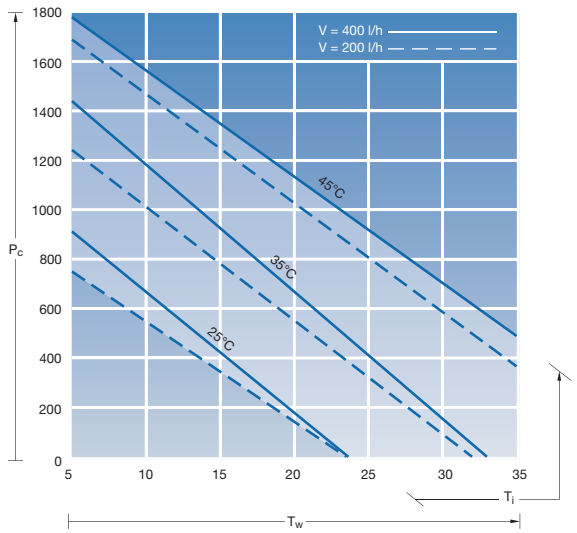
T_w = Water inlet temperature (°C)
P_c = Total cooling output (W)
T_i = Enclosure internal temperature (°C)

60 Hz
SK 3274.600



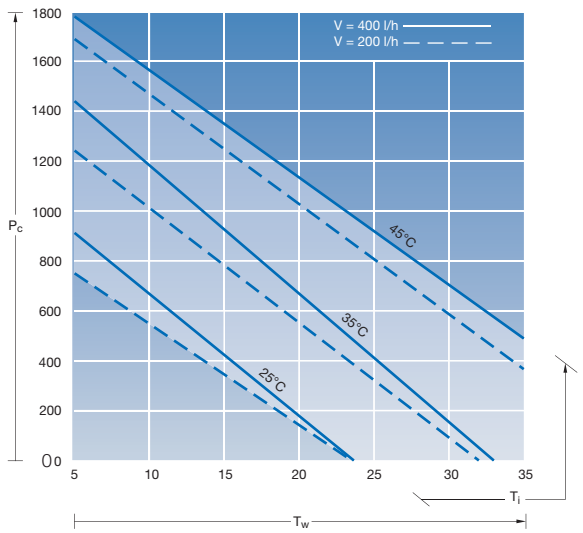
T_w = Water inlet temperature (°C)
P_c = Total cooling output (W)
T_i = Enclosure internal temperature (°C)

50 Hz
SK 3217.500



T_w = Water inlet temperature (°C)
P_c = Total cooling output (W)
T_i = Enclosure internal temperature (°C)

60 Hz
SK 3217.600

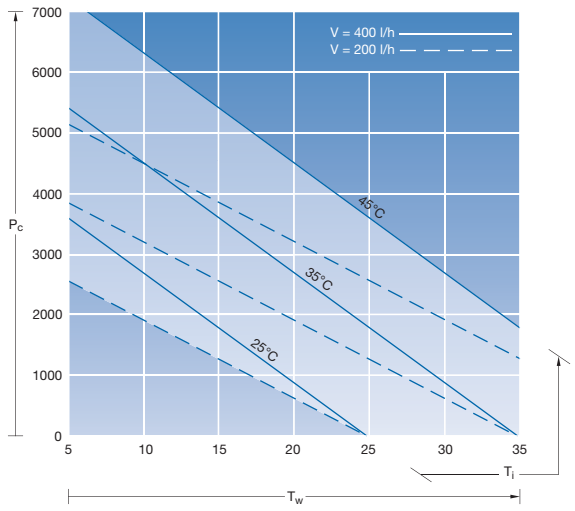


T_w = Water inlet temperature (°C)
P_c = Total cooling output (W)
T_i = Enclosure internal temperature (°C)

Wall-mounted air/water heat exchangers

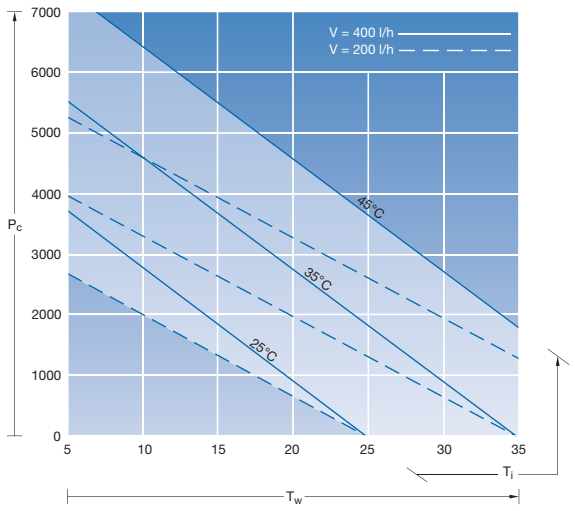
Output class 4000 W
Water-carrying parts: Stainless steel (1.4571)

50 Hz
SK 3375.504



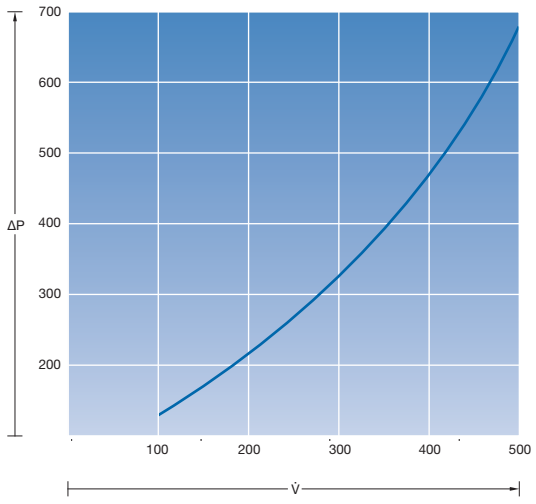
T_w = Water inlet temperature (°C)
P_c = Total cooling output (W)
T_i = Enclosure internal temperature (°C)

