

R4D450-AK01-07

# AC centrifugal fan

backward curved



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### Nominal data

Type	R4D450-AK01-07						
Motor	M4D110-GF						
Phase		3~	3~	3~	3~	3~	3~
Nominal voltage	VAC	230	230	277	400	400	480
Connection		Δ	Δ	Δ	Y	Y	Y
Frequency	Hz	50	60	60	50	60	60
Type of data definition		ml	ml	ml	ml	ml	ml
Valid for approval / standard		CE	CE	CE	CE	CE	CE
Speed	min <sup>-1</sup>	1350	1490	1580	1350	1490	1580
Power input	W	740	1090	1200	740	1090	1200
Current draw	A	2.6	3.32	3.2	1.5	1.92	1.85
Min. back pressure	Pa	0	0	0	0	0	0
Min. ambient temperature	°C	-40		-40	-40		-40
Max. ambient temperature	°C	80	50	50	80	50	50
Starting current	A				10	9.6	

ml = Max. load · me = Max. efficiency · fa = Running at free air · cs = Customer specs · cu = Customer unit  
Subject to alterations

### Data according to ErP directive

Installation category	A
Efficiency category	Static
Variable speed drive	No
Specific ratio*	1.00

\* Specific ratio =  $1 + p_s / 100\,000\text{ Pa}$

		Actual	Request 2013	Request 2015
Overall efficiency $\eta_{es}$	%	50	46	50
Efficiency grade N		62	58	62
Power input $P_e$	kW	0.72		
Air flow $q_v$	m <sup>3</sup> /h	3515		
Pressure increase $p_{fs}$	Pa	370		
Speed n	min <sup>-1</sup>	1350		

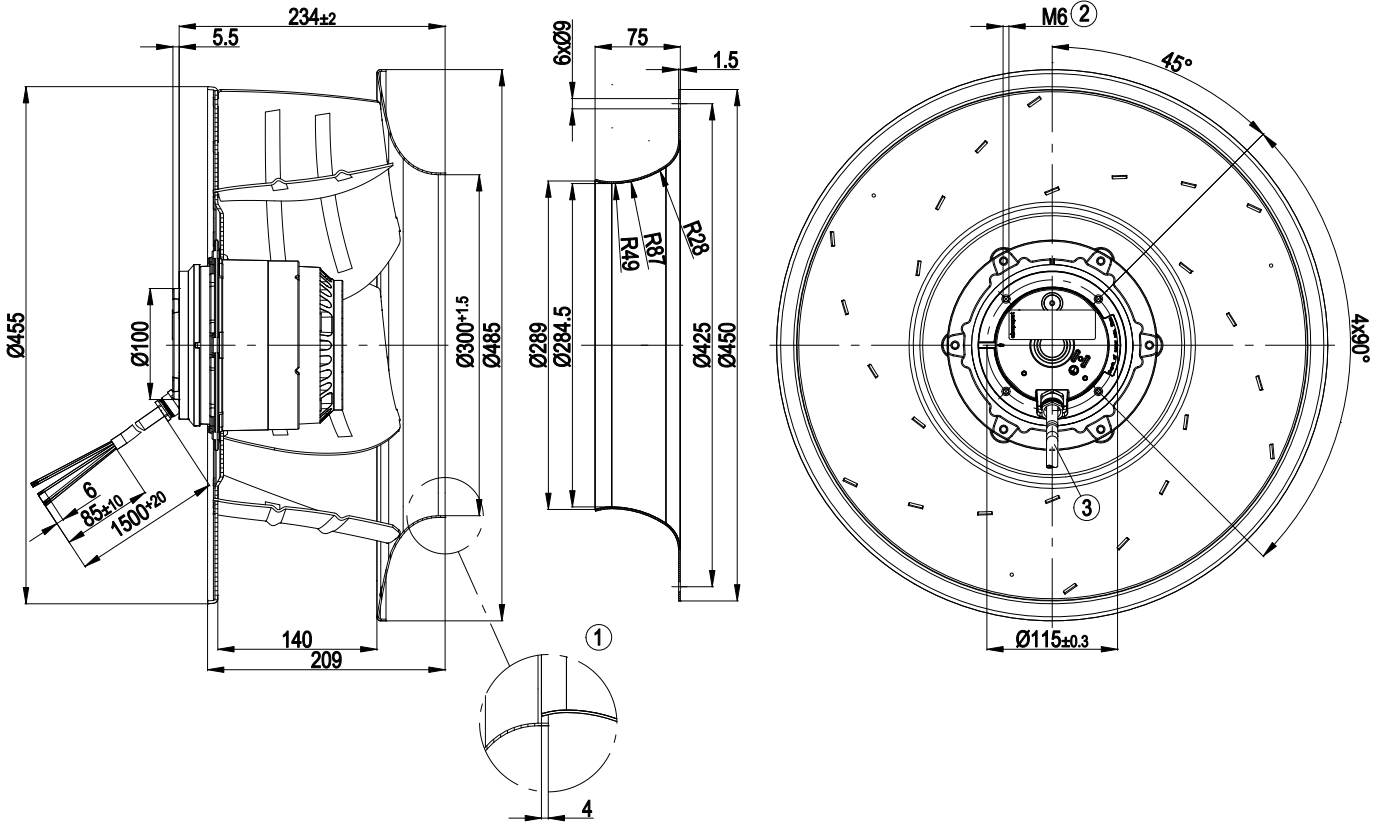
Data definition with optimum efficiency. LU-101530  
The ErP data is determined using a motor-impeller combination in a standardised measurement configuration.



