

# Cooline<sup>®</sup>

AIR CONDITIONERS

from  Zamil



## District Cooling Chilled Water Fan Coil Units

DCL Series  
DCL02 thru DCL14  
200 CFM thru 1400 CFM

*Higher quality of indoor living*

*Our product line ...*



## **Company Business**

Zamil Air Conditioners was founded in 1974, and is the first major business venture in manufacturing sector for the Al Zamil group of Companies. It is also the first manufacturing unit for air conditioners to be established in Saudi Arabia.

Zamil Air conditioners manufactures both consumer and central range of air conditioners and has sales operations in over 55 countries in the Middle East, Europe, America, Africa, Australia and the Far East.

The company's operations are structured into four Strategic Business Units (SBUs) supporting six in - house product and service brands as well as a number of international brands under the OEM sales.

The six in-house brands are Classic, Cooline, CoolCare, Clima Tech, Geoclima and Kessler Clima Tech.

The four SBUs are:

1. Consumer Business unit supporting Classic, Cooline, GE and OEM brands for consumer range of air conditioners.
2. Unitary & Applied Business unit supporting Classic, Cooline, GE and OEM brands for commercial range of air conditioners.
3. Zamil CoolCare - service and maintenance provider.
4. Geoclima srl - independent business and supporting other SBUs for their requirement of Chillers & Double skin AHU's.

The first three SBUs - Consumer Products, Unitary & Applied Products and Zamil CoolCare direct their business operations from the corporate headquarters at Dammam, Saudi Arabia.

The production facilities at Dammam are shared by Consumer Products and Unitary & Applied Products. Geoclima has its own production and functional departments located at Monfalcone, Italy.

All the four SBUs, while operating independently, supplement each other's activities in a way that makes synergy work at its best and achieve the corporate goals of increased productivity and efficiently.

## **Factories and Productions**

Zamil Air Conditioners has its prime manufacturing base at Dammam, Saudi Arabia and has one speciality production facility in Italy operated by Geoclima.

The company can produce up to 440,000 room air conditioners, 60,000 mini-split systems and 36,500 central air-conditioning systems per year.

## **Quality & Product Certificates**

The Quality systems and policies at Zamil Air Conditioners comply with the required ISO 9001:2000 certification.

Zamil Air Conditioners is the first company in Saudi Arabia to receive the SASO (Saudi Arabia's Standard Organization) certificate for room air conditioners. Its products and services are also certified with:

1. CE (Council of European Community)
2. UL (Underwriters Laboratory)
3. AHAM certificate (Association of Home Appliance Manufacturers)
4. Eurovent
5. DEMKO
6. ETL

Other awards include the prestigious Engineering Excellence Award of General Electric, and the inaugural Prince Mohammed bin Fahd Al Saud Award for Factory Safety.

## **Our Products**

In addition to the consumer products such as the Room Air Conditioners (RAC) and the Mini Splits, Zamil Air Conditioners manufactures a host of residential and commercial air conditioners. This board range extends from the concealed units up to 5 ton, the ducted splits up to 30 tons, the packaged units up to 70 tons. The single and double skin air handling units up to 130,000 CFM and the water chillers up to 487 ton cooling capacity.

# INDEX

<b>Contents</b>	<b>Page</b>
District cooling .....	2
Model decoding .....	3
Unit features .....	3
Standard specifications .....	3-4
Options .....	4
Physical data .....	5
Cooling capacities .....	6-9
Fan performance data .....	10-11
Sound power data .....	12
Unit dimensions .....	13
Coil connection dimensions .....	14
Heater box dimensions & arrangements .....	15
Valve packages .....	15
Typical schematic wiring diagram .....	16
Installation .....	17
Electrical .....	17
Maintenance .....	17

*CONTINUING RESEARCH RESULTS IN STEADY IMPROVEMENTS.  
THEREFORE, THESE SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE.*

## **DISTRICT COOLING**

District cooling provides chilled water from a cooling plant through a network of pipes to multiple residential, industrial and commercial buildings for air conditioning purpose.

A typical district cooling system requires the FCU's to operate with a 14°F - 16°F delta temperature. Entering water temperature to the Fan Coil Unit is expected to be between 42°F and 44°F.

### **District Cooling Benefits:**

District cooling systems provide a variety of benefits, both qualitative and economic. The qualitative advantages are perceived in terms of better comfort, better reliability and maximized convenience. Mechanical cooling and air conditioning requirements are growing rapidly throughout the world, partly because there are many new buildings being built and partly because those buildings are being built in warm climates. However, no matter where those buildings are built, they tend to be tighter and more densely packed than they used to be. This creates a need for air conditioning even in cold climates.

People are also increasingly emitting more and more heat into buildings through all types of electronic equipment that generate extra heat such as computers and various other gadgets. All this has led to a growing demand for comfort in homes and offices, a need that is directly addressed by District Cooling.

The economic benefits can be experienced by both the owner and the tenant, where the capital costs of control panels, internal power distribution, annual maintenance and power consumption inside the building are reduced and the cost of chillers are eliminated.

- \* Better quality of cooling
- \* Maximum cost effectiveness
- \* Capital cost elimination
- \* Space saving
- \* Decrease in sound pollution
- \* Environmental friendly

# MODEL DECODING

1, 2 & 3 BASIC (SERIES)	4 & 5 SIZE (x 100 CFM)	6 ELECTRICAL SUPPLY (V-Ph-Hz)	7 COIL	8 HEATER	9 ACCESSORIES	10 FINS	11 COIL CONNECTION	12 FILTER	13 OPTION
DCL HORIZONTAL CONCEALED CHILLED WATER DISTRICT COOLING FAN COIL UNITS	02	B : 220/240-1-50	A : 3 ROW CHILLED WATER B : 4 ROW CHILLED WATER	N : NO HEATER B : 1 kW D : 2 kW E : 3 kW F : 4 kW G : 5 kW	N : STANDARD B : 3D VALVE PACKAGE (COOL ONLY)	A : ALUMINUM FIN B : COATED ALUMINUM FIN C : COPPER FIN	R : RH SIDE, STANDARD (FACING AIR DISCHARGE) L : LH SIDE, OPTIONAL (FACING AIR DISCHARGE)	N : NONE A : ALUMINUM (1/2" THICK) C : SYNTHETIC (1/2" THICK)	N : STANDARD UNIT
	03								
	04								
	06								
	08								
	10								
	12								
14	N : NO HEATER D : 2 kW E : 3 kW F : 4 kW G : 5 kW J : 7 kW M : 10 kW								

## UNIT FEATURES

### LOW HEIGHT UNITS

Good for spaces with low ceiling height.

### COMPACT DIMENSIONS

Ideal to fit into tight spaces.