60 Hz
SK 3375.504



T_w = Water inlet temperature (°C)
P_c = Total cooling output (W)
T_i = Enclosure internal temperature (°C)

Water resistance diagram
SK 3375.504

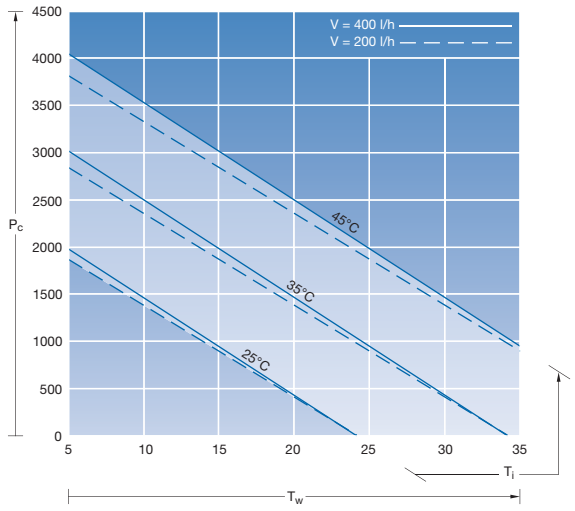


$\dot{V}$ = Volumetric flow (l/h)
ΔP = Water resistance (mbar)

Roof-mounted air/water heat exchangers

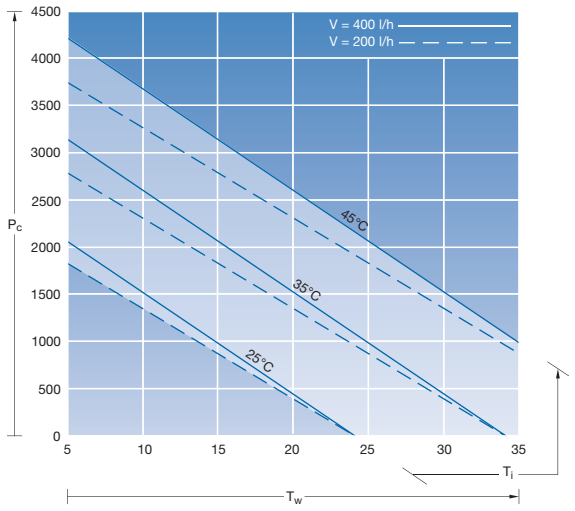
Output class 2500 W
Water-carrying parts: Copper/brass (Cu/CuZn)

50 Hz
SK 3209.100, .500



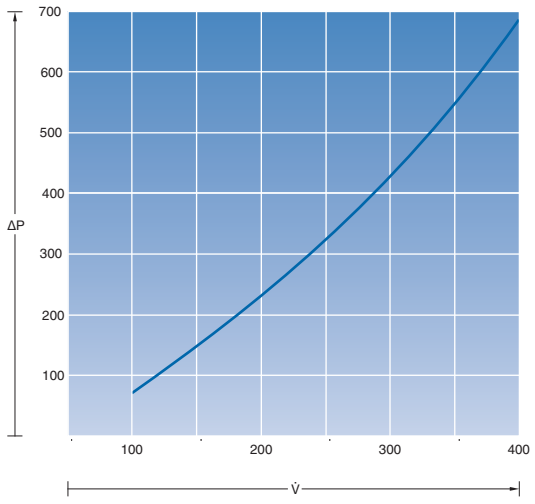
T_w = Water inlet temperature (°C)
P_c = Total cooling output (W)
T_i = Enclosure internal temperature (°C)

60 Hz
SK 3209.100, .500



T_w = Water inlet temperature (°C)
P_c = Total cooling output (W)
T_i = Enclosure internal temperature (°C)

Water resistance diagram
SK 3209.100, .500

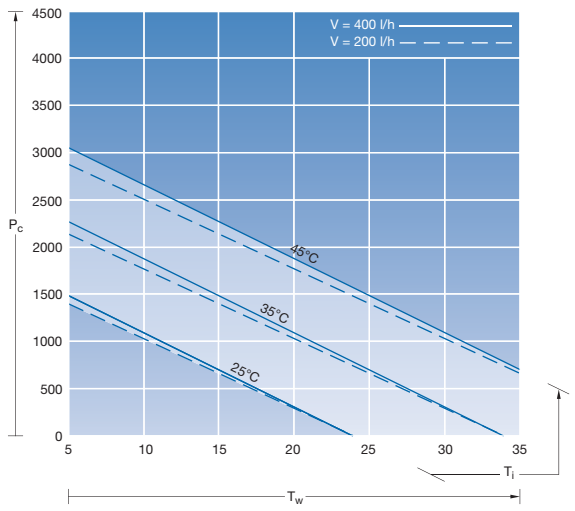


$\dot{V}$ = Volumetric flow (l/h)
ΔP = Water resistance (mbar)

Roof-mounted air/water heat exchangers

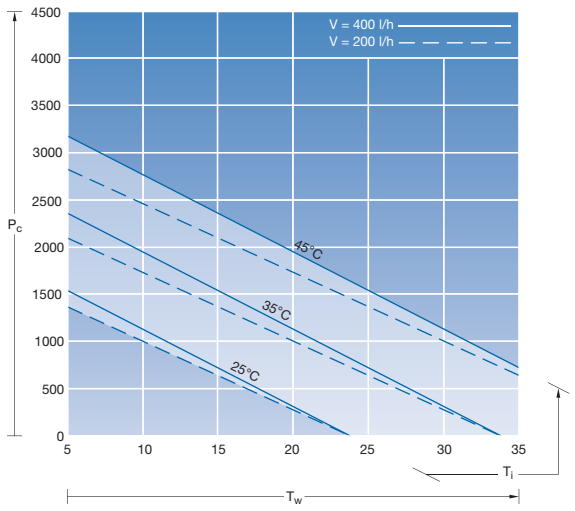
Output class 1875 W
Water-carrying parts: Stainless steel (1.4571)

