

CONDAIR DL SERIES

In-duct evaporative humidifier and cooler

Selection Guide





Condair DL Series

Two adiabatic humidification methods intelligently combined

The Condair DL hybrid humidifier is based exclusively on the advantages of the two humidification principles of atomization and evaporation. This results in the sustainable resolution of key problems which can emerge when these technologies are used individually. The humidification system is therefore the first choice in terms of hygiene, energy efficiency and cost-effectiveness.





Atomize + Evaporate

The humidifying water is atomized by stainless steel atomizing nozzles at low pressure. The atomizing nozzles have an adjustable spray output and are optimally distributed over the entire cross-section of the device. A high evaporation efficiency and a uniform humidity distribution are achieved by this layout. The evaporator unit made of premium ceramic is placed at the end of the humidification distance. It captures the humidifying water and ensures the best possible reevaporation. The ceramic plates thus allow the most effective utilization of the high-grade humidifying water, while also preventing water accumulation in downstream components.

Why the DL Series?



Efficient low-pressure systems

The low-pressure mode of operation translates to significant energy savings due to the lesser compression work.



Aerosol-free air

Using the patented ceramic evaporator unit, the humidifying water is completely separated from the air current and effectively evaporated.



Effective degermination

The HygienePlus® concept includes a series of measures for effective germ neutralization. The key element here is the patented silver ionization guaranteeing reliable hygiene and safety.



Precise control

The unique combination of the spray circuit drive and continuous water quantity control allows precise control accuracy.



Load Sizing	Humidifiers Distrib	utors Controls Ad	ccessories Summary
Name:	Duplicate this zone:		<i>≈</i>
DL Selection			Load Calculations
Load Size Method:	System Type	Calculation Method	Ventilation Load (H): 1,427.1 lbs/hr Total Humidification Load (Htot): 1,427.1 lbs/hr
	Set "System Type" to "In Duct Humidification"	↑ Set "Calculation Method" to "Adiabatic"	Absorption Distance: 0 ft Duct Velocity 278 ft./min
Duct Details			1
Duct Type	Duct Orientat	lion	
Duct Width (in.):	Duct Height (in.):	Duct Thickness (in.):	
330	157	2	
		J.	1
Max. duct width for a DL unit is Air Volume Outside Air (%): 50 .	330.7 in. (8400 mm), and max Air Volume (C 100000	. duct height is 157.5 in. (4000 mm). FM):	Maximum air velocity for the DL Series is 492.13 ft/min (2.5 m/s), or 787.40 ft/min (4 m/s) with a droplet separator.
"Outside Air (%)" is directly rela	ted to the amount of humidifica	tion capacity required	
 The more OA brought in, the performance of the humidifier, Note: OA% will affect the quart 	tity and configuration of nozzles	s required.	Selecting "Use Outside Design Conditions" will pull the ASHRAE weather data for your project location.
Outside Altitude 374	e (f): Outside Temp -11	o (°F): Outside Humidity (%): 48	Select "Override Outside Design Conditions" to enter a custom altitude, outside temperature and outside humidity.
Humidifier Conditions	Leaving Hun	nidity (%):	"Entering Temp" represents the air temperature entering the humidifier.
70.23 Entering Temp. (°F):	42 Entering Hur	midity (%):	If there is a preheat coil upstream of the humidifier, "Entering Temp" is equal to the air temperature leaving this preheat coil.
	14		It is important that this value is accurate as it will affect the sizing and performance of the humidifier.







2.2 Configure Produ					
2.2 comgare rioud	ct				
			2		
Service Access Upstream	n Only?				
Checking this box or	tifies Condair that access s	pace is required below th	e nozzle grid		
Cable Length:					
<3ft	~				
"Cable Length" refers	s to the distance between th	e control & central unit. T	The control & centra	unit rack is required for	UL certification, so this
Hose Length:					
16ft	~				
"Hose Length" refers	to the length of hose betwe	en the central unit and ne	ozzle grid.		
Section Length (in):					
24.00					
"Section Length" refe	ers to the total length of the	unit, from the start of the	nozzle grid to the e	nd of the ceramics.	
Maximum Duct Height (i	n):				1
161.00					
"Maximum Duct Heig <u>must</u> be accurate. If	pht" (H _{max}) is equal to the inte "Maximum Duct Height" is l	ernal height of the duct (ł ess than "Duct Height" (p	H ₁) + the depth of th g. 2), order entry ca	e drain pan (H ₂). This va innot be processed.	alue H, H,
Example: From pg. 7	, $H_1 = 157$ in. If the drain pa	n has a depth of 4 in., H _r	$_{\rm max} = {\rm H}_1 + {\rm H}_2 = 157$	+ 4 = 161 in.	
<i>Note:</i> whenever "Du does not do this auto	ct Height" is changed, make omatically.	sure to update "Maximu	m Duct Height" acco	ordingly. Help Software	
External Valve Block					
Check this box if the to 82 ft (25 m) away	valve block should be locat from the AHU.	ed external to the central	unit, allowing the c	entral unit to be placed u	ap at a
Note: if this feature	s selected, "Hose Length" th	nen becomes the distance	e from the nozzle gi	id to the valve block.	
Distance to Pump (ft):					
20.00					
"Distance to Pump"	will appear if the external val	ve block is selected. This	s refers to the distar	ice from the central unit	to the valve block.
Droplet Separator (Optional)					
The droplet separate	r will be automatically selec	ted if air velocity exceeds	s 492.13 ft/min (2.5	m/s).	









Tag	Description	Part Number	Qty
DL Selection	Switch Air Proving (duct airflow safety interlock)	2598427	1
	0-10V Dig. Duct Humidistat pkg	2597929	1
	Humidistat, On/Off, High Limit, Digital, Duct Mount	2597935	1

An air proving switch and high limit device are always required, whether supplied by Condair or others.





Complete Parts and Humidifiers List

••••

This section displays a summary of the full system selection. One DL consists of several components, all of which are indicated with the "DL_" prefix.

Tag	Description	Part Number	Qty		
DL Selection	 DL Type A - Standard	DL A8382 3988 683 L 31 75 0	1	Core DL unit	
	Central Unit Rack	DL_OPTION_06	1	1	
	31 Stage Control Option	DL_REGELUNG_31	1		
	DL External Valve Block	DL_OPTION_12	1	Specific configurations, additional options, controls & accessories	
	0-10V Dig. Duct Humidistat pkg	2597929	1		
	Humidistat, On/Off, High Limit, Digital, Duct Mount	2597935	1		
	Switch Air Proving (duct airflow safety interlock)	2598427	1		

Questions? For help with any of your humidification projects, contact your local Condair representative.

USA 1021 6th Street, Racine, WI 53177 Canada 2740 Fenton Road, Ottawa, Ontario K1T 3T7 Tel 1.866.667.8321 Fax 613.822.7964 Email na.info@condair.com Website www.condair.com