### EASY MAINTENANCE / ONE SIDE ACCESS

Filters can be easily removed by sliding. Piping and controls are on one side for easy access.

### BACK AND BOTTOM RETURN AIR OPTIONS

### SINGLE COIL FOR RH & LH APPLICATIONS (FIELD CHANGEABLE FOR RH & LH APPLICATIONS)

### VALVE PACKAGES FOR 2 PIPE SYSTEMS

### WIDE RANGE OF HEATER SIZES

### QUIET, PULSE FREE AIR DELIVERY

Centrifugal fans that are statically and dynamically balanced, handle up to 0.5" w.g. external static pressure allowing you to keep the unit away from your comfort zone.

## STANDARD SPECIFICATIONS

### UNIT CONSTRUCTION

These units are fabricated of heavy gauge galvanized steel to ensure lasting durability and dependable performance with minimum maintenance. The panels are insulated to provide positive protection against sweating and maximum damping of air noise.

This unit is designed for those concealed overhead installations which require supply ductwork. A 1" duct collar is provided into the front panel for supply air duct connection. The standard arrangement provides return air from the rear side. This arrangement may be reversed to provide bottom return air by simply interchanging the bottom and rear panel. This reversal can be easily accomplished in the field.

**Access to the blower motor assembly** is provided through the removable bottom panel from where the complete fan/motor can be removed for servicing.

### FANS

The centrifugal, forward curved, double width fan wheels are statically and dynamically balanced for quiet and smooth performance. Blower housing is rugged galvanized steel to provide added rigidity and assure quiet & smooth operation.

## MOTORS

Motors are permanent split capacitor type with three speed windings and built-in thermal overload protection. The bearings are of sleeve type.

## FILTERS

All models are furnished with 1/2" thick permanent washable type aluminum filters as standard. Synthetic filters can be provided as an option.

## COILS

Coils are 3/8" OD copper tubing, constructed of enhanced copper tubes and mechanically bonded to aluminum fins. **As an option, corrugated copper fins or coated aluminum fins may be provided.** Manual air vents are provided on all chilled water coils. The standard chilled water coil is 3 rows for all models & 4 row chilled water coil is also provided as an option. Each coil is pressure tested in the factory at not less than 300 psi (2070 kpa) air pressure. Coils conform to ARI 410.

## DRAIN PAN

The condensate drain pan is fabricated of 18 gauge galvanized steel. The drain pan is powder coat painted. The outer surface is thermally insulated.

## DRIP LIP

The purpose of a 'drip-lip' is to capture any condensate from the valve packages and direct it to the drain pan. It is fabricated of a single metal formed to fit on the side of the drain pan. They may be installed in the field and should always be pitched towards the drain pan to assure proper drainage. This will be supplied loose for field installations along with valve packages.

# OPTIONS

## ELECTRIC HEATERS

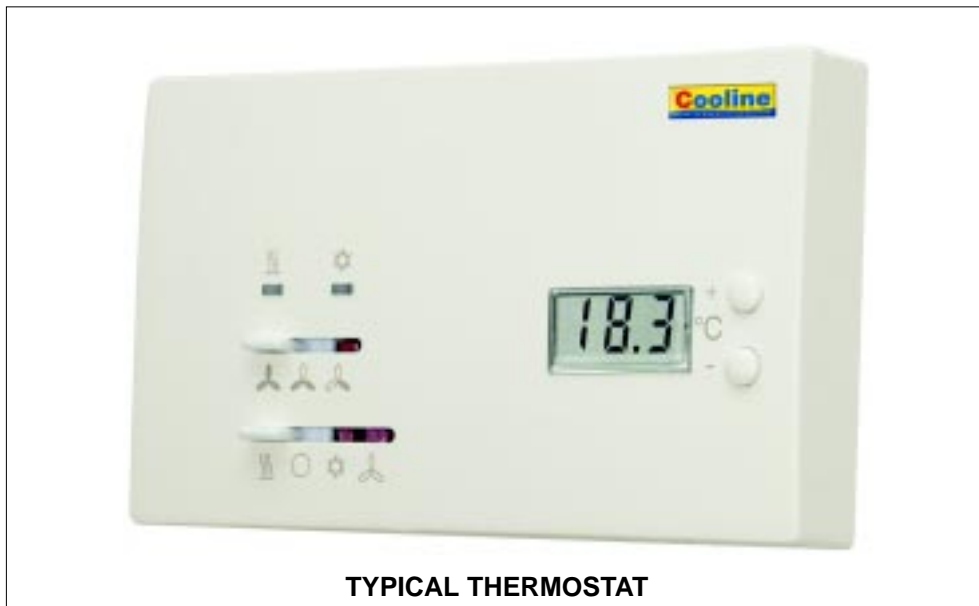
The heater element is of the resistance open coil type. Thermal overheat cut-outs and fusible links are provided to shut-off power to heaters in case of airflow failure.

## VALVE PACKAGES

Valve packages are available as an option (3D for two pipe system). These valves can be factory installed or supplied loose for field installation.

## THERMOSTAT

An attractive wall mount three speed electronic thermostat with all required functions and features for safe and smooth operation which can be used for cooling & heating requirements. This thermostat can be supplied loose through separate Kit number.



## PHYSICAL DATA

MODEL NUMBER		DCL02	DCL03	DCL04	DCL06	DCL08	DCL10	DCL12	DCL14
POWER SUPPLY, V-Ph-Hz		220/240-1-50							
BLOWER	Type	Forward Curved							
	Size (mm)	146x192	146x192	146x192	146x232	146x232	185x232	185x232	185x232
	Quantity	1	1	1	2	2	2	2	2
BLOWER MOTOR	Quantity	1	1	1	1	1	1	1	1
	FLA	0.66	0.66	0.66	1.16	1.16	2.52	2.52	2.52
	Watts @ 0.0 ESP, high speed	77	86	108	165	220	318	356	390
COOLING COIL	Type	Corrugated Fin & Tube							
	Rows, Standard	3	3	3	3	3	3	3	3
	Tube dia. - FPI	3/8 - 14	3/8 - 14	3/8 - 14	3/8 - 14	3/8 - 14	3/8 - 14	3/8 - 14	3/8 - 14
COIL CONNECTIONS (3 OR 4 ROWS)	Chilled water, Inlet (inch)	5/8	5/8	5/8	5/8	5/8	5/8	5/8	5/8
	Chilled water, Outlet (inch)	5/8	5/8	5/8	5/8	5/8	5/8	5/8	5/8
DRAIN CONNECTION	Size (inch)	7/8	7/8	7/8	7/8	7/8	7/8	7/8	7/8
RETURN AIR FILTER (1/2" THICK)	Size (inch)	8 x 23-3/8	8 x 23-3/8	8 x 23-3/8	8 x 19-5/8	8 x 19-5/8	10 x 26-1/8	10 x 26-1/8	10 x 26-1/8
	Quantity	1	1	1	2	2	2	2	2
SHIPPING WEIGHT	kg. (approx.)	30	30	30	40	40	54	54	54