50 Hz
SK 3209.504



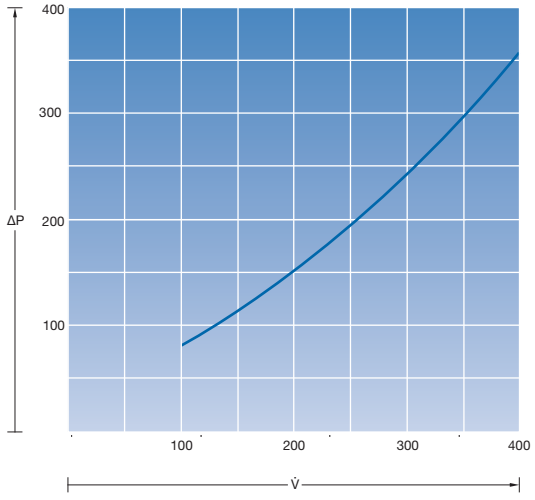
T_w = Water inlet temperature (°C)
P_c = Total cooling output (W)
T_i = Enclosure internal temperature (°C)

60 Hz
SK 3209.504



T_w = Water inlet temperature (°C)
P_c = Total cooling output (W)
T_i = Enclosure internal temperature (°C)

Water resistance diagram
SK 3209.504

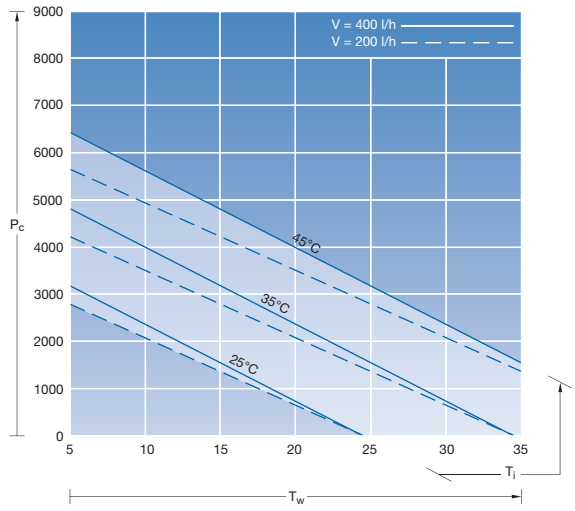


$\dot{V}$ = Volumetric flow (l/h)
ΔP = Water resistance (mbar)

Roof-mounted air/water heat exchangers

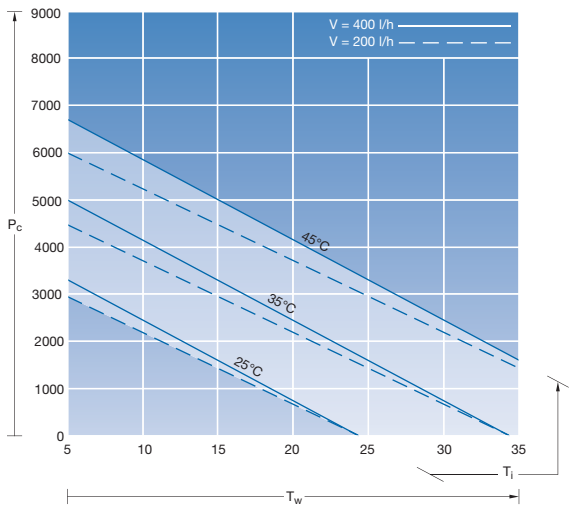
Output class 4000 W
Water-carrying parts: Copper/brass (Cu/CuZn)

50 Hz
SK 3210.100, .500



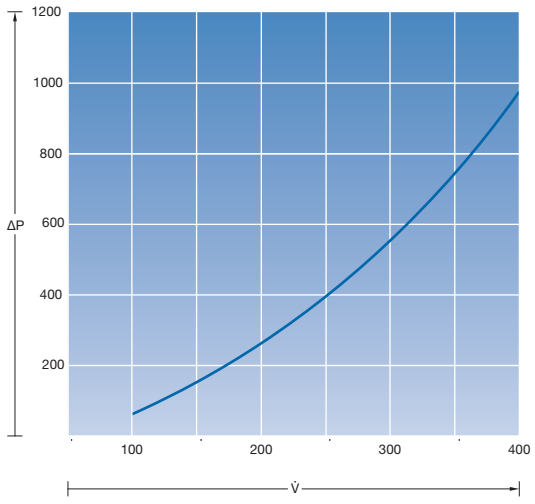
T_w = Water inlet temperature (°C)
P_c = Total cooling output (W)
T_i = Enclosure internal temperature (°C)

60 Hz
SK 3210.100, .500



T_w = Water inlet temperature (°C)
P_c = Total cooling output (W)
T_i = Enclosure internal temperature (°C)

Water resistance diagram
SK 3210.100, .500

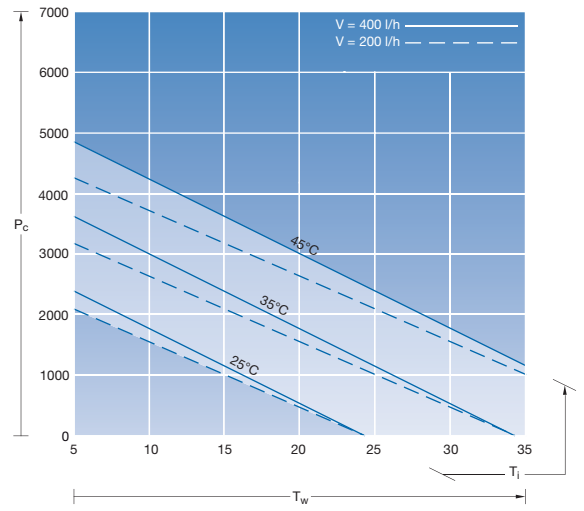


$\dot{V}$ = Volumetric flow (l/h)
ΔP = Water resistance (mbar)

