
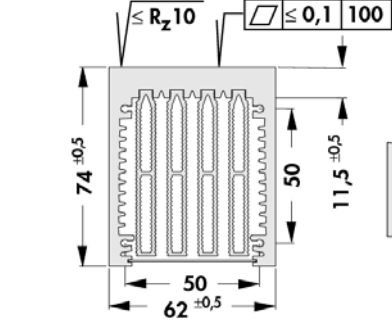
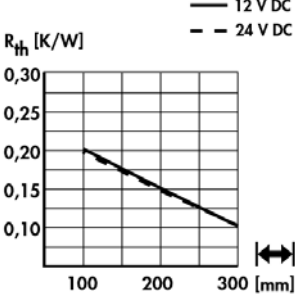

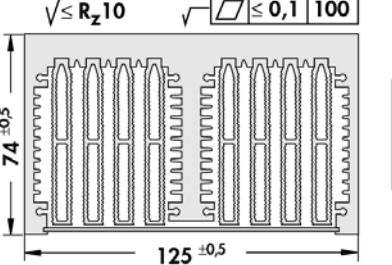
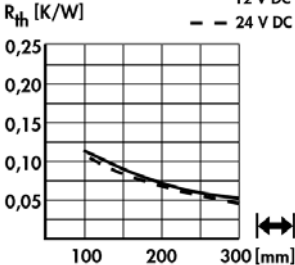

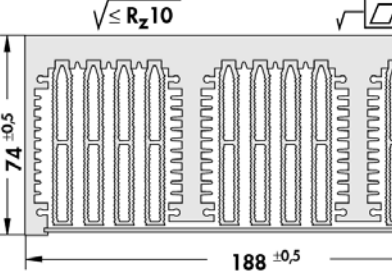
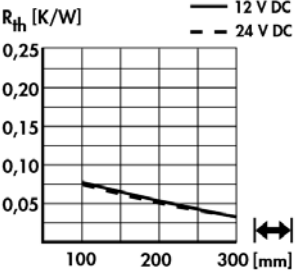


Cooling aggregates with axial fan

Hollow-fin cooling aggregates

- geometry of hollow fin optimising the air flow
- particularly effective heat dissipation
- compact construction
- semiconductor mounting surface for milled flat

art. no. LA 6 ...			
art. no. LA 7 ...			
art. no. LA 8 ...			
please indicate: ... [↔] 100 150 200 250 300 mm		... fan type 12=12 V DC 24=24 V DC	

Technical data of the fans

	... 12	... 24
type	ebmpapst, ball bearing	ebmpapst, ball bearing
dimensions	60 x 60 x 25 mm	60 x 60 x 25 mm
voltage	12 V DC	24 V DC
power input	2.9 W	3 W
max. air flow	56 m ³ /h	56 m ³ /h
temperature range	-20 °C ... +70 °C	-20 °C ... +70 °C
noise level	41 dB(A)	41 dB(A)
rated speed	6,800 min ⁻¹	6,850 min ⁻¹
weight	66 g	66 g
failure rate (L₁₀)	L ₁₀ > 60.000 h (40 °C)	L ₁₀ > 60.000 h (40 °C)

Other fan types and fan voltages on request.

Miniature cooling aggregates
Protection grid for axial fans
Heatsinks for Solid State Relay
High capacity heatsinks

→ D 9 - 11
→ D 31
→ A 12
→ A 56 - 57

Special heatsink design
Hole pattern
Standard aluminium profiles
Technical introduction

→ A 133 - 134
→ A 21
→ A 133 - 134
→ A 2 - 7

D 14

A

B

C

D

E

F

G

H

I

K

L


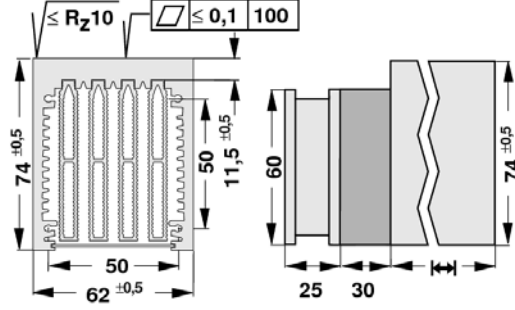
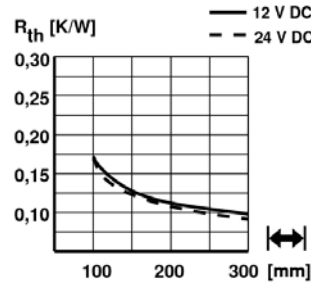

