

# CDA

## Refrigerant Air Dryers

**NEW  
GREEN  
PRODUCT  
FOR  
2011**



**CDA** (acronym) for Clean Dry Air, air that has been filtered and dehumidified to remove particulates and moisture so that it can be safely used in pneumatic devices or systems.

### Principle of Operation

Wet air enters into the dryer and passes through the heat exchanger. The warm wet air entering the dryer is cooled down by the outgoing cold and dried air which reduces load on the refrigerant compressor, saving energy costs.

Next the compressed air passes through the air to refrigerant heat exchanger which cools the air temperature to the pre-set dewpoint. This is set at +2C, water in the air at this stage condenses and turns into water droplets. This condensate is removed automatically by the autodrain as bulk water. (This should then pass into a Hi-line Gen 2 oil/water separator before going to drain).

Finally, the cool and dry air is reheated by thermally mixing it with the incoming air which also reduces its relative humidity (water-loading), thus preventing pipework corrosion and annoying condensation on downstream pipework.

Large dryers up to 9680 cfm available on a short lead-time, our standard range is available ex-stock Burton for next day delivery.

High Pressure and Thermal Mass dryers available for order.

Service support by our own engineers with Nationwide backup.

Fridge Model	cfm	m3/hr	m3/min	Connection	Power Supply V/Hz	Refrigerant
CDA15	15	25	0.43	½"	230/1/50-60	R134a
CDA23	23	39	0.65	½"	230/1/50-60	R134a
CDA33	33	54	0.93	½"	230/1/50-60	R134a
CDA40	40	67	1.13	½"	230/1/50-60	R134a
CDA50	50	84	1.41	½"	230/1/50-60	R134a
CDA70	70	119	1.98	½"	230/1/50-60	R134a
CDA100	100	170	2.83	1"	230/1/50-60	R134a
CDA120	120	204	3.39	1"	230/1/50-60	R134a
CDA150	150	257	4.24	1 ½"	230/1/50-60	R404a
CDA200	200	339	5.66	1 ½"	230/1/50-60	R404a
CDA235	235	398	6.65	1 ½"	230/1/50-60	R404a
CDA295	295	501	8.35	1 ½"	230/1/50-60	R404a
CDA365	365	620	10.33	1 ½"	230/1/50-60	R404a
CDA500	500	849	14.15	1 ½"	230/1/50-60	R404a
CDA570	570	971	16.14	1 ½"	230/1/50-60	R404a
CDA625	625	1061	17.69	1 ½"	230/1/50-60	R404a
CDA775	775	1318	21.94	2"	230/1/50-60	R404a

Performances are in accordance with ISO 7183

### Reference Conditions

Inlet compressed air pressure: 7 barg  
 Inlet compressed air temperature: 35°C @ 100% RH  
 Ambient air temperature: 25°C  
 Minimum pressure dew point (PDP): 2°C

### Capacity Correction for Various Operating Pressure

Pressure - barg	5	6	7	8	9	10	12	14	16
Factor (Pc)	0.96	0.98	1.0	1.04	1.06	1.09	1.13	1.18	1.22

Inlet Temperature - °C	30	35	40	45	50	55
Factor (Ic)	1.11	1.0	0.89	0.79	0.7	0.62

Ambient Temperature - °C	25	30	35	40	43
Factor (Ac)	1.0	0.95	0.90	0.85	0.84

### Example of dryer selection:

Which dryer is required to handle the following worst case conditions?

Maximum compressed air flow of 12 m<sup>3</sup>/min

Lowest operating pressure of 10 barg

Maximum air inlet temperature of 40°C

Maximum ambient air temperature of 35°C

Corrected Capacity is:

Actual Capacity / (Pc \* Ic \* Ac) = 12 m<sup>3</sup>/min / (1.09 \* 0.89 \* 0.9) = 10.4 m<sup>3</sup>/min

Dryer Selection is: CDA365 for a +2°C PDP

### General Information

- Operating pressure range: 2 to 13 barg
- Maximum inlet air temperature: 55°C
- Ambient temperature range: 0°C to 43°C (47°C option)
- A full range of high performance oil removal and particle filters are also available to suit each dryer

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