



Preheat Casting Molds with Hot Air Power

FOCUS | When Every Degree Counts: Leister Hot Air in the Casting Process



Hot Air Technology | Foundry Industry



Hot Air Technology from Leister for the Foundry Industry

Efficiency and Quality in Metal Casting, Supported by Hot Air

From prototyping to final inspection, metal casting follows clear steps. Preheating molds and channels is crucial: Leister's hot air technology allows hot air temperatures of up to 900 °C (1652 °F) to be reliably achieved. This improves surface quality, reduces CO₂ emissions, and supports sustainable production.

We know how.

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Steps in the Metal Casting Process

Regardless of the technology used or the casting material, every metal casting follows a structured sequence of steps.

Creation of Samples

First, a model is produced that specifies the final shape of the component.

Preparation of the Mold

Depending on the process, the mold can be made of different materials, ranging from sand to ceramics to high-strength tool steel.

Melting and Casting Metal

The metal is heated to its melting temperature and then, depending on the method, fed by gravity or pressure through casting channels into the mold cavity.

Solidification and Cooling

The metal cools down in the mold and solidifies. The cooling rate influences the material structure and its properties.

Demolding and Inspection

The finished component is demolded, cleaned – i.e., separated from the sprue and deburred. This is followed by quality control involving dimensional and visual inspections as well as non-destructive testing using ultrasound or X-rays.

In the melting and casting process step, preheating of components is required. In particular, sprues, runners, and molds must be preheated to prevent the melt from cooling too quickly on the surface. Preheating is also necessary for melt filters. This is the only way to prevent skin formation and improve the surface quality of the casting. This preheating is done using a gas flame or hot air. Electrically generated hot air with air temperatures ranging from 650 °C to 900 °C (1202 °F to 1652 °F) is particularly suitable for aluminum casting. Channel and mold surfaces can be heated to 400 °C to 600 °C (752 °F to 1112 °F) without any problems and in a reliable manner, depending on the application.

Electric heating allows the mold materials to dry better than with gas flames, as it does not produce any water-containing exhaust gases. To improve their carbon footprint, many manufacturers are striving to use electric preheating, which can be carbon neutral when electricity from renewable sources is used.

Set up a consultation
with experts



Why Electric?

What is driving the shift away from fossil fuel heating with oil or gas to electric heating? In addition to the carbon footprint, aspects such as safety, ease of integration into existing systems, and, above all, energy efficiency play an important role.

Safety

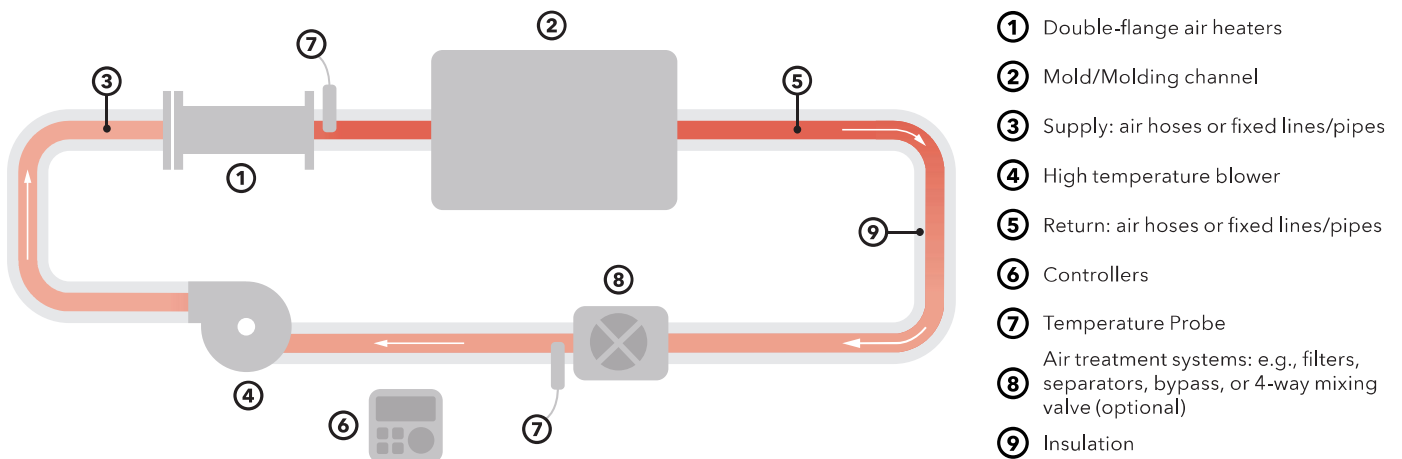
Open flames and flammable gases always pose a certain risk. Harmful exhaust gases may be produced, which must be handled in accordance with safety regulations and be removed. Gas pipes must be checked regularly for leaks.