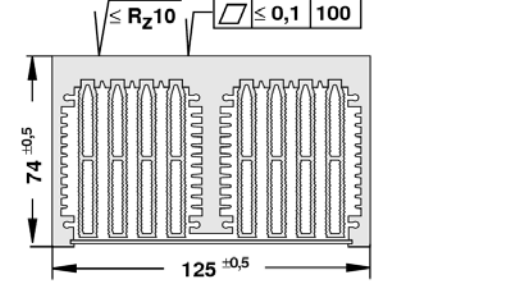
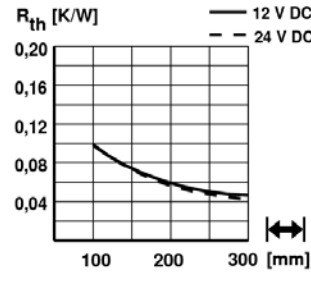

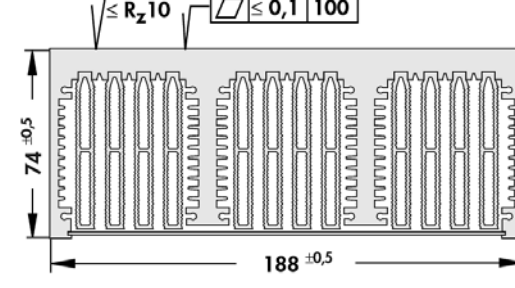
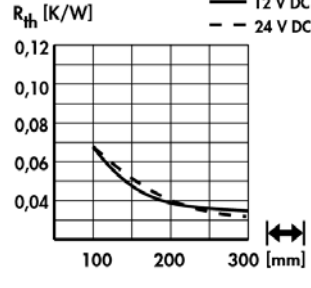

M

N

Cooling aggregates with axial fan

Hollow-fin cooling aggregates

- with air flow chamber
- geometry of hollow fin optimising the air flow
- particularly effective heat dissipation
- compact construction
- semiconductor mounting surface milled flat

art. no. LA V 6 ...			
art. no. LA V 7 ...			
art. no. LA V 8 ...			
please indicate: ... 		... fan type 12=12 V DC 24=24 V DC	

Technical data of the fans

	... 12	... 24
type	ebmpapst, ball bearing	ebmpapst, ball bearing
dimensions	60 x 60 x 25 mm	60 x 60 x 25 mm
voltage	12 V DC	24 V DC
power input	2.9 W	3 W
max. air flow	56 m ³ /h	56 m ³ /h
temperature range	-20 °C ... +70 °C	-20 °C ... +70 °C
noise level	41 dB(A)	41 dB(A)
rated speed	6,800 min ⁻¹	6,850 min ⁻¹
weight	66 g	66 g
failure rate (L₁₀)	L ₁₀ > 60.000 h (40 °C)	L ₁₀ > 60.000 h (40 °C)

Other fan types and fan voltages on request.

D 15


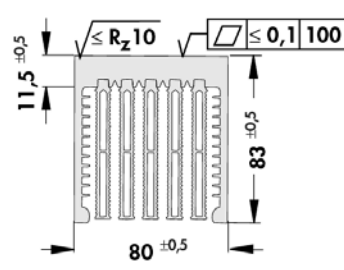
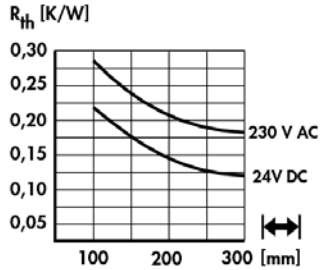

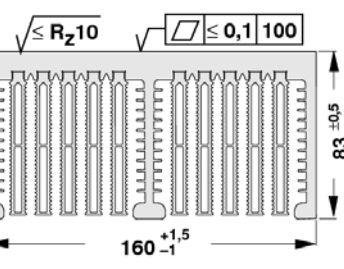
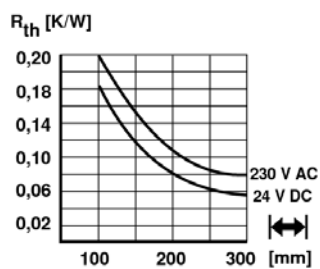

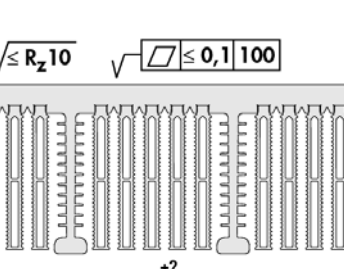
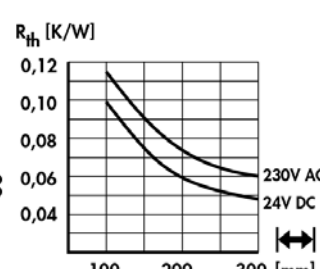

