



Diphusair Electrodes & Resistances FL

Steam humidifier

- Individual configuration
- Easy operation
- Highest quality and energy efficiency
- A series of units for all applications and performance categories
- Environmentally friendly, incorporating reusable components





New flexibility proven quality

Diphusair Electrodes & Resistances FL as a modular system

Flexibility pays dividends

Diphusair Electrodes & Resistances FL represents a new generation of steam humidifiers which consists of a basic model that can be expanded to create an individual humidification solution suitable for all requirements.



Advantages:

- Ease of installation by means of individual pre-configuration ex factory.
- Expansion options for retrofitting.
- You only invest in the functions you really need.

In order to make this flexibility available to our customers quickly, we have developed a modular system.

Custom made for every area of application

The Diphusair Electrodes & Resistances FL basic model is the basis for all other configuration options. Through its individual extension capability, Diphusair Electrodes & Resistances FL is able to adapt to the requirements of differing areas of application:

- Optimization of the indoor climate in industrial, commercial, cultural and leisure facilities.
- Autonomous control and stabilization of air humidity for industry and processes we have developed a modular system.



Shopping centre and department store



Automotive industry



Museums and galleries

Optimum humidification using the best methods

Diphusair Electrodes & Resistances FL is available as an electrode as well as a heater element humidifier – depending on your water quality and the required degree of control accuracy.

Replaceable
stainless steel
large area electrodes
for different
conductivities



Resistor type heater
elements in highly
corrosion-resistant alloy



Always the correct humidification performance

Equip Diphusair Electrodes & Resistances FL with the power you need for optimum humidification. 15 performance classes with steam output from 10 Kg/h to 300 Kg/h selectable in 6 unit sizes. An additional individual performance limitation can easily be programmed at the factory or on site.

Manifold options for a humidification solution that fits perfectly

Every installation is different and so every project places unique requirements on the humidification solution. The diverse options enable Diphusair Electrodes & Resistances FL to be specifically equipped to create the perfect solution. Whether you choose HyCool, (integrated waste water cooling) or the SuperFlush function (cylinder flushing device) depends entirely on your project. If needed, all options can be retrofitted. We are always pleased to provide advice.



Benefit from extensive functions

Powerful, smart and efficient

Excellent ease of operation

All HygroMatik Diphusair Electrodes & Resistances FL units are equipped with a capacitive 3.5" touch display. Operation and programming are selected via a flat and intuitive menu structure analogous to modern smartphone logic. In addition to this, subsequent software updates are quickly and easily possible via USB flash.



- At a glance comprehensible pictographs provide information on the operating condition.
- Simple and fast navigation.
- Information and system messages displayed as plain text.
- Readout of service messages with date and time.
- Integrated real-time clock.

Smart control – powerful and quick response

The improved control and regulation technology of Diphusair Electrodes & Resistances FL units provides extensive possibilities that are simple and easy to operate.



- Multi-unit operation management* caters for optimum allocation and capacity utilization when operating multiple units and safeguards the humidity even when a unit is being serviced.
- Numerous control and reporting functions can be assigned to up to 11 relays depending on the unit.
- Freely programmable, overload-protected digital input.
- Integrated communication protocol: Modbus RTU or BACnet.

* Coming soon

Optimised unit performance for efficient utilization

As with all our products, the Diphusair Electrodes & Resistances FL has been developed for an especially long lifespan. The units feature technologies that not only reduce the amount of maintenance required, but also the wear of components. Diphusair Electrodes & Resistances FL offers the highest degree of efficiency where energy and resources are concerned.



- **Adjustable load shedding** between 25 and 100%, in order to adapt operation temporarily or permanently.
- **Long-term continuous operation:** A robust base material helps our reusable cylinders to achieve a high temperature resistance and dimensional stability.
- **The split cylinder** is easy to open and can be cleaned without using chemicals.
- **Extremely durable:** All Diphusair Electrodes & Resistances FL cabinets are manufactured in corrosion-resistant stainless steel; the powder coating of the housing increases the longevity and provides optimal safety protection.
- **Robust blowdown pump** for removing scale deposits to ensure long operating life cycles and low maintenance requirement.
- **Highest safety standard** for electrode steam generators on the market due to integrated protection switch.
- Heater element humidifier with electronic, **proportional level control** with no wear parts.

Comprehensive service functions



We have equipped the Diphusair Electrodes & Resistances FL with smart service functions and innovative features for operational reliability. These provide a new level of safety, control and transparency.

- Diagnosis mode can be actuated directly via the touch screen without having to start the unit.
- Service messages are easy to select: Service intervals are calculated and issued based on the quantity of steam produced by the unit.
- Smart-controlled status messages avoid damage and expensive service operations.
- Detailed messages enable errors to be identified and rectified faster.



All in the green zone

**Robust and
durable cabinet**

**Reusable
steam cylinders**

**Long and flexible
service intervals**

**High energy and
resource efficiency**



Diphusair Electrodes & Resistances FL electrodes technical data

A higher humidification performance is possible by connecting u nits together.