# CHILLED WATER COOLING CAPACITIES - 3 ROW COIL (ENGLISH UNITS)

**ENTERING AIR TEMP. = 73°F DB/62°F WB (@ HIGH SPEED)**

WTR (°F)	UNIT SIZE	42°F EWT			43°F EWT			44°F EWT		
		TC	SC	GPM	TC	SC	GPM	TC	SC	GPM
16	02	6.46	4.66	0.81	6.10	4.50	0.76	5.74	4.34	0.72
	03	7.16	5.22	0.90	6.75	5.04	0.84	6.34	4.85	0.79
	04	7.55	5.54	0.95	7.12	5.34	0.89	6.68	5.15	0.83
	06	13.29	9.69	1.66	12.50	9.33	1.56	11.71	8.97	1.47
	08	14.56	10.69	1.82	13.68	10.29	1.71	12.80	9.89	1.60
	10	21.40	15.62	2.67	20.12	15.02	2.52	18.84	14.44	2.36
	12	22.27	16.30	2.78	20.93	15.68	2.62	19.59	15.07	2.45
	14	24.22	17.71	3.03	22.74	17.03	2.84	21.28	16.37	2.66
15	02	6.53	4.71	0.87	6.17	4.54	0.82	5.81	4.38	0.77
	03	7.25	5.29	0.97	6.84	5.10	0.91	6.43	4.92	0.86
	04	7.66	5.61	1.02	7.22	5.41	0.96	6.78	5.22	0.91
	06	13.50	9.83	1.80	12.70	9.47	1.69	11.91	9.10	1.59
	08	14.82	10.87	1.98	13.93	10.45	1.86	13.05	10.05	1.74
	10	21.76	15.86	2.90	20.46	15.26	2.73	19.18	14.67	2.56
	12	22.66	16.56	3.02	21.31	15.92	2.84	19.96	15.32	2.66
	14	24.66	18.00	3.29	23.17	17.31	3.09	21.69	16.64	2.89
14	02	6.61	4.76	0.94	6.24	4.59	0.89	5.88	4.43	0.84
	03	7.35	5.35	1.05	6.93	5.16	0.99	6.52	4.98	0.93
	04	7.77	5.68	1.11	7.32	5.48	1.05	6.88	5.29	0.98
	06	13.73	9.97	1.96	12.92	9.61	1.85	12.12	9.24	1.73
	08	15.10	11.04	2.16	14.20	10.62	2.03	13.30	10.22	1.90
	10	22.14	16.10	3.16	20.83	15.50	2.98	19.53	14.91	2.79
	12	23.08	16.83	3.30	21.70	16.20	3.10	20.34	15.57	2.91
	14	25.12	18.31	3.59	23.61	17.61	3.37	22.12	16.92	3.16

**ENTERING AIR TEMP. = 75°F DB/64°F WB (@ HIGH SPEED)**

WTR (°F)	UNIT SIZE	42°F EWT			43°F EWT			44°F EWT		
		TC	SC	GPM	TC	SC	GPM	TC	SC	GPM
16	02	8.69	5.71	1.09	8.32	5.55	1.04	7.95	5.40	0.99
	03	9.68	6.43	1.21	9.26	6.25	1.16	8.84	6.08	1.10
	04	10.25	6.84	1.28	9.80	6.65	1.22	9.35	6.46	1.17
	06	18.21	12.07	2.28	17.38	11.71	2.17	16.57	11.37	2.07
	08	20.08	13.39	2.51	19.16	12.99	2.39	18.24	12.60	2.28
	10	29.40	19.49	3.68	28.06	18.91	3.51	26.73	18.35	3.34
	12	30.69	20.40	3.84	29.28	19.79	3.66	27.88	19.19	3.48
	14	33.46	22.22	4.18	31.90	21.55	3.99	30.36	20.89	3.80
15	02	8.77	5.76	1.17	8.40	5.60	1.12	8.03	5.45	1.07
	03	9.79	6.49	1.30	9.36	6.31	1.25	8.95	6.14	1.19
	04	10.37	6.91	1.38	9.92	6.72	1.32	9.47	6.53	1.26
	06	18.48	12.23	2.46	17.65	11.86	2.35	16.82	11.52	2.24
	08	20.42	13.59	2.72	19.48	13.17	2.60	18.54	12.79	2.47
	10	29.87	19.78	3.98	28.51	19.17	3.80	27.16	18.61	3.62
	12	31.19	20.70	4.16	29.76	20.08	3.97	28.34	19.47	3.78
	14	34.03	22.56	4.54	32.45	21.87	4.33	30.89	21.20	4.12
14	02	8.86	5.81	1.27	8.49	5.65	1.21	8.12	5.50	1.16
	03	9.90	6.56	1.41	9.47	6.38	1.35	9.05	6.21	1.29
	04	10.49	6.98	1.50	10.04	6.79	1.43	9.59	6.61	1.37
	06	18.78	12.40	2.68	17.93	12.03	2.56	17.09	11.68	2.44
	08	20.78	13.80	2.97	19.82	13.39	2.83	18.87	12.98	2.70
	10	30.37	20.06	4.34	28.99	19.46	4.14	27.61	18.88	3.94
	12	31.74	21.03	4.53	30.28	20.38	4.33	28.84	19.78	4.12
	14	34.66	22.94	4.95	33.05	22.22	4.72	31.46	21.56	4.49

**NOTE:**

For any other conditions, please use selection software for fan coil units.

Apart from capacities, this software provides;

- a) Sensible heat ratio
- b) Leaving air temperature (DB/WB) - °F
- c) Leaving water temperature - °F
- d) Water pressure drop (feet of water)

**LEGEND:**

- TC - Total Capacity (MBH)
- SC - Sensible Heat Capacity (MBH)
- WTR- Water Temperature Rise (°F)
- EWT- Entering Water Temperature (°F)
- GPM- Water flow (Gallons Per Minute)