Protection grid for axial fans → D 31
 High capacity cooling aggregat. → D 23 - 26
 Cooling aggregates with radial fan → D 28 - 30
 Cooling aggreg. in segment mount. → D 5 - 7

Hole pattern → A 21
 Silicone wafers → E 2 - 4
 Thermal. conductive silicone foam foil → E 6
 Mounting pads → E 39

Cooling aggregates with axial fan

Hollow-fin cooling aggregates

- geometry of hollow fin optimising the air flow
- particularly effective heat dissipation
- compact construction
- semiconductor mounting surface for milled flat

art. no. LA 9 ...			
art. no. LA 10 ...			
art. no. LA 11 ...			
please indicate: ... 		... fan type 24 = 24 V DC 230 = 230 V AC	
		100 150 200 250 300 mm	

Technical data of the fans

	... 24	... 230
type	ebmpapst, ball bearing	ebmpapst, ball bearing
dimensions	80 x 80 x 32 mm	80 x 80 x 38 mm
voltage	24 V DC	230 V AC
power input	6 W	12 W
max. air flow	80 m ³ /h	50 m ³ /h
temperature range	-20 °C ... +75 °C	-40 °C ... +90 °C
noise level	48 dB(A)	31 dB(A)
rated speed	5,000 min ⁻¹	2,800 min ⁻¹
weight	170 g	480 g
failure rate (L₁₀)	L ₁₀ > 55.000 h (40 °C)	L ₁₀ > 52.500 h (40 °C)

Other fan types and fan voltages on request.

Miniature cooling aggregates
Protection grid for axial fans
Heatsinks for Solid State Relay
High capacity heatsinks

→ D 9 - 11
→ D 31
→ A 12
→ A 56 - 57

Special heatsink design
Hole pattern
Standard aluminium profiles
Technical introduction

→ A 133 - 134
→ A 21
→ A 133 - 134
→ A 2 - 7

D 16

A

B

C

D

E

F

G

H

I

K

L

M

N

A

Cooling aggregates with axial fan


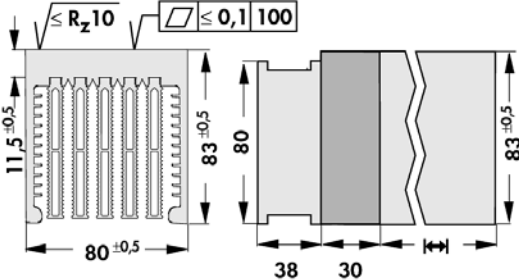
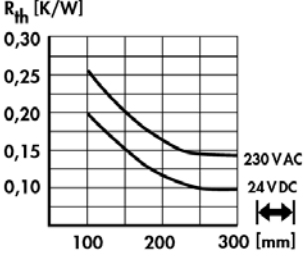

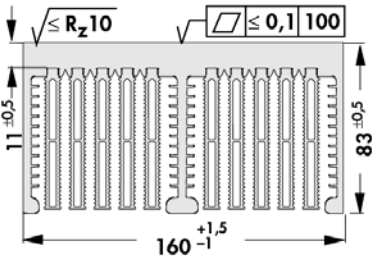
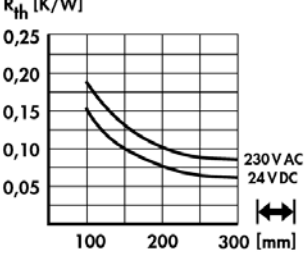

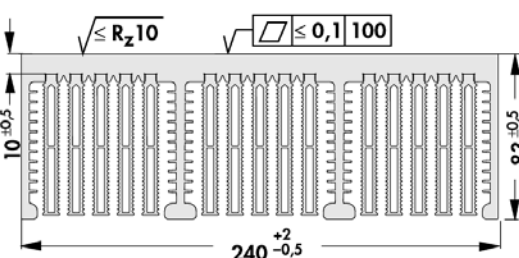
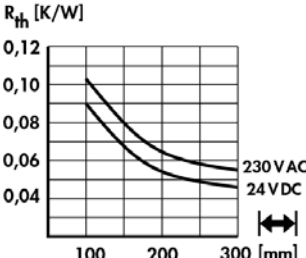
B

Hollow-fin cooling aggregates

- with air flow chamber
- geometry of hollow fin optimising the air flow
- particularly effective heat dissipation
- compact construction
- semiconductor mounting surface for milled flat

C

D

art. no. LA V 9 ...			
art. no. LA V 10 ...			
art. no. LA V 11 ...			
<p>please indicate: ... \longleftrightarrow fan type</p> <p>100 150 200 250 300 mm 24 = 24 V DC 230 = 230 V AC</p>			

E

F

G

H

I

Technical data of the fans

	... 24	... 230
type	ebmpapst, ball bearing	ebmpapst, ball bearing
dimensions	80 x 80 x 32 mm	80 x 80 x 38 mm
voltage	24 V DC	230 V AC
power input	6 W	12 W
max. air flow	80 m ³ /h	50 m ³ /h
temperature range	-20 °C ... +75 °C	-40 °C ... +90 °C
noise level	48 dB(A)	31 dB(A)
rated speed	5,000 min ⁻¹	2,800 min ⁻¹
weight	170 g	480 g
failure rate (L₁₀)	L ₁₀ > 55.000 h (40 °C)	L ₁₀ > 52.500 h (40 °C)

Other fan types and fan voltages on request.

