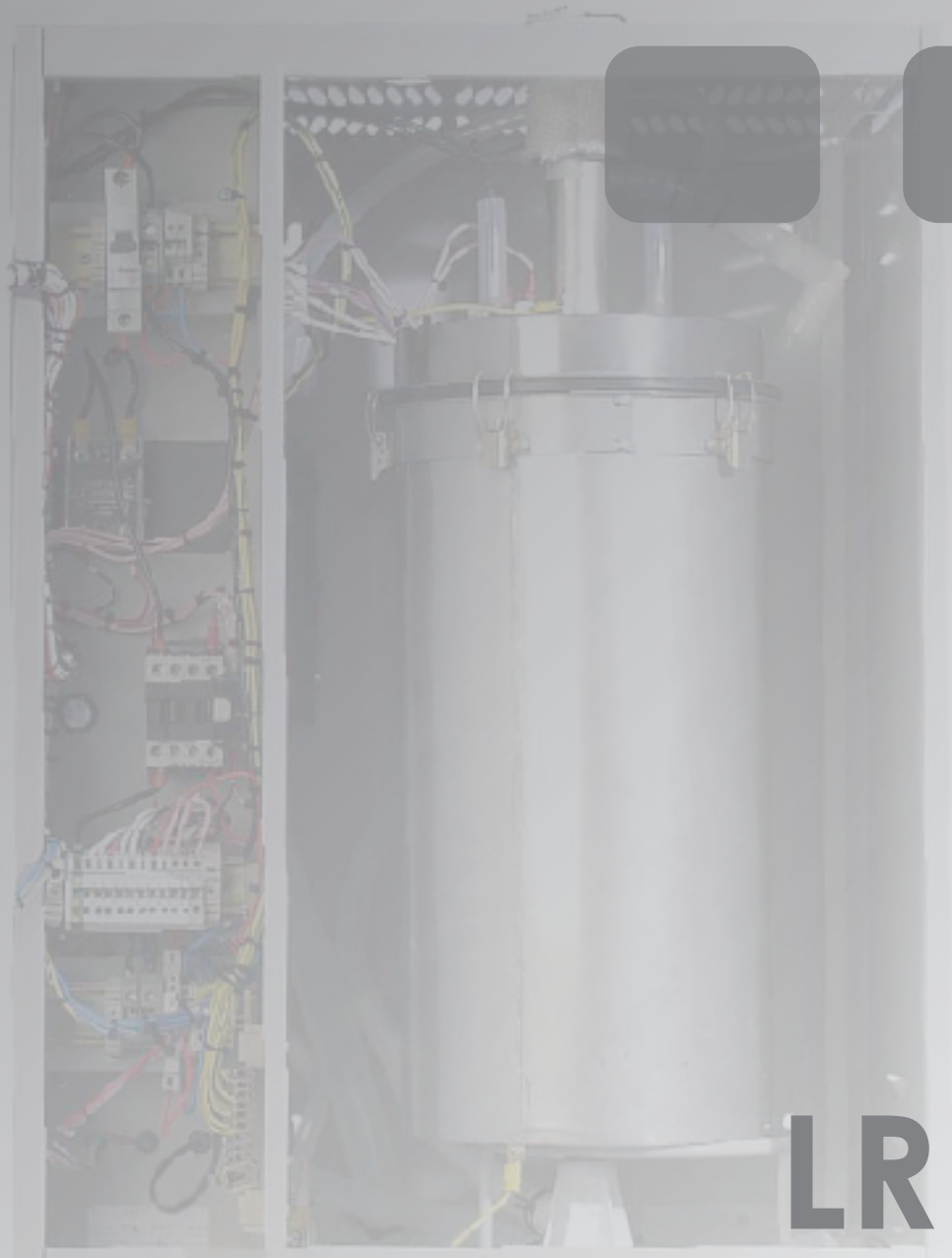
Vapac



LR Series

Resistance Steam Humidifiers

Resistance Steam Humidifiers

The Company

For over 35 years, Vapac has been designing, manufacturing and specializing in high quality solutions for indoor air humidification needs. As a world leader in humidification technologies, reliable, efficient and high-quality humidifiers have been manufactured and shipped to over 45 countries. Vapac offers its expertise in a wide range of long lasting high quality electrode, resistance and gas-fired steam humidifiers. Vapac sets the standard with a new generation of resistance steam humidifiers for various applications. The LR Series has been designed with benefits for the installer, the operators and owners.