### Technical features

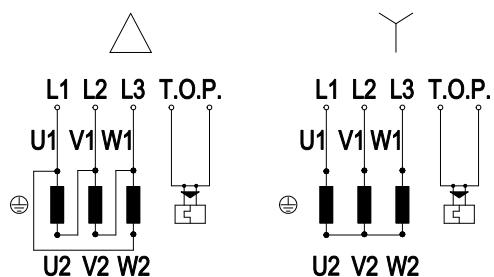
<b>Mass</b>	11.64 kg
<b>Size</b>	450 mm
<b>Surface of rotor</b>	Coated in black
<b>Material of impeller</b>	Aluminium sheet, coated in black
<b>Number of blades</b>	6
<b>Direction of rotation</b>	Clockwise, seen on rotor
<b>Type of protection</b>	IP 54
<b>Insulation class</b>	"F"
<b>Humidity class</b>	F5
<b>Max. permissible ambient motor temp. (transp./ storage)</b>	+ 80 °C
<b>Min. permissible ambient motor temp. (transp./storage)</b>	- 40 °C
<b>Mounting position</b>	Shaft horizontal or rotor on top; rotor on bottom on request
<b>Condensate discharge holes</b>	On the stator side
<b>Operation mode</b>	S1
<b>Motor bearing</b>	Ball bearing
<b>Touch current acc. IEC 60990 (measuring network Fig. 4, TN system)</b>	<= 3.5 mA
<b>Electrical leads</b>	With 1500 mm connecting cable
<b>Motor protection</b>	Thermal overload protector (TOP) brought out
<b>Cable exit</b>	Variable
<b>Protection class</b>	I (if protective earth is connected by customer)
<b>Product conforming to standard</b>	EN 61800-5-1; CE
<b>Approval</b>	UL 1004-1; VDE; EAC; CSA C22.2 Nr.100

Product drawing



1	Accessory part: inlet nozzle 63045-2-4013 not included in the standard scope of delivery; other inlet nozzles on request
2	Depth of screw max. 12 mm
3	Connection line silicone 9 x 0.75 mm <sup>2</sup> , 9 x brass lead tips crimped

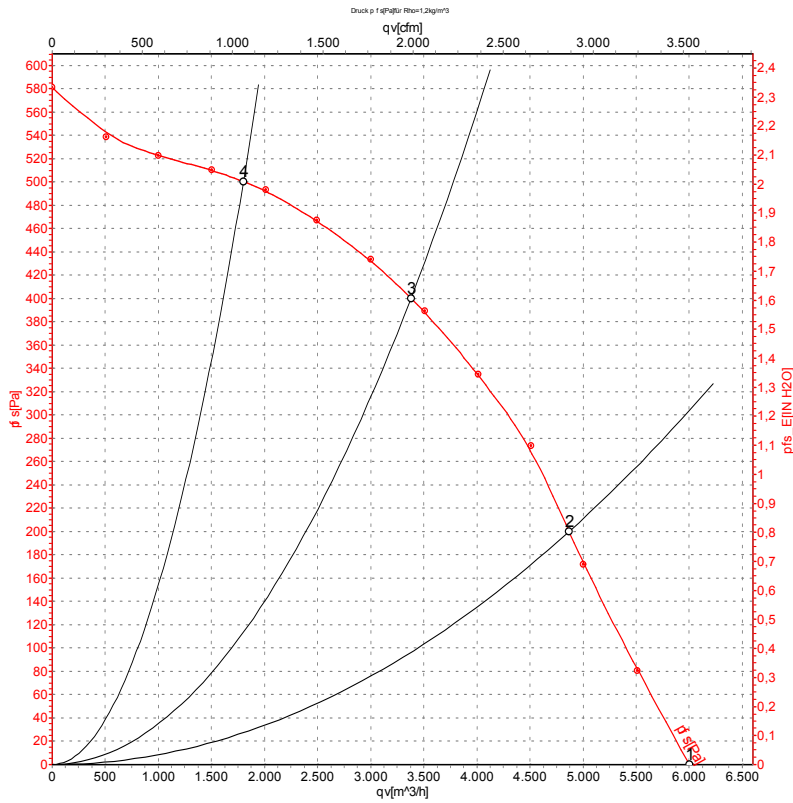
## Connection screen



Note: Direction of rotation changes when two phases are reversed

$\Delta$	Delta-connection	Y	Star connection	L1	black
L2	blue	L3	brown	U1	black
V1	blue	W1	brown	U2	green
V2	white	W2	yellow	TOP	grey

## Charts: Air flow 50 Hz



Air performance measured as per ISO 5801 Installation category A. For detailed information on the measuring set-up, please contact ebm-papst. Suction-side noise levels: LwA measured as per ISO 13347 / LpA measured with 1m distance to fan axis. The values given are valid under the measuring conditions mentioned above and may vary according to the actual installation situation. With any deviation from the standard set-up, the specific values have to be checked and reviewed with the unit installed.