Easy Integration

Electrically powered hot air systems, i.e., compact hot air blowers or combinations consisting of air heaters and blowers, can be easily integrated into existing systems. They are available in a wide range of performance levels and are scalable. Leister offers suitable devices for such applications. The control system can be set up independently or integrated into existing higher-level control systems.

Efficiency

Electric heating is often already more energy-efficient than heating with fossil fuels, as it generates less waste heat. This effect can be significantly enhanced when hot air recirculation is used. Savings of more than 50 % in energy costs compared to conventional heating are not uncommon. Since the air is not contaminated when heating the casting channels and molds, the exhaust air can be reused directly. The use of complex heat exchangers is generally not necessary. Leister offers the right equipment for processes with hot air recirculation. For example, LE 10000 DF-R air heaters in combination with the RBR blower are suitable for hot air recycling.



Schematic representation of a setup with hot air recirculation





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LE 10000 DF



The LE 10000 DF is available in 5.5, 8, 11, 16 or 17 kW. It achieves a maximum air outlet temperature of 650 °C / 1202 °F and can be operated at an inlet temperature of up to 150 °C / 302 °F. It is suitable for integration into air duct systems.

Technical data

Phases	3x	
Voltage	400-480 V	
Current	8-25 A	
Frequency	50/60 Hz	
Power	5500-17000 W	
Max. air outlet temperature	650 °C	1202 °F
Max. air inlet temperature	150 °C	302 °F
Max. ambient temperature	100 °C	212 °F
Min. airflow	420-1300 l/min	14.83-45.9 cfm
Max. inlet pressure	100 kPa	14.5 psi
Overheating protection	No	
Display	No	
Length	167 mm	6.57 in
Width	146 mm	5.74 in
Height	146 mm	5.74 in
Weight	3.4-4.5 kg	7.49-9.92 lb
Power cable length	5 m	16.4 ft
Approvals	CE; EAC; UKCA; cURus	
Protection class	I	

Product items

LE 10000 DF, 3 x 400V/11kW	114.555
LE 10000 DF, 3 x 400V/5.5kW	115.571
LE 10000 DF, 3 x 400V/17kW	116.135
LE 10000 DF, 3 x 480V/8kW	117.276
LE 10000 DF, 3 x 480V/16kW	117.759
LE 10000 DF, 3 x 400V/17kW, sealed	130.865



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LE 10000 DF HT



The LE 10000 DF HT is available in 15 or 22 kW. It achieves a maximum air outlet temperature of 900 °C / 1652 °F and can be operated at an inlet temperature of up to 150 °C / 302 °F. It is suitable for integration into air duct systems.

Technical data

Phases	3x	
Voltage	400-480 V	
Current	18-32 A	
Frequency	50/60 Hz	
Power	15000-22000 W	
Max. air outlet temperature	900 °C	1652 °F
Max. air inlet temperature	150 °C	302 °F
Max. ambient temperature	100 °C	212 °F
Min. airflow	800-1200 l/min	28.25-42.37 cfm
Max. inlet pressure	100 kPa	14.5 psi
Overheating protection	No	
Display	No	
Length	261-283 mm	10.27-11.14 in
Width	146 mm	5.74 in
Height	146 mm	5.74 in
Weight	4-6.1 kg	8.81-13.44 lb
Power cable length	5-6 m	16.4-19.68 ft
Approvals	CE; EAC; UKCA; cURus	
Protection class	I	

Product items

LE 10000 DF HT, 3 x 400V/15kW	116.056
LE 10000 DF HT, 3 x 480V/15kW	117.313
LE 10000 DF HT, 3 x 400V/22kW	167.217



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LE 10000 DF-R



The LE 10000 DF-R is available in 5.5, 8, 11, 16 or 17 kW. It achieves a maximum air outlet temperature of 650 °C / 1202 °F and is also capable of hot air recycling. This enables considerable cost and energy savings to be achieved.