M

N

D 17


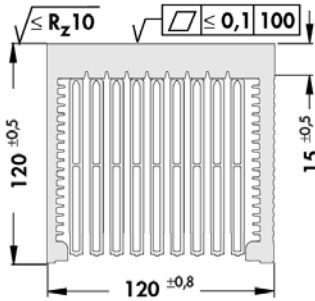
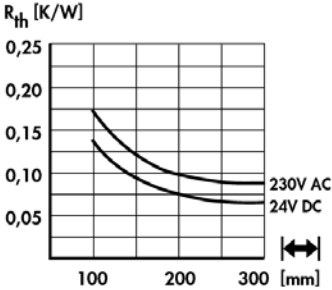

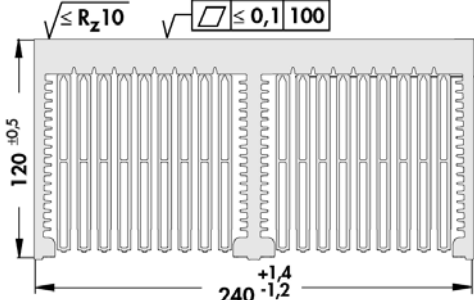
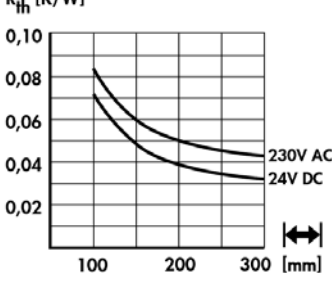

Protection grid for axial fans → D 31
 High capacity cooling aggregat. → D 23 – 26
 Cooling aggregates with radial fan → D 28 – 30
 Cooling aggreg. in segment mount. → D 5 – 7

Hole pattern → A 21
 Silicone wafers → E 2 – 4
 Thermal. conductive silicone foam foil → E 6
 Mounting pads → E 39

Cooling aggregates with axial fan

Hollow-fin cooling aggregates

- extremely low losses due to optimised hollow fin geometry
- particularly effective heat dissipation
- compact design with axial fan
- semiconductor mounting surface for milled flat

art. no. LA 14 ...			
art. no. LA 15 ...			
please indicate: ...  100 150 200 250 300 400 mm		... fan type 24 = 24 V DC 230 = 230 V AC	

additional design to customer's instructions

Technical data of the fans

	... 24	... 230
type	ebmpapst, ball bearing	ebmpapst, ball bearing
dimensions	119 x 119 x 38 mm	119 x 119 x 38 mm
voltage	24 V DC	230 V AC
power input	11 W	19 W
max. air flow	237 m ³ /h	160 m ³ /h
temperature range	-30 °C ... +55 °C	-40 °C ... +85 °C
noise level	59 dB(A)	47 dB(A)
rated speed	4,400 min ⁻¹	2,650 min ⁻¹
weight	390 g	550 g
failure rate (L₁₀)	L ₁₀ > 70.000 h (40 °C)	L ₁₀ > 37.500 h (40 °C)

Other fan types and fan voltages on request.