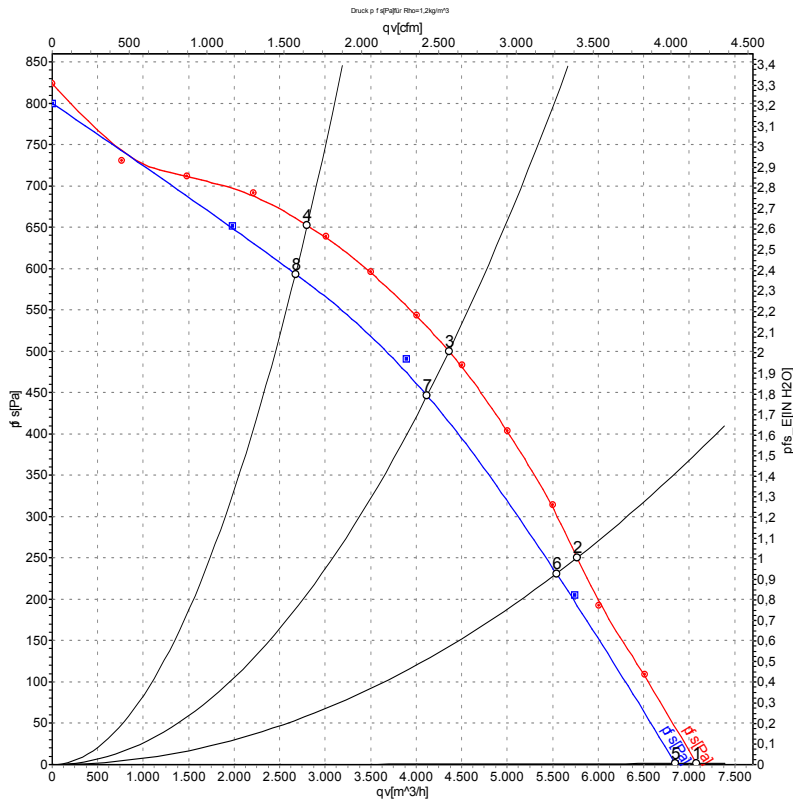
## Measured values

	Conn.	U	f	n	P <sub>e</sub>	I	LpA <sub>in</sub>	LwA <sub>in</sub>	qv	p <sub>fs</sub>
		V	Hz	min <sup>-1</sup>	W	A	dB(A)	dB(A)	m <sup>3</sup> /h	Pa
1	Y	400	50	1395	566	1.26	71	79	6000	0
2	Y	400	50	1365	670	1.37	66	75	4870	200
3	Y	400	50	1350	740	1.50	63	70	3380	400
4	Y	400	50	1375	617	1.31	68	76	1800	500

Conn. = Connection · U = Supply voltage · f = Frequency · n = Speed · P<sub>e</sub> = Power input · I = Current draw · LpA<sub>in</sub> = Sound pressure level inlet side · LwA<sub>in</sub> = Sound power level inlet side  
 qv = Air flow · p<sub>fs</sub> = Pressure increase



## Charts: Air flow 60 Hz



Air performance measured as per ISO 5801 Installation category A. For detailed information on the measuring set-up, please contact ebm-papst. Suction-side noise levels: LwA measured as per ISO 13347 / LpA measured with 1m distance to fan axis. The values given are valid under the measuring conditions mentioned above and may vary according to the actual installation situation. With any deviation from the standard set-up, the specific values have to be checked and reviewed with the unit installed.

## Measured values

	Conn.	U	f	n	P <sub>e</sub>	I	LpA <sub>in</sub>	LwA <sub>in</sub>	qv	p <sub>fs</sub>
		V	Hz	min <sup>-1</sup>	W	A	dB(A)	dB(A)	m <sup>3</sup> /h	Pa
1	Y	480	60	1640	918	1.49	75	83	7080	0
2	Y	480	60	1605	1084	1.67	71	79	5770	250
3	Y	480	60	1580	1200	1.85	67	75	4360	500
4	Y	480	60	1600	1100	1.68	70	78	2800	650
5	Y	400	60	1575	845	1.50	74	82	6845	0
6	Y	400	60	1530	973	1.71	69	77	5540	235
7	Y	400	60	1490	1090	1.92	65	74	4120	456
8	Y	400	60	1530	970	1.67	69	77	2675	594

Conn. = Connection · U = Supply voltage · f = Frequency · n = Speed · P<sub>e</sub> = Power input · I = Current draw · LpA<sub>in</sub> = Sound pressure level inlet side · LwA<sub>in</sub> = Sound power level inlet side  
 qv = Air flow · p<sub>fs</sub> = Pressure increase