# CHILLED WATER COOLING CAPACITIES - 4 ROW COIL (ENGLISH UNITS)

**ENTERING AIR TEMP. = 73°F DB/62°F WB (@ HIGH SPEED)**

WTR (°F)	UNIT SIZE	42°F EWT			43°F EWT			44°F EWT		
		TC	SC	GPM	TC	SC	GPM	TC	SC	GPM
16	02	7.39	5.22	0.92	6.98	5.04	0.87	6.58	4.86	0.82
	03	8.38	6.01	1.05	7.91	5.79	0.99	7.44	5.59	0.93
	04	8.86	6.39	1.11	8.35	6.15	1.04	7.85	5.93	0.98
	06	15.66	11.21	1.96	14.74	10.78	1.84	13.83	10.37	1.73
	08	17.22	12.42	2.15	16.19	11.93	2.02	15.17	11.46	1.90
	10	25.25	18.09	3.16	23.76	17.39	2.97	22.28	16.72	2.78
	12	26.32	18.91	3.29	24.75	18.18	3.09	23.20	17.48	2.90
	14	28.66	20.57	3.58	26.93	19.77	3.37	25.23	19.00	3.15
15	02	7.47	5.27	1.00	7.06	5.09	0.94	6.65	4.90	0.89
	03	8.48	6.07	1.13	8.00	5.85	1.07	7.53	5.65	1.00
	04	8.97	6.46	1.19	8.46	6.22	1.13	7.96	6.00	1.06
	06	15.90	11.22	2.12	14.97	10.93	2.00	14.05	10.51	1.87
	08	17.51	12.60	2.33	16.47	12.11	2.20	15.44	11.64	2.06
	10	25.66	18.26	3.42	24.14	17.64	3.22	22.65	16.96	3.02
	12	26.76	19.20	3.57	25.17	18.46	3.36	23.60	17.74	3.15
	14	29.15	20.89	3.89	27.41	20.07	3.65	25.68	19.29	3.42
14	02	7.55	5.32	1.08	7.13	5.13	1.02	6.72	4.95	0.96
	03	8.58	6.13	1.23	8.10	5.92	1.16	7.63	5.71	1.09
	04	9.08	6.53	1.30	8.57	6.30	1.22	8.07	6.08	1.15
	06	16.16	11.14	2.31	15.21	11.09	2.17	14.28	10.66	2.04
	08	17.82	12.80	2.54	16.76	12.31	2.39	15.72	11.84	2.24
	10	26.09	18.03	3.73	24.56	17.91	3.51	23.04	17.21	3.29
	12	27.24	19.49	3.89	25.62	18.74	3.66	24.02	18.01	3.43
	14	29.69	21.14	4.24	27.92	20.40	3.99	26.16	19.60	3.74

**ENTERING AIR TEMP. = 75°F DB/64°F WB (@ HIGH SPEED)**

WTR (°F)	UNIT SIZE	42°F EWT			43°F EWT			44°F EWT		
		TC	SC	GPM	TC	SC	GPM	TC	SC	GPM
16	02	9.90	6.38	1.24	9.49	6.03	1.19	9.07	6.03	1.13
	03	11.29	7.32	1.41	10.81	7.17	1.35	10.33	6.97	1.29
	04	11.97	7.86	1.50	11.45	7.63	1.43	10.94	7.42	1.37
	06	21.43	13.95	2.68	20.46	13.52	2.56	19.49	13.10	2.44
	08	23.70	15.34	2.96	22.61	15.04	2.83	21.53	14.57	2.69
	10	34.65	22.56	4.33	33.07	21.87	4.13	31.50	21.18	3.94
	12	36.21	23.64	4.53	34.55	22.90	4.32	32.90	22.20	4.11
	14	39.54	25.79	4.94	37.70	24.98	4.71	35.88	24.18	4.48
15	02	10.00	6.44	1.33	9.57	6.20	1.28	9.16	6.08	1.22
	03	11.41	7.45	1.52	10.93	7.24	1.46	10.44	7.03	1.39
	04	12.11	7.93	1.61	11.58	7.71	1.54	11.06	7.49	1.47
	06	21.75	14.13	2.90	20.77	13.70	2.77	19.79	13.28	2.64
	08	24.10	15.44	3.21	22.99	15.26	3.06	21.89	14.79	2.92
	10	35.20	22.88	4.69	33.59	22.17	4.48	32.00	21.47	4.27
	12	36.82	24.00	4.91	35.12	23.25	4.68	33.44	22.51	4.46
	14	40.24	26.19	5.36	38.36	25.36	5.11	36.51	24.54	4.87
14	02	10.10	6.49	1.44	9.67	6.31	1.38	9.25	6.13	1.32
	03	11.54	7.52	1.65	11.05	7.31	1.58	10.56	7.10	1.51
	04	12.25	7.85	1.75	11.72	7.79	1.67	11.20	7.57	1.60
	06	22.11	14.34	3.16	21.11	13.90	3.01	20.11	13.46	2.87
	08	24.54	16.01	3.50	23.40	15.51	3.34	22.28	15.02	3.18
	10	35.82	23.23	5.12	34.17	22.51	4.88	32.54	21.79	4.65
	12	37.48	24.37	5.35	35.75	23.61	5.11	34.03	22.85	4.86
	14	41.02	26.64	5.86	39.09	25.79	5.58	37.19	24.95	5.31

**NOTE:**

For any other conditions, please use selection software for fan coil units.

Apart from capacities, this software provides;

- a) Sensible heat ratio
- b) Leaving air temperature (DB/WB) - °F
- c) Leaving water temperature - °F
- d) Water pressure drop (feet of water)

**LEGEND:**

- TC - Total Capacity (MBH)
- SC - Sensible Heat Capacity (MBH)
- WTR- Water Temperature Rise (°F)
- EWT- Entering Water Temperature (°F)
- GPM- Water flow (Gallons Per Minute)

# CHILLED WATER COOLING CAPACITIES - 3 ROW COIL (METRIC UNITS)

ENTERING AIR TEMP. = 23°C DB/17°C WB (@ HIGH SPEED)

WTR (°C)	UNIT SIZE	5.5°C EWT			6°C EWT			6.5°C EWT		
		TC	SC	LPS	TC	SC	LPS	TC	SC	LPS
9	02	2.09	1.45	0.06	2.00	1.41	0.05	1.90	1.37	0.05
	03	2.32	1.63	0.06	2.21	1.58	0.06	2.11	1.53	0.06
	04	2.45	1.73	0.07	2.34	1.68	0.06	2.22	1.63	0.06
	06	4.33	3.03	0.11	4.12	2.94	0.11	3.91	2.84	0.10
	08	4.76	3.35	0.13	4.52	3.24	0.12	4.29	3.14	0.11
	10	6.98	4.89	0.19	6.64	4.73	0.18	6.30	4.59	0.17
	12	7.27	5.11	0.19	6.91	4.95	0.18	6.55	4.79	0.17
14	7.91	5.56	0.21	7.52	5.38	0.20	7.13	5.20	0.19	
8.5	02	2.11	1.46	0.06	2.02	1.42	0.06	1.92	1.38	0.05
	03	2.35	1.64	0.07	2.24	1.60	0.06	2.13	1.55	0.06
	04	2.48	1.75	0.07	2.37	1.70	0.07	2.25	1.65	0.06
	06	4.39	3.07	0.12	4.18	2.97	0.12	3.97	2.88	0.11
	08	4.83	3.40	0.14	4.59	3.29	0.13	4.35	3.18	0.12
	10	7.08	4.95	0.20	6.73	4.79	0.19	6.39	4.65	0.18
	12	7.38	5.18	0.21	7.02	5.01	0.20	6.66	4.86	0.19
14	8.03	5.63	0.23	7.63	5.45	0.21	7.24	5.28	0.20	
8	02	2.14	1.48	0.06	2.05	1.45	0.06	1.95	1.40	0.06
	03	2.37	1.66	0.07	2.27	1.61	0.07	2.16	1.57	0.06
	04	2.51	1.77	0.07	2.40	1.71	0.07	2.28	1.66	0.07
	06	4.45	3.11	0.13	4.24	3.01	0.13	4.02	2.92	0.12
	08	4.90	3.45	0.15	4.66	3.34	0.14	4.42	3.23	0.13
	10	7.18	5.02	0.21	6.84	4.86	0.20	6.49	4.71	0.19
	12	7.49	5.25	0.22	7.13	5.08	0.21	6.76	4.92	0.20
14	8.16	5.71	0.24	7.76	5.53	0.23	7.36	5.35	0.22	