Technical data

Phases	3x	
Voltage	400-480 V	
Current	8-25 A	
Frequency	50/60 Hz	
Power	5500-17000 W	
Max. air outlet temperature	650 °C	1202 °F
Max. air inlet temperature	350 °C	662 °F
Max. ambient temperature	200 °C	392 °F
Min. airflow	420-1300 l/min	14.83-45.9 cfm
Max. inlet pressure	100 kPa	14.5 psi
Overheating protection	No	
Display	No	
Length	167 mm	6.57 in
Width	146 mm	5.74 in
Height	146 mm	5.74 in
Weight	2.7-3.5 kg	5.95-7.71 lb
Power cable length	1 m	3.28 ft
Approvals	CE	
Protection class	I	

Product items

LE 10000 DF-R, 3 x 400V/11kW	146.479
LE 10000 DF-R, 3 x 400V/5.5kW	146.796
LE 10000 DF-R, 3 x 400V/17kW	146.797
LE 10000 DF-R, 3 x 480V/8kW	146.942
LE 10000 DF-R, 3 x 480V/16kW	146.946



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LE 10000 DF-R HT



The LE 10000 DF-R HT is available in 15 kW. It achieves a maximum air outlet temperature of 900 °C / 1652 °F and is also capable of hot air recycling. This enables considerable cost and energy savings to be achieved.

Technical data

Phases	3x	
Voltage	400 V	
Current	22 A	
Frequency	50/60 Hz	
Power	15000 W	
Max. air outlet temperature	900 °C	1652 °F
Max. air inlet temperature	350 °C	662 °F
Max. ambient temperature	200 °C	392 °F
Min. airflow	800 l/min	28.25 cfm
Max. inlet pressure	100 kPa	14.5 psi
Overheating protection	No	
Display	No	
Length	261 mm	10.27 in
Width	146 mm	5.74 in
Height	146 mm	5.74 in
Weight	3.3 kg	7.27 lb
Power cable length	1 m	3.28 ft
Approvals	CE	
Protection class	I	

Product items

LE 10000 DF-R HT, 3 x 400V/15kW	146.850
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Machine specific accessories