A

Cooling aggregates with axial fan

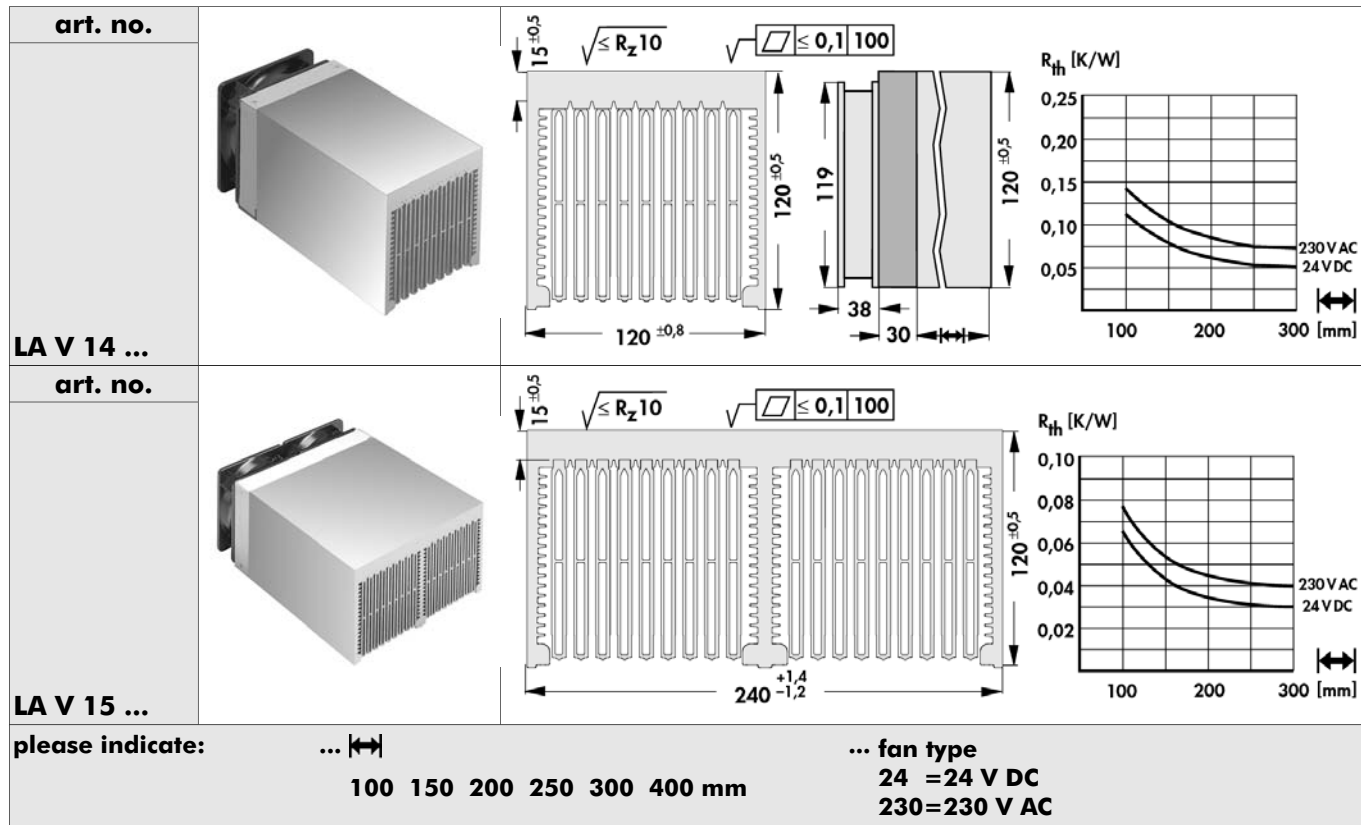
B

Hollow-fin cooling aggregates

- with air flow chamber
- extremely low losses due to optimised hollow fin geometry
- particularly effective heat dissipation
- compact design with axial fan
- semiconductor mounting surface for milled flat

C

D



additional design to customer's instructions on request

H

Technical data of the fans

	... 24	... 230
type	ebmpapst, ball bearing	ebmpapst, ball bearing
dimensions	119 x 119 x 38 mm	119 x 119 x 38 mm
voltage	24 V DC	230 V AC
power input	11 W	19 W
max. air flow	237 m ³ /h	160 m ³ /h
temperature range	-30 °C ... +55 °C	-40 °C ... +85 °C
noise level	59 dB(A)	47 dB(A)
rated speed	4,400 min ⁻¹	2,650 min ⁻¹
weight	390 g	550 g
failure rate (L₁₀)	L ₁₀ > 70.000 h (40 °C)	L ₁₀ > 37.500 h (40 °C)

Other fan types and fan voltages on request.

L

M

N

D 19

Protection grid for axial fans → D 31
 High capacity cooling aggregat. → D 23 – 26
 Cooling aggregates with radial fan → D 28 – 30
 Cooling aggreg. in segment mount. → D 5 – 7

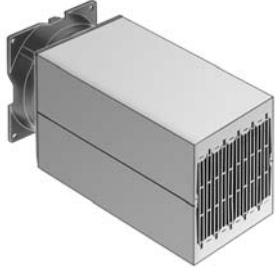
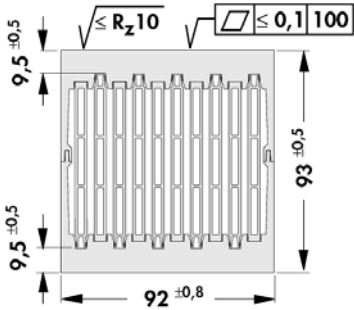
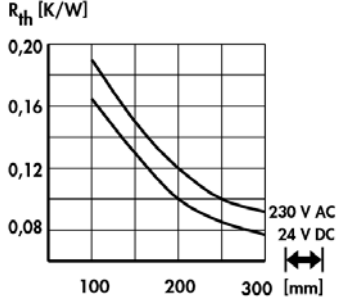