ENTERING AIR TEMP. = 24°C DB/18°C WB (@ HIGH SPEED)

WTR (°C)	UNIT SIZE	5.5°C EWT			6°C EWT			6.5°C EWT		
		TC	SC	LPS	TC	SC	LPS	TC	SC	LPS
9	02	2.68	1.72	0.07	2.59	1.68	0.07	2.49	1.64	0.07
	03	2.99	1.94	0.08	2.88	1.89	0.08	2.77	1.84	0.07
	04	3.17	2.06	0.08	3.05	2.01	0.08	2.93	1.96	0.08
	06	5.64	3.64	0.15	5.42	3.55	0.14	5.20	3.45	0.14
	08	6.23	4.04	0.17	5.98	3.94	0.16	5.73	3.83	0.15
	10	9.11	5.89	0.24	8.75	5.73	0.23	8.40	5.58	0.22
	12	9.51	6.16	0.25	9.14	6.00	0.24	8.76	5.84	0.23
14	10.37	6.71	0.28	9.96	6.53	0.26	9.55	6.36	0.25	
8.5	02	2.71	1.73	0.08	2.61	1.69	0.07	2.51	1.65	0.07
	03	3.02	1.95	0.08	2.91	1.90	0.08	2.80	1.86	0.08
	04	3.20	2.08	0.09	3.08	2.03	0.09	2.96	1.98	0.08
	06	5.71	3.68	0.16	5.49	3.59	0.15	5.27	3.50	0.15
	08	6.32	4.10	0.18	6.07	3.99	0.17	5.82	3.88	0.16
	10	9.24	5.96	0.26	8.88	5.80	0.25	8.52	5.65	0.24
	12	9.65	6.24	0.27	9.27	6.07	0.26	8.89	5.91	0.25
14	10.53	6.81	0.30	10.11	6.62	0.28	9.70	6.44	0.27	
8	02	2.73	1.72	0.08	2.63	1.70	0.08	2.53	1.66	0.08
	03	3.05	1.97	0.09	2.94	1.92	0.09	2.83	1.88	0.08
	04	3.23	2.10	0.10	3.11	2.05	0.09	3.00	2.00	0.09
	06	5.80	3.73	0.17	5.57	3.63	0.17	5.35	3.54	0.16
	08	6.41	4.15	0.19	6.16	4.04	0.18	5.91	3.94	0.18
	10	9.38	6.04	0.28	9.01	5.88	0.27	8.64	5.72	0.26
	12	9.80	6.33	0.29	9.41	6.16	0.28	9.03	5.99	0.27
14	10.70	6.90	0.32	10.28	6.72	0.31	9.85	6.54	0.29	

**NOTE:**

For any other conditions, please use selection software for fan coil units.

Apart from capacities, this software provides;

- a) Sensible heat ratio
- b) Leaving air temperature (DB/WB) - °C
- c) Leaving water temperature - °C
- d) Water pressure drop (kp)

**LEGEND:**

- TC - Total Capacity (kW)
- SC - Sensible Heat Capacity (kW)
- WTR- Water Temperature Rise (°C)
- EWT- Entering Water Temperature (°C)
- LPS - Water flow (Liters Per Second)

# CHILLED WATER COOLING CAPACITIES - 4 ROW COIL (METRIC UNITS)

**ENTERING AIR TEMP. = 23°C DB/17°C WB (@ HIGH SPEED)**

WTR (°C)	UNIT SIZE	5.5°C EWT			6°C EWT			6.5°C EWT		
		TC	SC	LPS	TC	SC	LPS	TC	SC	LPS
9	02	2.39	1.63	0.06	2.28	1.58	0.06	2.18	1.53	0.06
	03	2.72	1.84	0.07	2.59	1.82	0.07	2.47	1.76	0.07
	04	2.87	1.99	0.08	2.74	1.93	0.07	2.61	1.87	0.07
	06	5.10	3.44	0.14	4.85	3.39	0.13	4.61	3.28	0.12
	08	5.62	3.89	0.15	5.34	3.76	0.14	5.07	3.64	0.13
	10	8.23	5.51	0.22	7.83	5.48	0.21	7.43	5.30	0.20
	12	8.58	5.92	0.23	8.16	5.73	0.22	7.75	5.55	0.21
	14	9.35	6.37	0.25	8.89	6.24	0.24	8.43	6.03	0.22
8.5	02	2.41	1.64	0.07	2.30	1.59	0.06	2.20	1.54	0.06
	03	2.74	1.85	0.08	2.62	1.83	0.07	2.49	1.78	0.07
	04	2.91	2.01	0.08	2.77	1.95	0.08	2.64	1.89	0.07
	06	5.17	3.55	0.15	4.92	3.44	0.14	4.67	3.32	0.13
	08	5.70	3.94	0.16	5.42	3.81	0.15	5.14	3.69	0.14
	10	8.34	5.71	0.23	7.94	5.55	0.22	7.54	5.36	0.21
	12	8.71	5.86	0.24	8.28	5.81	0.23	7.86	5.62	0.22
	14	9.49	6.33	0.27	9.03	6.32	0.25	8.56	6.11	0.24
8	02	2.43	1.65	0.07	2.33	1.58	0.07	2.22	1.55	0.07
	03	2.77	1.87	0.08	2.65	1.85	0.08	2.52	1.79	0.08
	04	2.94	2.03	0.09	2.80	1.97	0.08	2.67	1.91	0.08
	06	5.24	3.59	0.16	4.99	3.48	0.15	4.74	3.36	0.14
	08	5.79	3.98	0.17	5.50	3.86	0.16	5.22	3.74	0.16
	10	8.47	5.81	0.25	8.06	5.62	0.24	7.65	5.44	0.23
	12	8.84	5.96	0.26	8.41	5.88	0.25	7.98	5.69	0.24
	14	9.65	6.60	0.29	9.17	6.41	0.27	8.70	6.20	0.26