Roof-mounted air/water heat exchangers

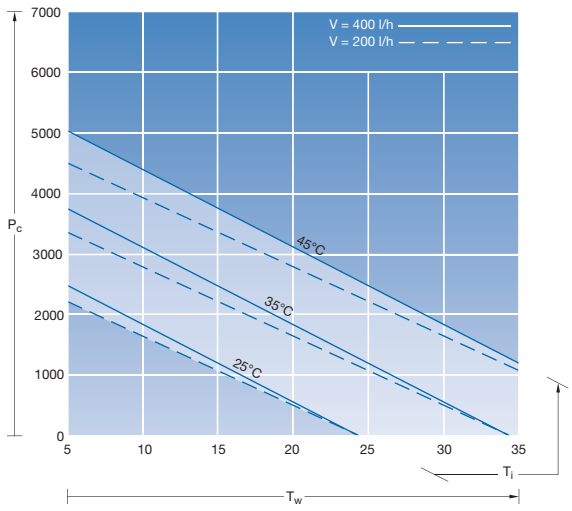
Output class 3000 W
Water-carrying parts: Stainless steel (1.4571)

50 Hz
SK 3210.504



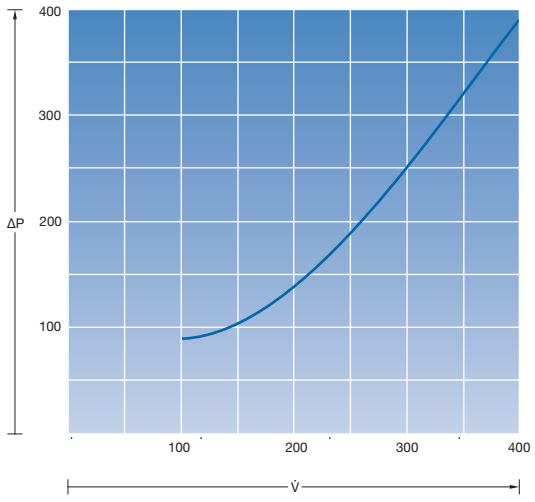
T_w = Water inlet temperature (°C)
P_c = Total cooling output (W)
T_i = Enclosure internal temperature (°C)

60 Hz
SK 3210.504



T_w = Water inlet temperature (°C)
P_c = Total cooling output (W)
T_i = Enclosure internal temperature (°C)

Water resistance diagram
SK 3210.504

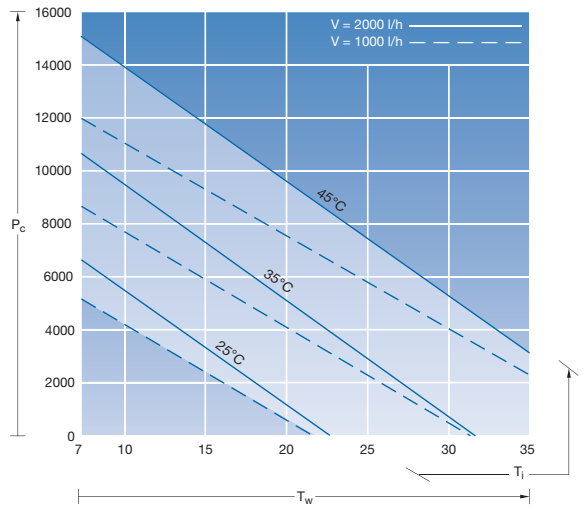


$\dot{V}$ = Volumetric flow (l/h)
ΔP = Water resistance (mbar)

Liquid Cooling Package

Output class 10 kW, LCP Rack Industry
Water-carrying parts: Copper/brass (Cu/CuZn)

50/60 Hz
SK 3378.200, .280

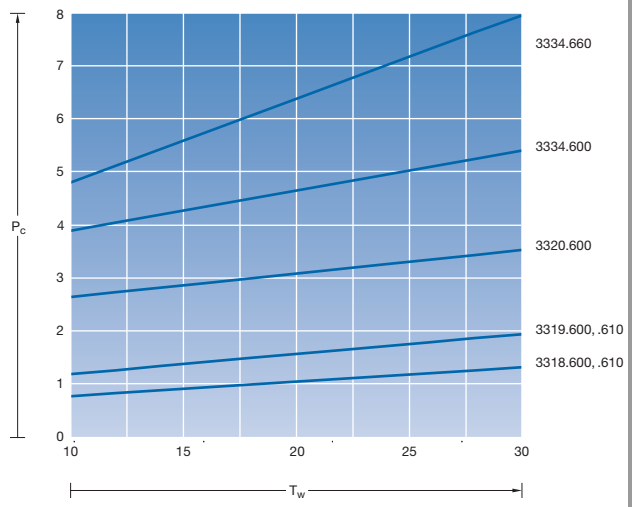


T_w = Water inlet temperature (°C)
P_c = Total cooling output (W)
T_i = Enclosure internal temperature (°C)

TopTherm chillers

Output class 1 – 6 kW

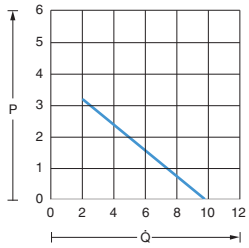
50 Hz at T_u = 32 °C
SK 3318.600, .610, 3319.600, .610, 3320.600, 3334.600, .660