Hole pattern → A 21
 Silicone wafers → E 2 – 4
 Thermal. conductive silicone foam foil → E 6
 Mounting pads → E 39

Cooling aggregates with axial fan

Hollow-fin cooling aggregates

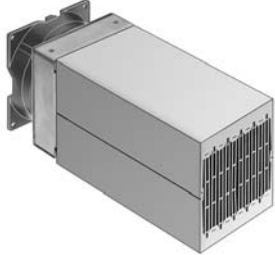
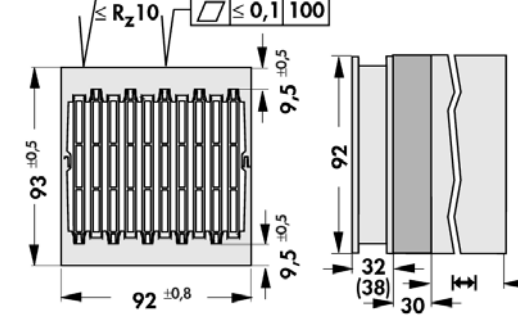
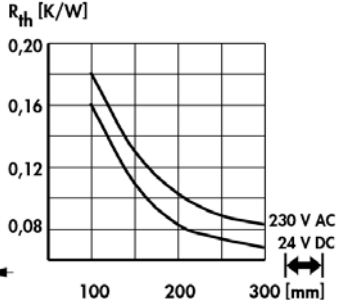

- extremely low losses due to optimised hollow fin geometry
- effective heat dissipation
- compact construction with axial fans
- two opposite mounting surfaces are milled flat

without air flow chamber

art. no.			
LA 21 ...			
please indicate:	... 	... fan type	
	100 150 200 250 300 400 mm	24 = 24 V DC 230 = 230 V AC	

Additional treatment upon customer's request.

with air flow chamber

art. no.			
LA V 21 ...			
please indicate:	... 	... fan type	
	100 150 200 250 300 400 mm	24 = 24 V DC 230 = 230 V AC	

Additional treatment upon customer's request.

Technical data of the fans

	... 24	... 230
type	ebmpapst, ball bearing	ebmpapst, ball bearing
dimensions	92 x 92 x 32 mm	92 x 92 x 38 mm
voltage	24 V DC	230 V AC
power input	5.3 W	12 W
max. air flow	107 m ³ /h	75 m ³ /h
temperature range	-20 °C ... +75 °C	-40 °C ... +75 °C
noise level	47 dB(A)	37 dB(A)
rated speed	4,000 min ⁻¹	2,700 min ⁻¹
weight	190 g	420 g
failure rate (L₁₀)	L ₁₀ > 57.500 h (40 °C)	L ₁₀ > 52.500 h (40 °C)

Other fan types and fan voltages on request.

Miniature cooling aggregates
Protection grid for axial fans
Heatsinks for Solid State Relay
High capacity heatsinks

→ D 9 - 11
→ D 31
→ A 12
→ A 56 - 57

Special heatsink design
Hole pattern
Standard aluminium profiles
Technical introduction