152.373
Inlet flange, ø 90 mm

LE 10000 DF, LE 10000 DF HT, LE 10000 DF-R, LE 10000 DF-R HT



152.374
Outlet flange, ø 92 mm

LE 10000 DF, LE 10000 DF HT, LE 10000 DF-R, LE 10000 DF-R HT



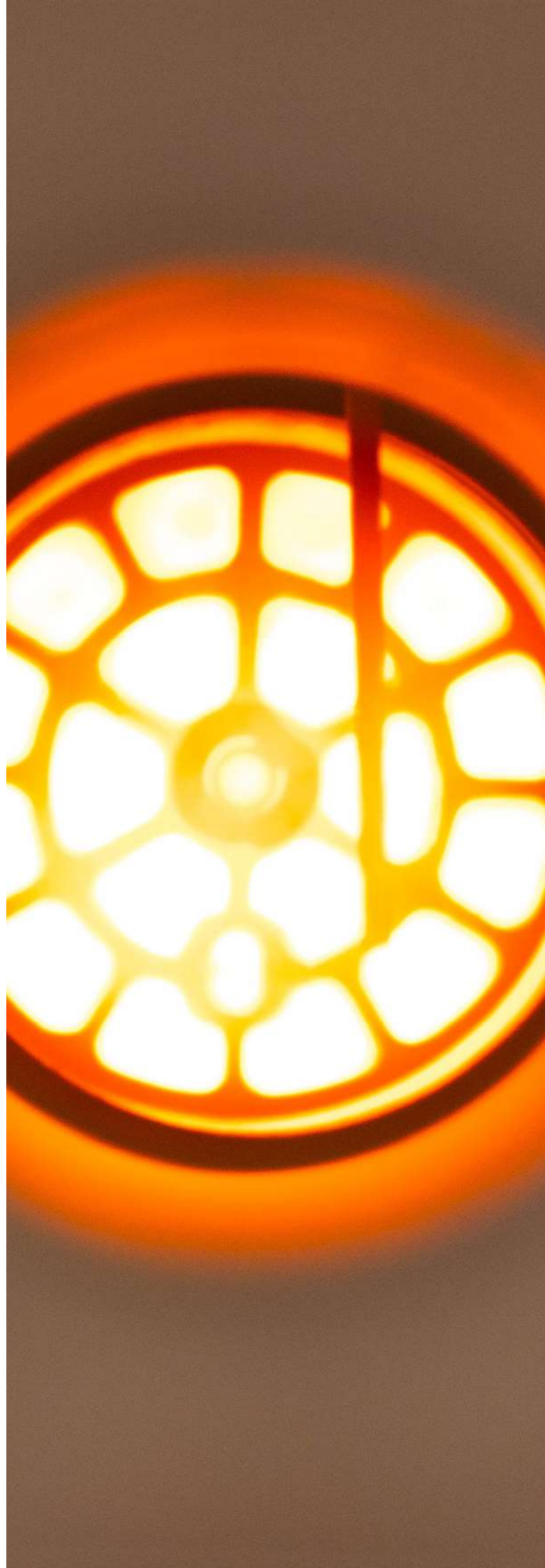
152.442
Gasket HT LE 10000 DF, inlet

LE 10000 DF, LE 10000 DF HT, LE 10000 DF-R, LE 10000 DF-R HT



152.444
Gasket HT LE 10000 DF, outlet

LE 10000 DF, LE 10000 DF HT, LE 10000 DF-R, LE 10000 DF-R HT



LHS 61L SYSTEM



The LHS 61L SYSTEM is available in 5, 8, 10, 11 or 16 kW. It has a display to show the set/actual values, a remote control interface and protection against heating element and device overheating with alarm output.

Technical data

Phases	3x	
Voltage	230-480 V	
Current	7-25 A	
Frequency	50/60 Hz	
Power	5000-16000 W	
Max. air outlet temperature	650 °C	1202 °F
Max. air inlet temperature	65 °C	149 °F
Max. ambient temperature	65 °C	149 °F
Air temperature control	Closed loop	
Min. airflow	390-1250 l/min	13.77-44.14 cfm
Max. inlet pressure	100 kPa	14.5 psi
Overheating protection	Yes	
Alarm output	Normally open contact	
Display	Yes	
Interfaces	0-10V; 4-20mA	
Nozzle connection ø	92 mm / 3.6 in	
Length	363 mm	14.29 in
Width	116 mm	4.56 in
Height	136 mm	5.35 in
Weight	3.65 kg	8.04 lb
Power cable length	0 m	0 ft
Approvals	CE; S+	
Protection class	I	

Product items

LHS 61L SYSTEM, 3 x 400V/11kW	142.568
LHS 61L SYSTEM, 3 x 400V/16kW	143.478
LHS 61L SYSTEM, 3 x 480V/16kW	143.479
LHS 61L SYSTEM, 3 x 230V/8kW	143.732
LHS 61L SYSTEM, 3 x 230V/10kW	143.733
LHS 61L SYSTEM, 3 x 400V/5kW	143.734
LHS 61L SYSTEM, 3 x 400V/8kW	143.735
LHS 61L SYSTEM, 3 x 480V/8kW	143.736
LHS 61L SYSTEM, 3 x 480V/11kW	143.737



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AIRPACK



The AIRPACK blower is ideal for use in industrial assembly lines if large air quantities and high pressure are required. It is optimally suited to drying and blow-off processes.

Technical data

Blower type	Side channel blower	
Phases	3x	
Voltage at 50 Hz	230/400 V	
Frequency	50/60 Hz	
Airflow (20 °C) at 50 Hz	3700 l/min	130.66 cfm
Airflow (20 °C) at 60 Hz	4400 l/min	155.38 cfm
Static pressure at 50 Hz	30000 Pa	4.35 psi
Static pressure at 60 Hz	30000 Pa	4.35 psi
Blower power at 50 Hz	2200 W	
Max. air inlet temperature	40 °C	104 °F
Max. ambient temperature	40 °C	104 °F
Noise emission level	73 dB (A)	
Air inlet (outer diameter)	60 mm	2.36 in
Air outlet (outer diameter)	60 mm	2.36 in
Length	374 mm	14.72 in
Width	327 mm	12.87 in
Height	364 mm	14.33 in
Weight	26 kg	57.32 lb
Approvals	CE; EAC	
Protection class (IEC 60529)	IP54	
Protection class	I	

Product items

AIRPACK, 3 x 230/400V 50Hz, 3 x 275/480V 60Hz 119.358

ASO



The ASO blower delivers up to 13800 l/min or 487.33 cfm of air at 60 Hz. With the appropriate accessories, the air volume giant supplies several air heaters and is therefore ideal for use in production lines, e.g. in drying processes.