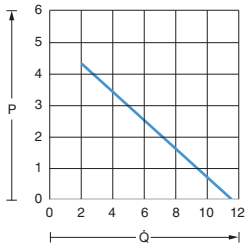
T_w = Water inlet temperature (°C)
T_u = Ambient temperature (°C)
P_c = Total cooling output (kW)

Characteristic curves of pump
SK 3318.600/SK 3318.610/SK 3319.600/SK 3319.610

50 Hz

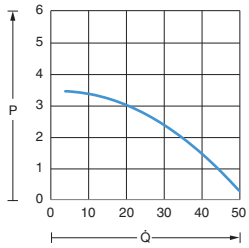


60 Hz

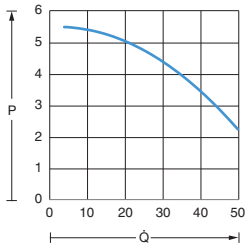


SK 3320.600/SK 3334.600/SK 3334.660

50 Hz



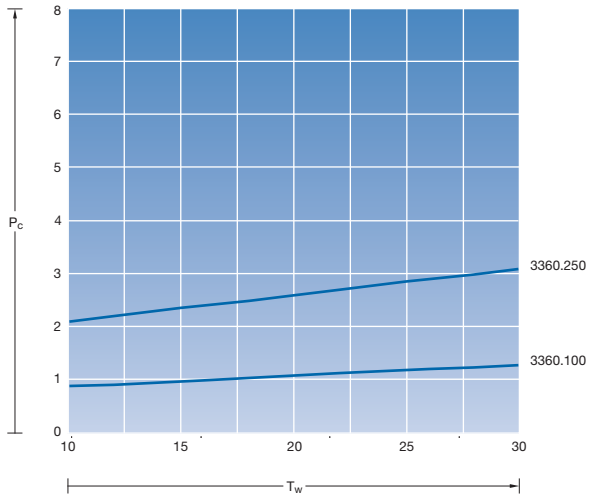
60 Hz



P = External static pressure [bar]
Q̇ = Delivery flow Q [l/min]

Output class 1 – 2.5 kW, wall-mounted

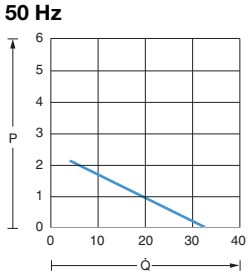
50 Hz at T_u = 32 °C
SK 3360.100, .250



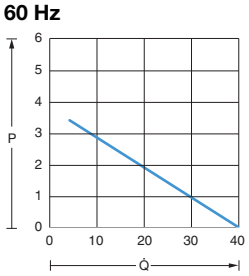
T_w = Water inlet temperature (°C)
T_u = Ambient temperature (°C)
P_c = Total cooling output (kW)

Characteristic curves of pump
SK 3360.100/SK 3360.250

50 Hz



60 Hz

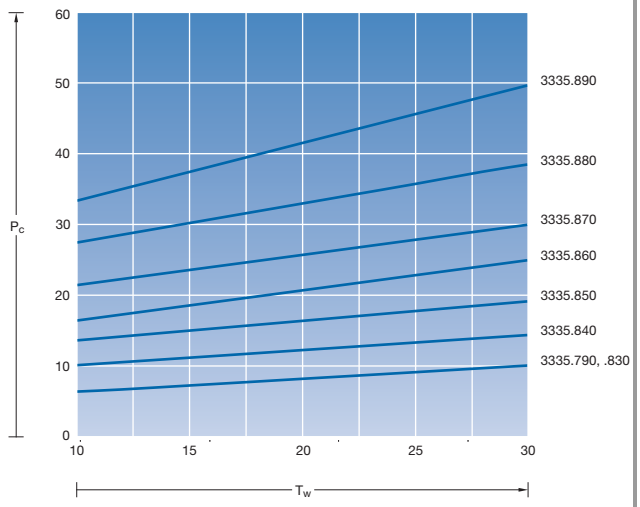


P = External static pressure [bar]
Q̇ = Delivery flow Q [l/min]

TopTherm chillers

Output class 8 – 40 kW

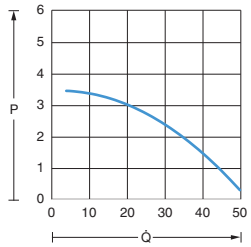
50 Hz at T_u = 32 °C
SK 3335.790, .830, .840, .850, .860, .870, .880, .890



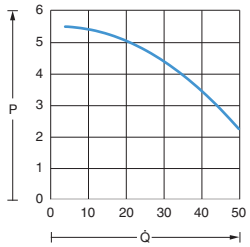
T_w = Water inlet temperature (°C)
T_u = Ambient temperature (°C)
P_c = Total cooling output (kW)