The Principle

The method for boiling water with the LR Series humidifier is, in essence, the same employed in the common kettle but the similarity between the two stops here.

LRP Close Control Model - SSR Modulation

This model incorporates the highest technology software and hardware, so that first class performance is ensured regardless of system demands or water quality. The SSR modulation enables a turn down ratio of 0-100% of full capacity and the most precise resistance steam humidity control. The VapaNet controls the mineral concentration of the water and keeps it under close control at all times. VapaNet gives accurate water feed and manages drain cycles to minimize disturbances of steam production. This ensures the steam supply keeps pace with demand, which is critical in process or laboratory environments.

LR Comfort Control Model - On/Off

Ideally suited where there is a need to maintain humidification within given tolerances, but where on/off control capability is acceptable. The output is manually adjusted between 50-100% of maximum output to meet your exact load requirements. The LR model incorporates an intelligent combination of Feeding, Boiling and Draining to minimize wastage of hot water and energy, and longer maintenance interval.

The Advantage

Vapac LR Series is the solution when it comes to operation using low conductivity de-ionized water supply. The robust stainless steel cylinder construction means that you can continue using the same cylinder for thousands of hours of operation. On potable water, it offers you the choice of spending your maintenance budget on labor rather than on disposable cylinders.

LR series

The Benefits

SSR Control Technology

Vapac's LR-P Version is a SSR controlled modulating humidifier offering maximum turndown (8-100%) and the most precise humidity control.

Drain Pump Advantage

As opposed to more commonly used gravity fed solenoid valves, all Vapac humidifiers use a heavy duty drain pump to minimize the risk of blockage due to sediment build up. It also ensures precise control of the water level within the cylinder which is critical to offering long intervals between cleaning requirements and gives the VapaNet controller the ability to adapt to foaming water conditions.

Plastic Inner Liner

The stainless steel tank can be easily removed from cabinet for cleaning via the quick release electrical plug and the quick tank toggle clamps. The cylinder also incorporates a removable plastic inner liner, reducing downtime and making the tank walls and bottom easy to clean and maintain.

Plastic Components

As a standard, the components designed in the LR Series are suitable for operation using de-ionised, reverse osmosis, softened or potable water. This gives you the option of upgrading to treated water at a later date to reduce maintenance without any additional modifications to the unit.

Foam Protection

The VapaNet control system reduces the onset of foaming by introducing corrective pumped drain to maintain steam production with very little interruption. This integrated feature part of all Vapac humidifiers increases the time between each maintenance interval.

Internal Drain Water Tempering

The internal drain water tempering capabilities of the LR Series eliminates the need for expensive external drain water tempering devices. When drains are performed during normal operation, the VapaNet controller ensures the drain water temperature is below 140 °F (60 °C) to meet local codes.

Corrosion Resistant Hinged Doors and Locks

On top of having a unique frontal access to all components, all cabinet doors are hinged to facilitate access in the unit, eliminate the possibility of door misplacement and ensure the safety of the people surrounding the unit. Each door incorporates 2 locks for safety purposes.

Stainless Steel Drain Pan

For corrosion free operation throughout the life of the humidifier, the drain tray of all Vapac humidifiers is constructed of Stainless Steel. In addition, the drain pan includes an overflow to drain and a 1"(24.5mm) lip eliminating possible water spillage on the floor.