Technical data

Blower type	Radial blower	
Phases	1x; 3x	
Voltage at 50 Hz	230 V; 230/400 V	
Frequency	50 Hz; 50/60 Hz	
Airflow (20 °C) at 50 Hz	12000 l/min	423.77 cfm
Airflow (20 °C) at 60 Hz	13800 l/min	487.33 cfm
Static pressure at 50 Hz	1450 Pa	0.21 psi
Static pressure at 60 Hz	2070 Pa	0.3 psi
Blower power at 50 Hz	550 W	
Max. air inlet temperature	200 °C	392 °F
Max. ambient temperature	60 °C	140 °F
Noise emission level	70 dB (A)	
Air inlet (outer diameter)	134 mm	5.27 in
Air outlet (outer diameter)	90 mm	3.54 in
Length	366 mm	14.4 in
Width	361 mm	14.21 in
Height	366 mm	14.4 in
Weight	15 kg	33.06 lb
Approvals	CE; EAC; UKCA	
Protection class (IEC 60529)	IP54	
Protection class	I	

Product items

ASO, 3 x 230/400V 50Hz, 3 x 265/460V 60Hz 103.527
 ASO, 1 x 230V/550W 50Hz, EU plug 103.530

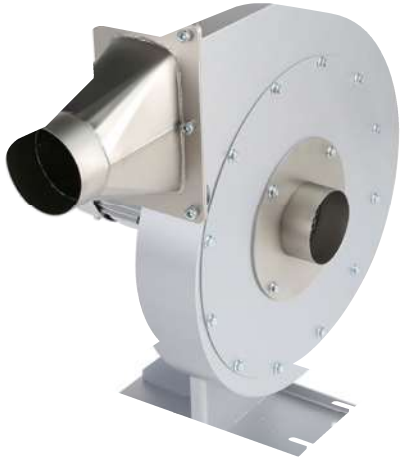


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RBR



The RBR (Radial Blower Recirculation) fan is designed for air inlet temperatures of up to 350 °C / 662 °F. Installed in hot air systems, it recycles hot air, which saves energy and costs.

Technical data

Blower type	Radial blower	
Phases	3x	
Voltage at 50 Hz	230/400 V	
Frequency	50/60 Hz	
Airflow (20 °C) at 50 Hz	10550 l/min	372.56 cfm
Airflow (20 °C) at 60 Hz	12300 l/min	434.36 cfm
Static pressure at 50 Hz	1630 Pa	0.23 psi
Static pressure at 60 Hz	2350 Pa	0.34 psi
Blower power at 50 Hz	550 W	
Max. air inlet temperature	350 °C	662 °F
Max. ambient temperature	60 °C	140 °F
Noise emission level	61 dB (A)	
Air inlet (outer diameter)	90 mm	3.54 in
Air outlet (outer diameter)	90 mm	3.54 in
Length	615 mm	24.21 in
Width	375 mm	14.76 in
Height	613 mm	24.13 in
Weight	19 kg	41.88 lb
Approvals	CE	
Protection class (IEC 60529)	IP54	
Protection class	I	

Product items

RBR, 3 x 230/400V 50Hz, 3 x 277/480V 60Hz

156.049

Machine specific accessories



153.474
Frequency converter C200-034, 3x380-480V/2200W
AIRPACK



107.288
Air hose ø 60 mm, PVC
AIRPACK



107.287
Hose clip ø 38/60 mm
AIRPACK



153.358
Frequency converter C200-012, 230V/750W
ASO



107.237
Air hose ø 90 mm, PVC
ASO



107.236
Hose clip ø 90 mm
ASO



155.419
Air hose ø 90 mm, temperature-resistant, insulated, 2 m
RBR



155.420
Air hose ø 90 mm, temperature-resistant, insulated, 5 m
RBR



155.421
Hose clip inside for air hose 155.419/155.420
RBR



155.422
Hose clip outside for air hose 155.419/155.420
RBR



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VULCAN SYSTEM 10/11 kW



The VULCAN SYSTEM 10/11 kW has a heating power of 10/11 kW and integrated protection against heating element and device overheating. And thanks to the standard analog interface, the hot air blower can also be controlled remotely.