Characteristic curves of pump
SK 3335.790/SK 3335.830

50 Hz

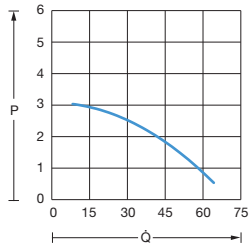


60 Hz

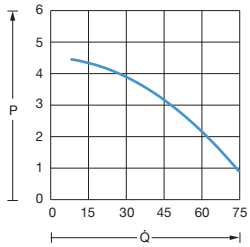


SK 3335.840

50 Hz

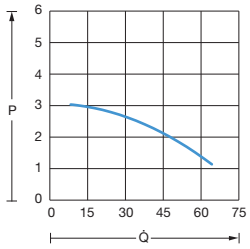


60 Hz

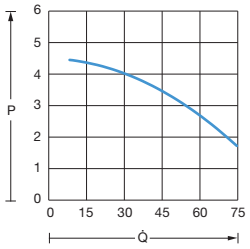


Characteristic curves of pump
SK 3335.850

50 Hz

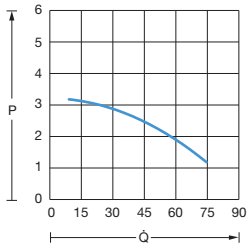


60 Hz

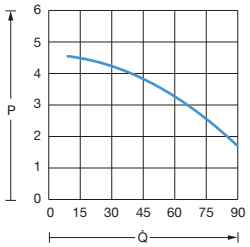


SK 3335.860

50 Hz

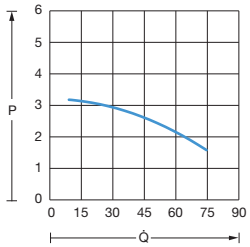


60 Hz

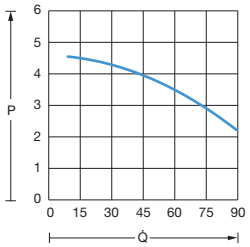


SK 3335.870

50 Hz

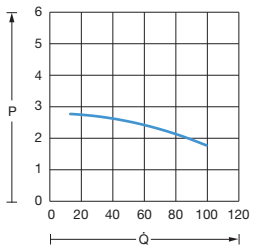


60 Hz

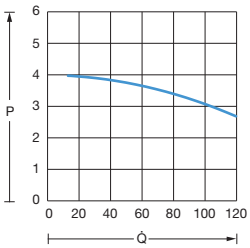


SK 3335.880

50 Hz

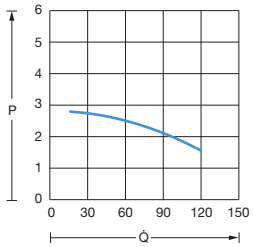


60 Hz

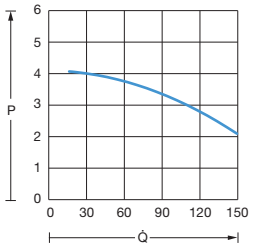


SK 3335.890

50 Hz



60 Hz

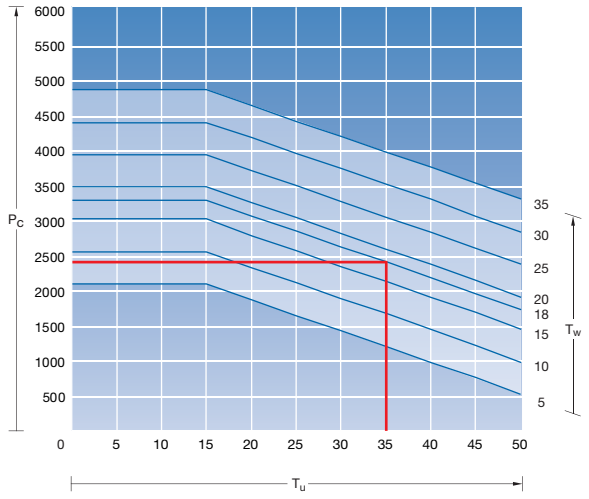


P = External static pressure [bar]
Q̇ = Delivery flow Q [l/min]

Blue e+ chillers

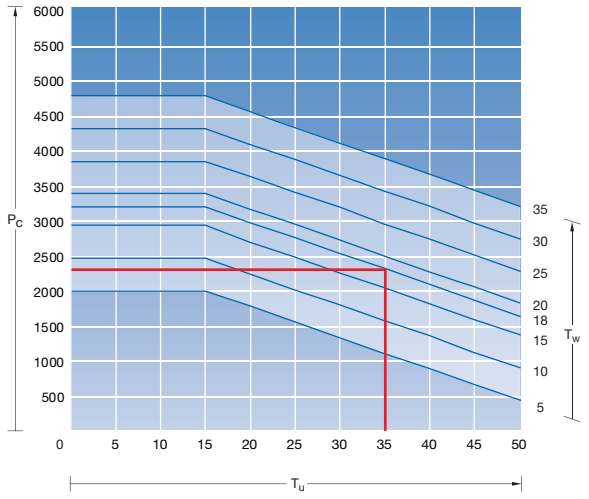
Output class 2.5 kW

50 Hz
SK 3320.200



T_w = Water inlet temperature [°C]
P_c = Total cooling output [W]
T_u = Ambient temperature [°C]

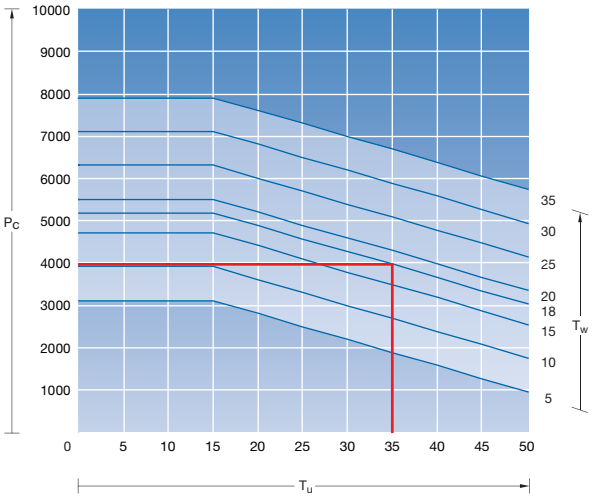
60 Hz
SK 3320.200



T_w = Water inlet temperature [°C]
P_c = Total cooling output [W]
T_u = Ambient temperature [°C]