VapaNet Control System

The exclusive VapaNet software control system, ensures a simple and easily understood operator-to-humidifier interface throughout all Vapac products. At a glance, the front mounted LED indicator display clearly shows the operational state of the humidifier. Easy to read symbols make interpretation clear and precise. Initial set up on site is also simple; plug in jumpers, select water type and input control signal, and all other operations are pre-set at the factory. Commissioning could not be easier. Here are some of the unique parameters that can be displayed with the Vapac humidifiers optional alphanumeric display:

- Space RH
- Space Temp
- System output
- Control signal demand
- Total power used by the unit
- Run hours
- Network connections status

VapaNet Alphanumeric Display

All VapaNet units can be fitted with an optional keypad and alphanumeric display. At the touch of a button, the system status will be displayed and, in the event of service being needed, a help message will scroll across the display describing the action to be taken.

Primary/Secondary Facility

VapaNet allows for a maximum of 10 cylinders to communicate within a Primary/Secondary system with an interconnecting two-core cable. Maximum duty 450 kg/h (990 lbs/h). The Primary would be a fully proportional humidifier (LR-P) and the secondary humidifier would be On/Off devices (LR).

LON Works™ Compatible

VapaNet systems have the ability to communicate with any Building Management System incorporating the LON™ open system protocol as well as other Vapac products to create a seamless network of control.

Run And Alarm Interface

Remote indications as volt-free contacts are standard to show Run and/or Alarm conditions.

Choice Of Operating Voltages

Vapac LR Series can operate using various voltages with 1 or 3 phase power supply.

Code Compliance

All models are certified by UL Underwriter Laboratories for USA and Canada.

"All commercial and industrial Vapac humidifiers operate using the VapaNet controller"

The Accessories

Steam Distributors

Stainless steel distributors can be used to introduce steam coming from the resistance steam humidifier into a duct system. They come in different length and capacity for all your application needs. Multiple distributors or the VAPASORB steam manifold can be used when a shorter absorption distance is required.

Room Distribution Unit

When there is no duct system, a room distribution unit (RDU) can be used for direct steam injection in the space. The RDU comes complete with its own fan and safety circuitry for fast steam dispersion in the room.

Controls

The humidifier can be controlled directly from either a duct or room mounted humidity sensor, supplied by Vapac or an external signal by others. All models can be operated from a potentiometric signal, a LON™ network signal or from any of six standard voltage/amperage analogue signals. Safety interlocks for fan operation, airflow switches, high limit humidistat, or any other safety device can also be used allowing the humidifier to operate as one with the dynamics of the air conditioning system.

Alphanumeric Display

The alphanumeric display can be factory fitted to the cabinet as a permanent installation or supplied as a de-mountable accessory which can be installed remotely from the plant or as a plug-in device to aid service and troubleshooting.

Communication Cable

A 10 ft (3 m) cable complete with compatible plugs is available for primary/secondary control connection. Extension to a maximum length of 328 ft (100 m) is possible.

The Unit

Vapac®

"Delivering Quality Humidification"