Technical data

Phases	3x	
Voltage	230-480 V	
Current	13-25 A	
Frequency	50/60 Hz	
Power	10000-11000 W	
Max. air outlet temperature	650 °C	1202 °F
Max. air inlet temperature	65 °C	149 °F
Max. ambient temperature	65 °C	149 °F
Air temperature control	Closed loop	
Overheating protection	Yes	
Display	Yes	
Interfaces	0-10V; 4-20mA	
Nozzle connection ø	92 mm / 3.6 in	
Length	410 mm	16.14 in
Width	276 mm	10.86 in
Height	231 mm	9.09 in
Noise emission level	65 dB (A)	
Approvals	CE; EAC; S+	
Protection class	I	

Product items

VULCAN SYSTEM, 3 x 400V/11kW	140.463
VULCAN SYSTEM, 3 x 480V/11kW	143.404
VULCAN SYSTEM, 3 x 230V/10kW	143.406



Configure product

HOTWIND PREMIUM



The HOTWIND PREMIUM has a maintenance-free brushless motor, a cool-down mode and integrated protection against heating element and device overheating. The air volume and heat output are infinitely variable.

Technical data

Phases	1x	
Voltage	120-400 V	
Current	10-20 A	
Frequency	50/60 Hz; 60 Hz	
Power	2300-5400 W	
Max. air outlet temperature	650-800 °C	1202-1472 °F
Max. air inlet temperature	60 °C	140 °F
Max. ambient temperature	60 °C	140 °F
Airflow (20°C)	200-900 l/min	7.06-31.78 cfm
Static pressure	800-1000 Pa	0.11-0.14 psi
Overheating protection	Yes	
Display	No	
Nozzle connection ø	62 mm / 2.45 in	
Length	332-357 mm	13.07-14.05 in
Width	106 mm	4.17 in
Height	179 mm	7.04 in
Weight	2.2-2.4 kg	4.85-5.29 lb
Power cable length	3 m	9.84 ft
Noise emission level	< 70 dB(A)	
Approvals	CE; EAC; KC; S+; cURus	
Protection class	II	

Product items

HOTWIND PREMIUM, 120V/2300W, cURus, w/o plug	140.095
HOTWIND PREMIUM, 230V/3680W, cURus, w/o plug	140.098
HOTWIND PREMIUM, 230V/3100W, 800°C, EU plug	142.608
HOTWIND PREMIUM, 230V/3680W, EU plug	142.609
HOTWIND PREMIUM, 230V/2300W, EU plug	142.612
HOTWIND PREMIUM, 230V/2300W, cURus, w/o plug	142.643
HOTWIND PREMIUM, 400V/5400W, cURus, w/o plug	142.644
HOTWIND PREMIUM, 220V/3350W, 60Hz, KC, KR plug	143.299



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Further Accessories

Nozzles



107.244
Round nozzle (ø 92.0) ø 50 mm
LHS 61L SYSTEM, VULCAN SYSTEM 10/11 kW



107.273
Tubular nozzle (ø 92.0) ø 60 mm, 500 mm
LHS 61L SYSTEM, VULCAN SYSTEM 10/11 kW



107.269
Tubular nozzle (ø 92.0) ø 90 mm, 102 x 178 mm
LHS 61L SYSTEM, VULCAN SYSTEM 10/11 kW



110.581
Turbo nozzle (ø 92.0) ø 48 mm, 75 mm
LHS 61L SYSTEM, VULCAN SYSTEM 10/11 kW



107.272
Wide slot nozzle (ø 92.0) 300 x 12 mm
LHS 61L SYSTEM, VULCAN SYSTEM 10/11 kW



106.018
Wide slot nozzle (ø 92.0) 400 x 10 mm
LHS 61L SYSTEM, VULCAN SYSTEM 10/11 kW



106.024
Wide slot nozzle (ø 92.0) 500 x 7 mm
LHS 61L SYSTEM, VULCAN SYSTEM 10/11 kW



107.267
Wide slot nozzle (ø 92.0) 500 x 15 mm
LHS 61L SYSTEM, VULCAN SYSTEM 10/11 kW



106.023
Wide slot nozzle (ø 92.0) 600 x 4 mm
LHS 61L SYSTEM, VULCAN SYSTEM 10/11 kW

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Galileo-Strasse 10
6056 Kaegiswil
Switzerland

+41 41 662 74 74
leister@leister.com
leister.com

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