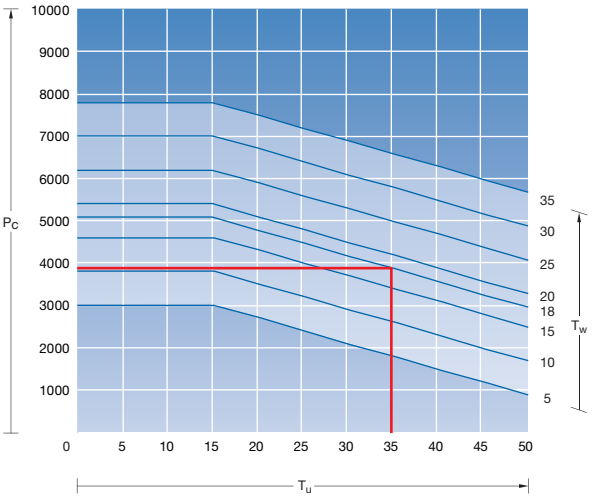
Output class 4.0 kW

50 Hz
SK 3334.300



T_w = Water inlet temperature [°C]
P_c = Total cooling output [W]
T_u = Ambient temperature [°C]

60 Hz
SK 3334.300

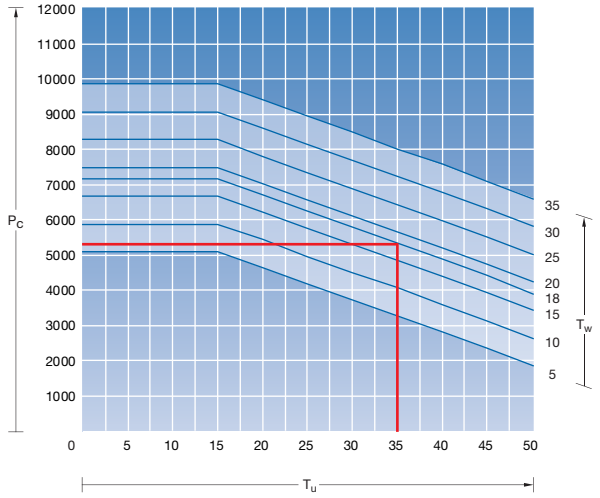


T_w = Water inlet temperature [°C]
P_c = Total cooling output [W]
T_u = Ambient temperature [°C]

Blue e+ chillers

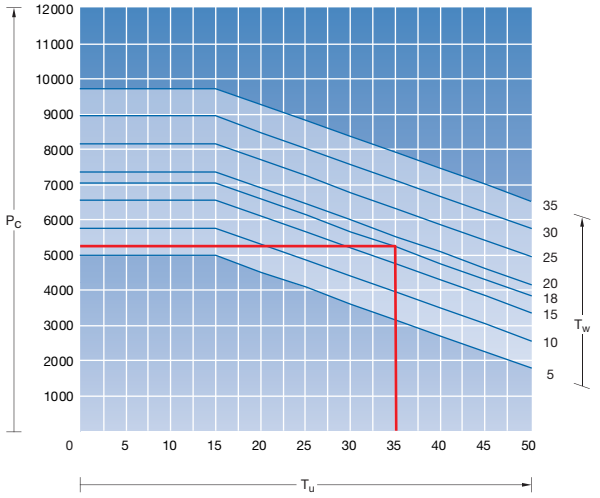
Output class 5.5 kW

50 Hz
SK 3334.400



T_w = Water inlet temperature [°C]
P_c = Total cooling output [W]
T_u = Ambient temperature [°C]

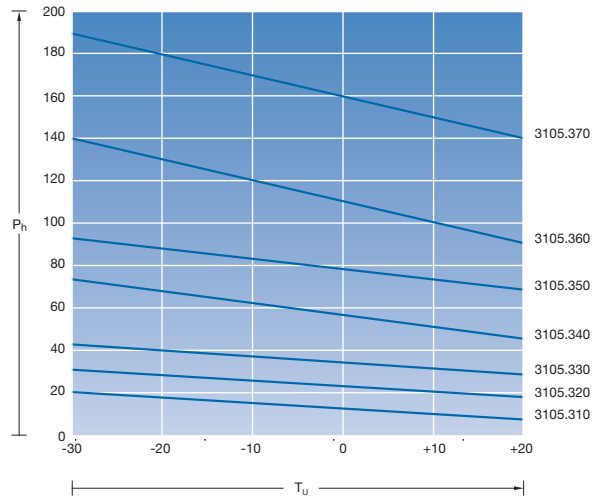
60 Hz
SK 3334.400



T_w = Water inlet temperature [°C]
P_c = Total cooling output [W]
T_u = Ambient temperature [°C]

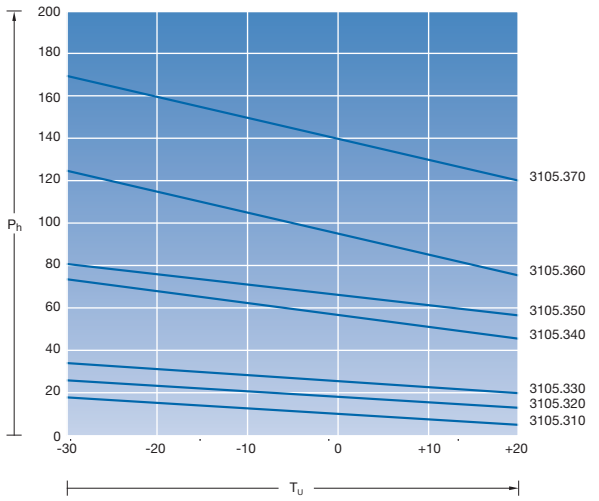
Enclosure heaters without fan

Heating output 230 V



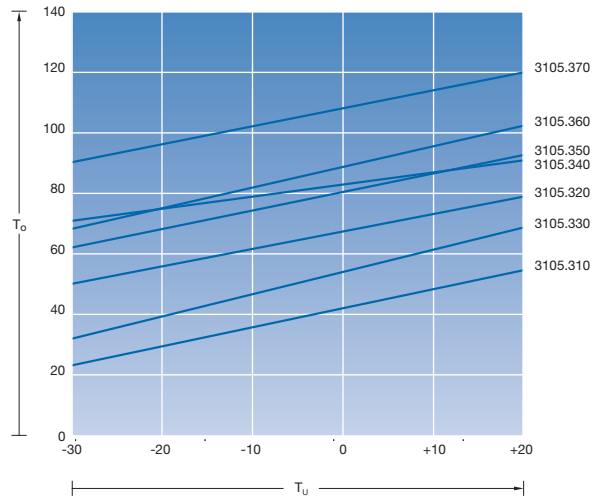
T_u = Ambient temperature (°C)
P_h = Heating output (W)