→ A 133 - 134
→ A 21
→ A 133 - 134
→ A 2 - 7

D 20

A

B

C

D

E

F

G

H

I

K

L

M

N

A

Cooling aggregates with axial fan

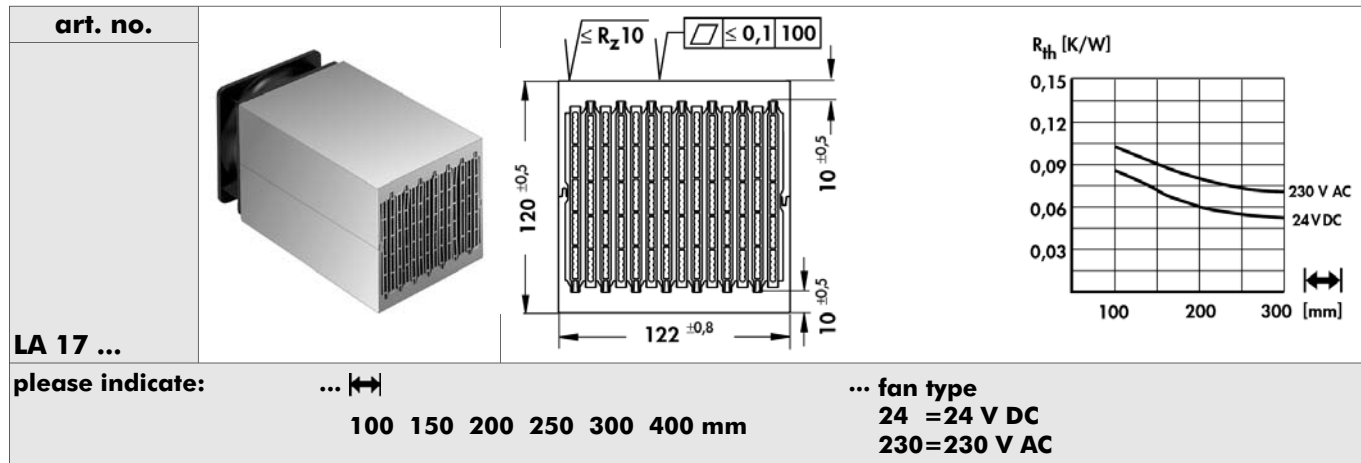
B

Hollow-fin cooling aggregates

- extremely low losses due to optimised hollow fin geometry
- effective heat dissipation
- compact construction with axial fans
- two opposite mounting surfaces are milled flat

C

without air flow chamber



D

E

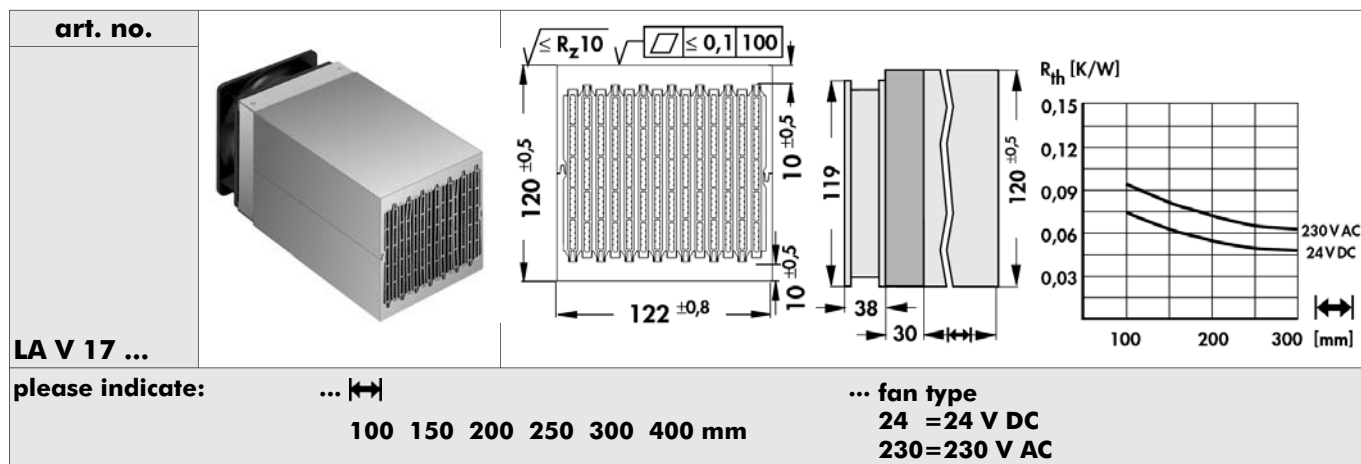
additional treatment upon customer's request

F

with air flow chamber

G

H



I

additional treatment upon customer's request

K

Technical data of the fans

	... 24	... 230
type	ebmpapst, ball bearing	ebmpapst, ball bearing
dimensions	119 x 119 x 38 mm	119 x 119 x 38 mm
voltage	24 V DC	230 V AC
power input	11 W	19 W
max. air flow	237 m ³ /h	160 m ³ /h
temperature range	-30 °C ... +55 °C	-40 °C ... +85 °C
noise level	59 dB(A)	47 dB(A)
rated speed	4,400 min ⁻¹	2,650 min ⁻¹
weight	390 g	550 g
failure rate (L₁₀)	L ₁₀ > 70.000 h (40 °C)	L ₁₀ > 37.500 h (40 °C)

M

Other fan types and fan voltages on request.