Type	FLE05	FLE10	FLE15	FLE20	FLE25	FLE30
Steam output [kg/h]	4.8-5.2	9.5-10.4	14.3-15.6	19.0-20.8	23.9-26.1	28.5-31.2
Electrical connection *	380-415V / 3 / 50-60Hz					
Rated power [kW]	3.6-3.9	7.1-7.8	10.7-11.7	14.3-15.6	17.9-19.5	21.4-23.4
Rated current [A] **	5.4	10.8	16.3	21.7	27.2	32.5
Fuse [A] **	3 x 10	3 x 16	3 x 20	3 x 25	3 x 32 (35)	3 x 40
Control voltage	220-240V / 1 / N / 50-60Hz					
Steam hose connection [mm]	1 x 25			1 x 40		1 x 40
Unloaded weight [kg]	16		22		23	26
Operating weight [kg]	21		36		37	47
Unit size WxHxD [mm] ***	540 x 535 x 320		540 x 695 x 320			580 x 750 x 355
Water installation	Tap water of varying qualities					
	1 to 10 bar, for 3/4" external threat					

We reserve the right to make technical changes.

* Other voltages upon request.

** 1.1-fold power consumption after full blowdown.

Observe actuation characteristics of automatic circuit-breakers.

If necessary, select the next higher circuit-breaker level.

*** External width and depth dimensions. Height including drainage nozzles.

Diphusair Electrodes & Resistances FL electrodes technical data



A higher humidification performance is possible by connecting units together.

Type	FLE40	FLE50	FLE65	FLE80	FLE100	FLE130
Steam output [kg/h]	38.2-41.7	47.8-52.2	62.0-67.5	76.4-83.4	95.4-104.2	124.0-135.4
Electrical connection *	380-415V / 3 / 50-60Hz					
Rated power [kW]	28.6-31.3	35.9-39.2	46.3-50.6	2 x 28.6-31.3	2 x 35.9-39.2	2 x 46.3-50.6
Rated current [A] **	43.5	54.5	70.4	2 x 43.5	2 x 54.5	2 x 70.4
Fuse [A] **	3 x 50	3 x 63	3 x 80	6 x 50	6 x 63	6 x 80
Control voltage	220-240V / 1 / N / 50-60Hz					
Steam hose connection [mm]	1 x 40 with Y-piece	2 x 40		2 x 40 with Y-piece	4 x 40	
Unloaded weight [kg]	28	33		50	75	
Operating weight [kg]	49	70		92	147	
Unit size WxHxD [mm] ***	580 x 750 x 355	640 x 785 x 420		1090 x 750 x 355	1170 x 785 x 420	
Water installation	Tap water of varying qualities					
	1 to 10 bar, for 3/4" external thread			1 to 10 bar, for 2x 3/4" external thread		

We reserve the right to make technical changes.

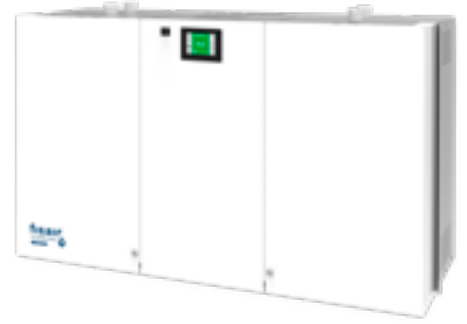
* Other voltages upon request.

** 1.1-fold power consumption after full blowdown.

Observe actuation characteristics of automatic circuit-breakers.

If necessary, select the next higher circuit-breaker level.

*** External width and depth dimensions. Height including drainage nozzles.



Diphusair Electrodes & Resistances FL heaters technical data

A higher humidification performance is possible by connecting units together.

Type	FLH03	FLH06	FLH09	FLH15	FLH25	FLH30	FLH40	FLH50	FLH80	FLH100	
Steam output [kg/h]	2.7-3.3	5.5-6.5	8.2-9.8	13.7-16.4	22.7-27.1	27.4-32.7	36.5-43.5	45.5-54.3	73.0-87.0	91.0-108.6	
Electrical connection *	220-240V / 1 / 50-60Hz	380-415V / 3 / 50-60Hz									
Rated power [kW]	2.1-2.4	4.1-4.9	6.2-7.3	10.3-12.3	17.1-20.3	20.6-24.5	27.3-32.6	34.1-40.7	2 x 27.3-32.6	2 x 34.1-40.7	
Rated current [A] **	9.4-10.2	10.7-11.7	16.0-17.5	15.6-17.1	25.9-28.3	31.3-34.1	41.5-45.4	51.8-56.6	2 x 41.5-45.4	2 x 51.8-56.6	
Fuse [A] **	1 x 16	3 x 16	3 x 20		3 x 32 (35)	3 x 35	3 x 50	3 x 63	6 x 50	6 x 63	
Control voltage	220-240V / 1 / N / 50-60Hz										
Number of cylinder	1		3			6			12		
Steam hose connection [mm]	1 x 25				1 x 40		2 x 40 ****			4 x 40	
Unloaded weight [kg]	19			25	28	36	39		75		
Operating weight [kg]	24			39	42	72	75		150		
Unit size WxHxD [mm] ***	540 x 535 x 320		540 x 695 x 320			640 x 785 x 420			1170 x 785 x 420		
Water installation	Tap water of varying qualities										
	1 to 10 bar, for 3/4" external threat								1 to 10 bar, for 2 x 3/4" external threat		

We reserve the right to make technical changes.

* Other voltages upon request.

** Diphusair Electrodes & Resistances FL electrodes: 1.1-fold power consumption after full blowdown.

Observe actuation characteristics of automatic circuit-breakers.

If necessary, select the next higher circuit-breaker level.

*** External width and depth dimensions. Height including drainage nozzles.

**** FL30 incl. Y-piece for reduction to 1 x DN40.