Heating output 110 V



T_u = Ambient temperature (°C)
P_h = Heating output (W)

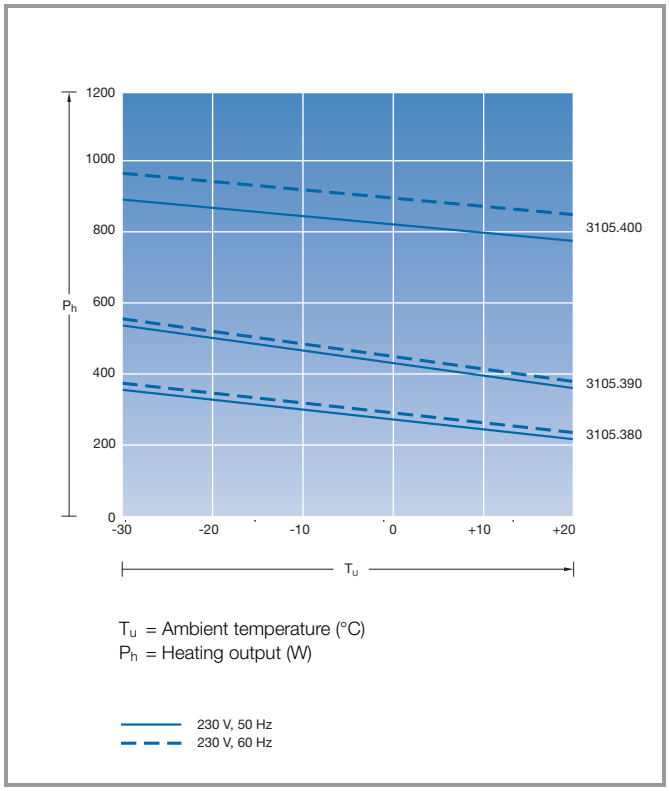
Maximum surface temperature



T_u = Ambient temperature (°C)
T_o = Surface temperature (°C)

Enclosure heaters with fan

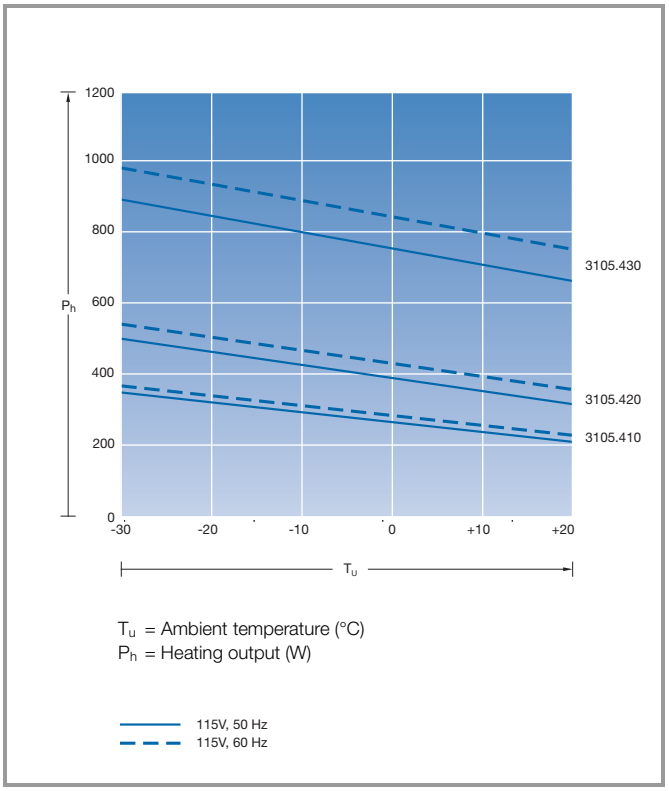
Heating output 230 V, 50/60 Hz



T_u = Ambient temperature (°C)
P_h = Heating output (W)

230 V, 50 Hz
230 V, 60 Hz

Heating output 115 V, 50/60 Hz

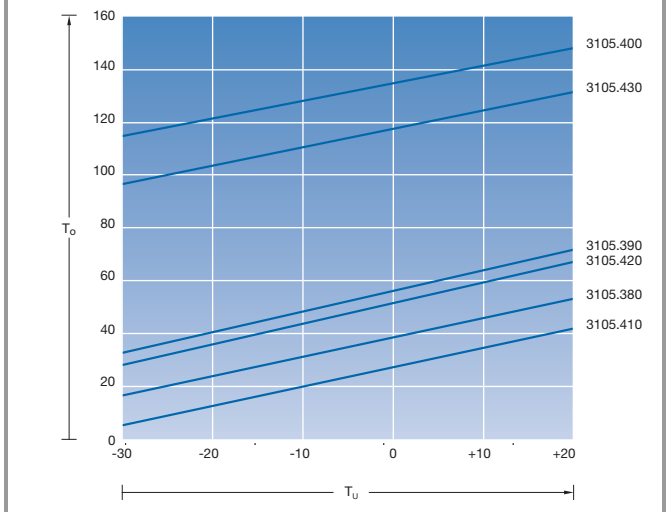


T_u = Ambient temperature (°C)
P_h = Heating output (W)

115V, 50 Hz
115V, 60 Hz

Maximum surface temperature

SK 3105.400



T_u = Ambient temperature (°C)
T_o = Surface temperature (°C)

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