**ENTERING AIR TEMP. = 24°C DB/18°C WB (@ HIGH SPEED)**

WTR (°C)	UNIT SIZE	5.5°C EWT			6°C EWT			6.5°C EWT		
		TC	SC	LPS	TC	SC	LPS	TC	SC	LPS
9	02	3.06	1.92	0.08	2.95	1.88	0.08	2.84	1.83	0.08
	03	3.49	2.22	0.09	3.36	2.17	0.09	3.23	2.11	0.09
	04	3.70	2.34	0.10	3.56	2.31	0.09	3.43	2.25	0.09
	06	6.64	4.21	0.18	6.38	4.10	0.17	6.12	3.99	0.16
	08	7.35	4.64	0.20	7.06	4.56	0.19	6.77	4.44	0.18
	10	10.74	6.82	0.28	10.32	6.63	0.27	9.90	6.45	0.26
	12	11.23	7.14	0.30	10.78	6.95	0.29	10.34	6.76	0.27
	14	12.26	7.79	0.33	11.77	7.58	0.31	11.29	7.37	0.30
8.5	02	3.08	1.94	0.09	2.97	1.89	0.08	2.86	1.84	0.08
	03	3.52	2.24	0.10	3.39	2.19	0.10	3.26	2.13	0.09
	04	3.74	2.32	0.11	3.60	2.33	0.10	3.46	2.27	0.10
	06	6.73	4.26	0.19	6.46	4.15	0.18	6.20	4.03	0.17
	08	7.46	4.75	0.21	7.16	4.62	0.20	6.87	4.49	0.19
	10	10.89	6.90	0.31	10.46	6.71	0.29	10.04	6.53	0.28
	12	11.39	7.24	0.32	10.94	7.04	0.31	10.49	6.84	0.29
	14	12.46	7.91	0.35	11.96	7.68	0.34	11.46	7.47	0.32
8	02	3.11	1.95	0.09	3.00	1.90	0.09	2.89	1.86	0.09
	03	3.56	2.26	0.11	3.43	2.21	0.10	3.30	2.15	0.10
	04	3.78	2.39	0.11	3.64	2.35	0.11	3.50	2.29	0.10
	06	6.82	4.32	0.20	6.56	4.20	0.20	6.29	4.09	0.19
	08	7.58	4.82	0.23	7.27	4.69	0.22	6.98	4.56	0.21
	10	11.06	7.00	0.33	10.62	6.80	0.32	10.19	6.62	0.30
	12	11.58	7.34	0.35	11.11	7.14	0.33	10.66	6.94	0.32
	14	12.67	8.02	0.38	12.16	7.80	0.36	11.65	7.58	0.35

**NOTE:**

For any other conditions, please use selection software for fan coil units.

Apart from capacities, this software provides;

- a) Sensible heat ratio
- b) Leaving air temperature (DB/WB) - °C
- c) Leaving water temperature - °C
- d) Water pressure drop (kp)

**LEGEND:**

- TC - Total Capacity (kW)
- SC - Sensible Heat Capacity (kW)
- WTR- Water Temperature Rise (°C)
- EWT- Entering Water Temperature (°C)
- LPS - Water flow (Liters Per Second)

## FAN PERFORMANCE DATA - 3 ROW COILS (ENGLISH UNITS)

MODEL NUMBER	BLOWER MOTOR SPEED	CFM @ EXTERNAL STATIC PRESSURE (Inches of water)								
		0.0	0.05	0.1	0.15	0.2	0.25	0.3	0.4	0.5
DCL02	HIGH	295	283	270	245	220	200	180	170	154
	MEDIUM	266	253	240	223	205	188	170	155	145
	LOW	225	215	205	193	180	165	150	-	-
DCL03	HIGH	362	346	330	310	290	260	230	190	175
	MEDIUM	340	325	310	285	260	235	210	-	-
	LOW	310	297	284	262	240	215	190	-	-
DCL04	HIGH	400	380	360	340	320	290	260	210	190
	MEDIUM	362	346	330	310	290	260	230	190	-
	LOW	340	325	310	285	260	235	210	-	-
DCL06	HIGH	666	633	600	558	515	438	360	280	250
	MEDIUM	610	591	572	518	464	395	326	250	180
	LOW	510	481	452	402	352	292	232	230	210
DCL08	HIGH	778	739	700	649	598	512	426	420	390
	MEDIUM	666	633	600	558	515	438	360	280	250
	LOW	610	591	572	518	464	395	326	250	180
DCL10	HIGH	1080	1045	1010	965	920	878	836	721	580
	MEDIUM	937	909	880	851	821	778	735	630	490
	LOW	863	836	808	775	741	698	655	560	450
DCL12	HIGH	1156	1118	1080	1040	1000	946	892	778	610
	MEDIUM	1080	1045	1010	965	920	878	836	721	580
	LOW	937	909	880	851	821	778	735	630	490
DCL14	HIGH	1250	1206	1162	1127	1092	1061	1030	1000	968
	MEDIUM	1156	1118	1080	1040	1000	946	892	778	610
	LOW	1080	1045	1010	965	920	878	836	721	580

## FAN PERFORMANCE DATA - 4 ROW COILS (ENGLISH UNITS)

MODEL NUMBER	BLOWER MOTOR SPEED	CFM @ EXTERNAL STATIC PRESSURE (Inches of water)								
		0.0	0.05	0.1	0.15	0.2	0.25	0.3	0.4	0.5
DCL02	HIGH	283	270	245	220	200	180	175	162	143
	MEDIUM	253	240	223	205	188	170	163	150	139
	LOW	215	205	193	180	165	150	75	-	-
DCL03	HIGH	346	330	310	290	260	230	210	183	159
	MEDIUM	325	310	285	260	235	210	105	-	-
	LOW	297	284	262	240	215	190	95	-	-
DCL04	HIGH	380	360	340	320	290	260	235	200	178
	MEDIUM	346	330	310	290	260	230	210	95	-
	LOW	325	310	285	260	235	210	105	-	-
DCL06	HIGH	633	600	558	515	438	360	320	265	201
	MEDIUM	591	572	518	464	395	326	288	215	165
	LOW	481	452	402	352	292	232	231	220	149
DCL08	HIGH	739	700	649	598	512	426	423	405	285
	MEDIUM	633	600	558	515	438	360	320	265	204
	LOW	591	572	518	464	395	326	288	215	160
DCL10	HIGH	1045	1010	965	920	878	836	779	651	510
	MEDIUM	909	880	851	821	778	735	683	560	440
	LOW	836	808	775	741	698	655	608	505	403
DCL12	HIGH	1118	1080	1040	1000	946	892	835	694	535
	MEDIUM	1045	1010	965	920	878	836	779	651	480
	LOW	909	880	851	821	778	735	683	560	430
DCL14	HIGH	1206	1162	1127	1092	1061	1030	1015	984	912
	MEDIUM	1118	1080	1040	1000	946	892	835	694	540
	LOW	1045	1010	965	920	878	836	779	651	504

NOTE: 1. Values include losses for dry coil and filters.  
 2. Airflow values are in CFM.