N

D 21


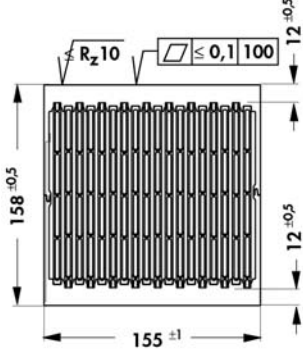
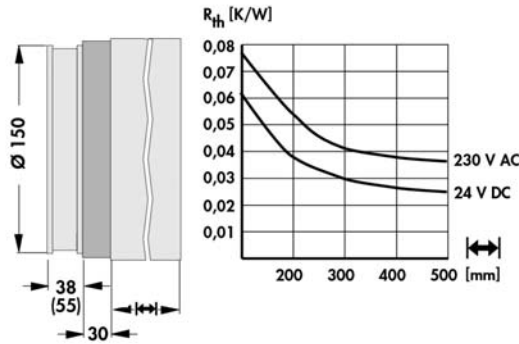
Protection grid for axial fans → D 31
 High capacity cooling aggregat. → D 23 – 26
 Cooling aggregates with radial fan → D 28 – 30
 Cooling aggreg. in segment mount. → D 5 – 7

Hole pattern → A 21
 Silicone wafers → E 2 – 4
 Thermal. conductive silicone foam foil → E 6
 Mounting pads → E 39

Cooling aggregates with axial fan

Hollow-fin cooling aggregates

- with air flow chamber
- extremely low losses due optimised hollow fin geometry
- especially effective heat dissipation
- compact construction with axial fans
- two opposite mounting surfaces are milled flat

art. no.			
LA V 24 ...			
please indicate:	... [↔] 200 300 400 mm		... fan type 24 =24 V DC 230=230 V AC

additional treatment upon customer's request

Technical data of the fans

	... 24	... 230
type	ebmpapst, ball bearing, with grid	ebmpapst, ball bearing, with grid
dimensions	∅ 150 x 38 mm	∅ 150 x 55 mm
voltage	24 V DC	230 V AC
power input	19 W	47 W
max. air flow	420 m ³ /h	390 m ³ /h
temperature range	-25 °C ... +72 °C	-30 °C ... +60 °C
noise level	59 dB(A)	58 dB(A)
rated speed	3,350 min ⁻¹	2,700 min ⁻¹
weight	620 g	1,100 g
failure rate (L₁₀)	L ₁₀ > 75.000 h (40 °C)	L ₁₀ > 40.000 h (40 °C)

Other fan types and fan voltages on request.

Miniature cooling aggregates
Protection grid for axial fans
Heatsinks for Solid State Relay
High capacity heatsinks

→ D 9 - 11
→ D 31
→ A 12
→ A 56 - 57

Special heatsink design
Hole pattern
Standard aluminium profiles
Technical introduction

→ A 133 - 134
→ A 21
→ A 133 - 134
→ A 2 - 7

D 22

A

B

C

D

E

F

G

H

I

K

L

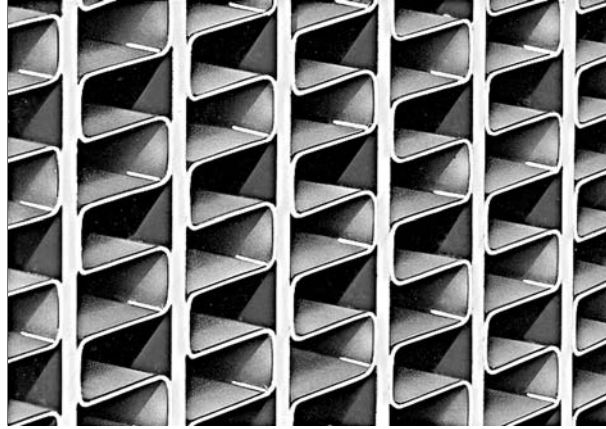
M

N

Cooling aggregates with axial fan

High performance cooling aggregate

- extremely low losses of air flow as compared to cooling aggregates with extruded aluminium
- compact dimensions, that means high performance density due to large heat-conducting surfaces
- maximum heat flow due to brazing or thermal adhesion
- high performance cooling aggregates are only effective with forced ventilation by means of the fan, but not with free convection



material: solder-plated aluminium sheet, thus minimal weight due to the thickness of the material

An optimised unit for any application can be produced from the wide range of existing components upon request. The specific capacity will be determined by a test run upon customer's request.

Technical data of the fan

	... 230
type	ebmpapst, ball bearing
dimensions	119 x 119 x 38 mm
voltage	230 V AC
power input	19 W
max. air flow	160 m ³ /h
temperature range	-40 °C ... +85 °C
noise level	47 dB(A)
rated speed	2,650 min ⁻¹
weight	550 g
failure rate (L₁₀)	L ₁₀ > 37.500 h (40 °C)

Other fan types and fan voltages on request.

D 23

Cooling aggregates with radial fan → D 28 – 30
 Heatsinks with hollow fin profile → D 27
 Hollow-fin cooling aggregates → D 14 – 22
 Extruded heatsink-cooling aggregat. → D 13

Protection grid for axial fans → D 31
 Cooling aggreg. in segment mount. → D 5 – 7
 Miniature cooling aggregates → D 9 – 11
 Thermal conductive material → E 2 – 15