LR Series - Technical Data

Model	Nominal Capacity lb/hr [kg/hr]	Voltage/ Ph	Full Load Current (A)	Power (kW)	Weight Dry lb (kg)	Weight Wet lb(kg)	Steam Outlet Qty	Steam Outlet Dim	Overall Dimensions Height	Overall Dimensions Width	Overall Dimensions Depth
LR11	9 [4] 13 [6]	208/1 240/1	15.2 17.5	3.2 4.2	75 (34)	106 (48)	1	1 3/8" (35mm)	31.9" (810mm)	20.5" (520mm)	16.6" (421mm)
LR18	19 [8] 25 [11]	208/1 240/1	29.9 34.5	6.2 8.3	78 (35)	109 (50)					
LR22	22 [10]	600/3	7.2	7.5	78 (35)	109 (50)					
LR24	19 [8] 25 [11]	208/3 240/3	17.2 19.9	6.2 8.3	78 (35)	109 (50)					
LR32	33 [15]	480/3	13.3	11.0	78 (35)	109 (50)					
LR37	37 [17] 49 [22]	208/1 240/1	59.7 68.9	12.4 16.5	86 (39)	144 (65)		2 1/8" (54mm)			
LR44	45 [20]	600/3	14.4	14.9	86 (39)	144 (65)					
LR48	37 [17] 49 [22]	208/3 240/3	34.5 39.8	12.4 16.5	86 (39)	144 (65)					
LR64	66 [30]	480/3	26.5	22.0	86 (39)	144 (65)					
LR68	68 [31]	600/3	22.1	22.9	88 (40)	146 (66)					
LR74	57 [26] 75 [34]	208/3 240/3	52.6 60.7	18.9 25.2	88 (40)	146 (66)					
LR88	89 [41]	600/3	28.8	29.9	160 (73)	276 (125)	2			39.0" (990mm)	
LR96	74 [34] 99 [45]	208/3 240/3	69.0 79.6	24.8 33.1	160 (73)	276 (125)					
LR100	100 [46]	480/3	40.5	33.6	88 (40)	146 (66)	1			20.5" (520mm)	
LR112	113 [51]	600/3	36.5	37.9	162 (74)	278 (126)	2			39.0" (990mm)	
LR122	94 [43] 125 [57]	208/3 240/3	87.1 100.5	31.4 41.8	162 (74)	278 (126)					
LR128	132 [60]	480/3	53.0	44.1	160 (73)	276 (125)					
LR136	137 [62]	600/3	44.2	45.9	164 (75)	281 (128)					
LR148	113 [51] 151 [68]	208/3 240/3	105.2 121.4	37.9 50.5	164 (75)	281 (128)					
LR164	166 [76]	480/3	67.0	55.7	162 (74)	278 (126)					
LR200	201 [91]	480/3	81.0	59.1	164 (75)	281 (128)					

LR Series Notes:
- All models are available with optional keypad display. Add a -D to your desired model number. (Example: LR44-D)
- All models are available with Pulsed Energy Control (8-100%) for full SSR modulation. Add a -P to your desired model number. (Example: LR44-P or LR44-PD)
- The information contained in the table above is equally applicable to the LRxxP units, however the maximum outputs will be 15% lower
- All data based on 60 Hz power supply

Operating limits:
- Ambient Air Temperature 41°F (5°C) to 95°F (35°C)
- Duct Pressure -0.4" w.c (-0,6 kPa) to +8" w.c.(+2 kPa)

Water Supply:
Hardness: 50-500 ppm
Maximum chloride level of 170 ppm
Conductivity: 0-1000 µS, PH 7.3 to 8.0, Silica 0 ppm
Water Temperature: 34°F (1°C) to 86°F (30°C)
Supply water pressure: 22-116 psig (1.5-8 bar)
Feedwater connection: 3/4" NPT female both ends of supplied flexible hose connection

Room Distribution Unit (RDU)

LR Model	RDU Model	Full Load Current (mA)	Overall Dimensions Height	Overall Dimensions Width	Overall Dimensions Depth
LR11	RDU05LR	210	8.0" (204mm)	14.8" (377mm)	14.4" (366mm)
LR18 LR22 LR24	RDU10LR	315	8.0" (204mm)	14.8" (377mm)	14.4" (366mm)
LR32 LR37 LR44 LR48	RDU20LR	315	8.0" (204mm)	17.7" (435mm)	14.4" (366mm)
LR64 LR68 LR74	RDU30L	525	8.0" (204mm)	23.7" (602mm)	14.4" (366mm)
LR88 LR96	Remote mounted Blower Pack Minimum 2 x RDU20LR				
LR100	RDU45LE	735	14.2" (361mm)	33.1" (841mm)	14.4" (366mm)
LR112 LR122 LR128	Remote Mounted Blower Pack with 2 x RDU30L				
LR136 LR148	Remote Mounted Blower Pack with 2 x RDU30L				
LR164 LR200	Remote Mounted Blower Pack with 2 x RDU45LE				

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