## FAN PERFORMANCE DATA - 3 ROW COILS (METRIC UNITS)

MODEL NUMBER	BLOWER MOTOR SPEED	LITERS PER SECOND @ EXTERNAL STATIC PRESSURE (Pascal)								
		0.0	12.5	25	37.5	50	62.5	75	100	125
DCL02	HIGH	139	133	127	116	104	94	85	80	73
	MEDIUM	126	119	113	105	97	88	80	73	68
	LOW	106	101	97	91	85	78	71	-	-
DCL03	HIGH	171	163	156	146	137	123	109	90	83
	MEDIUM	160	153	146	135	123	111	99	-	-
	LOW	146	140	134	124	113	101	90	-	-
DCL04	HIGH	189	179	170	160	151	137	123	99	90
	MEDIUM	171	163	156	146	137	123	109	90	-
	LOW	160	153	146	135	123	111	99	-	-
DCL06	HIGH	314	299	283	263	243	206	170	132	118
	MEDIUM	288	279	270	244	219	186	154	118	85
	LOW	241	227	213	190	166	138	109	109	99
DCL08	HIGH	367	349	330	306	282	242	201	198	184
	MEDIUM	314	299	283	263	243	206	170	132	118
	LOW	288	279	270	244	219	186	154	118	85
DCL10	HIGH	510	493	477	455	434	414	395	340	274
	MEDIUM	442	429	415	401	387	367	347	297	231
	LOW	407	394	381	366	350	329	309	264	212
DCL12	HIGH	546	528	510	491	472	446	421	367	288
	MEDIUM	510	493	477	455	434	414	395	340	274
	LOW	442	429	415	401	387	367	347	297	231
DCL14	HIGH	590	569	548	532	515	501	486	472	457
	MEDIUM	546	528	510	491	472	446	421	367	288
	LOW	510	493	477	455	434	414	395	340	274

## FAN PERFORMANCE DATA - 4 ROW COILS (METRIC UNITS)

MODEL NUMBER	BLOWER MOTOR SPEED	LITERS PER SECOND @ EXTERNAL STATIC PRESSURE (Pascal)								
		0.0	12.5	25	37.5	50	62.5	75	100	125
DCL02	HIGH	133	127	116	104	94	85	83	76	67
	MEDIUM	119	113	105	97	88	80	77	71	66
	LOW	101	97	91	85	78	71	35	-	-
DCL03	HIGH	163	156	146	137	123	109	99	86	75
	MEDIUM	153	146	135	123	111	99	50	-	-
	LOW	140	134	124	113	101	90	45	-	-
DCL04	HIGH	179	170	160	151	137	123	111	94	84
	MEDIUM	163	156	146	137	123	109	99	45	-
	LOW	153	146	135	123	111	99	50	-	-
DCL06	HIGH	299	283	263	243	206	170	151	125	95
	MEDIUM	279	270	244	219	186	154	136	101	78
	LOW	227	213	190	166	138	109	109	104	70
DCL08	HIGH	349	330	306	282	242	201	200	191	135
	MEDIUM	299	283	263	243	206	170	151	125	96
	LOW	279	270	244	219	186	154	136	101	76
DCL10	HIGH	493	477	455	434	414	395	367	307	241
	MEDIUM	429	415	401	387	367	347	322	264	208
	LOW	394	381	366	350	329	309	287	238	190
DCL12	HIGH	528	510	491	472	446	421	394	328	253
	MEDIUM	493	477	455	434	414	395	367	307	227
	LOW	429	415	401	387	367	347	322	264	203
DCL14	HIGH	569	548	532	515	501	486	479	464	430
	MEDIUM	528	510	491	472	446	421	394	328	255
	LOW	493	477	455	434	414	395	367	307	238

**NOTE:** 1. Values include losses for dry coil and filters.  
 2. Airflow values are in Liters per second.

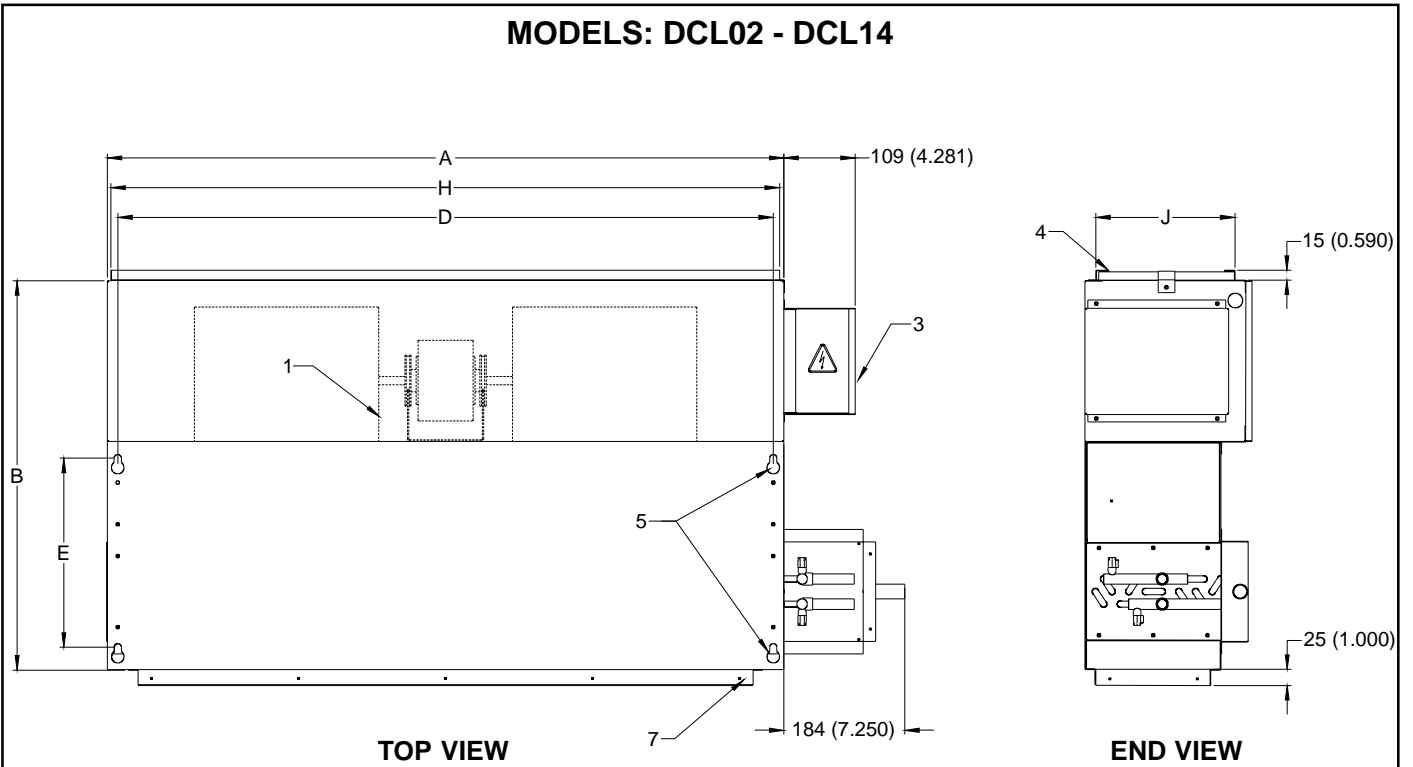
## SOUND POWER LEVEL (dB re 10<sup>-12</sup> Watts)

AT 0.15 ESP

MODEL NUMBER	BLOWER MOTOR SPEED	OCTAVE BAND CENTER FREQUENCY - Hz						
		125	250	500	1000	2000	4000	8000
DCL02	HIGH	58	53	49	47	45	40	33
	MEDIUM	52	45	37	36	35	29	26
	LOW	50	45	35	33	31	29	23
DCL03	HIGH	60	55	50	48	47	42	35
	MEDIUM	58	53	49	47	45	40	33
	LOW	52	45	37	36	35	29	26
DCL04	HIGH	63	57	54	49	50	43	37
	MEDIUM	60	55	50	48	47	42	35
	LOW	58	53	49	47	45	40	33
DCL06	HIGH	68	62	57	53	54	49	41
	MEDIUM	67	59	55	51	53	47	40
	LOW	66	56	53	49	51	45	39
DCL08	HIGH	69	63	60	56	56	52	45
	MEDIUM	68	62	57	53	54	49	41
	LOW	67	59	55	51	53	47	40
DCL10	HIGH	70	68	65	64	62	60	54
	MEDIUM	69	67	63	62	61	58	53
	LOW	67	66	62	61	59	57	51
DCL12	HIGH	71	69	66	65	64	62	56
	MEDIUM	70	68	65	64	62	60	54
	LOW	69	67	63	62	61	58	53
DCL14	HIGH	72	71	67	66	66	63	58
	MEDIUM	71	69	66	65	64	62	56
	LOW	70	68	65	64	62	60	54

# DIMENSIONS

**MODELS: DCL02 - DCL14**



**LEGEND:**

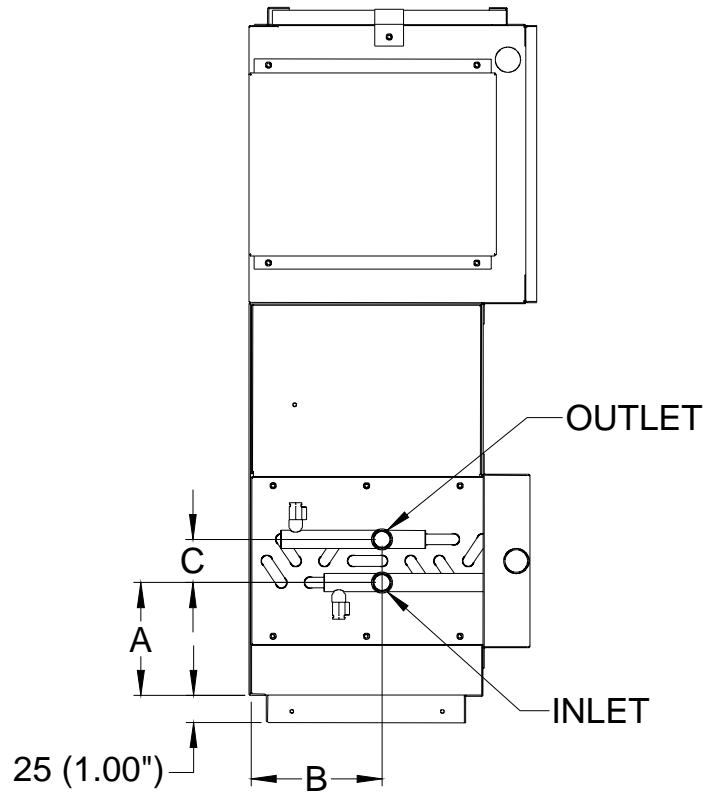
- 1. Blower & motor assembly
- 2. Cooling coil
- 3. Control box
- 4. Filter rack
- 5. Mounting holes
- 6. Drain pan
- 7. Duct connector

**NOTE:** All dimensions are in mm (dimensions in brackets are in inches).

MODEL	DIMENSIONS									NO. OF MOTORS	NO. OF BLOWERS
	A	B	C	D	E	F	G	H	J		
DCL02	622 (24.5)	591 (23.3)	254 (10)	591 (23.25)	287 (11.3)	529 (20.8)	176 (6.93)	611 (24.04)	212 (8.33)	1	1
DCL03	622 (24.5)	591 (23.3)	254 (10)	591 (23.25)	287 (11.3)	529 (20.8)	176 (6.93)	611 (24.04)	212 (8.33)	1	1
DCL04	622 (24.5)	591 (23.3)	254 (10)	591 (23.25)	287 (11.3)	529 (20.8)	176 (6.93)	611 (24.04)	212 (8.33)	1	1
DCL06	1029 (40.5)	591 (23.3)	254 (10)	997 (39.25)	287 (11.3)	934 (36.8)	176 (6.93)	1017 (40.04)	212 (8.33)	1	2
DCL08	1029 (40.5)	591 (23.3)	254 (10)	997 (39.25)	287 (11.3)	934 (36.8)	176 (6.93)	1017 (40.04)	212 (8.33)	1	2
DCL10	1359 (53.5)	652 (25.7)	305 (12)	1327 (52.25)	298 (11.75)	1265 (49.8)	227 (8.93)	1347 (53.04)	262 (10.33)	1	2
DCL12	1359 (53.5)	652 (25.7)	305 (12)	1327 (52.25)	298 (11.75)	1265 (49.8)	227 (8.93)	1347 (53.04)	262 (10.33)	1	2
DCL14	1359 (53.5)	652 (25.7)	305 (12)	1327 (52.25)	298 (11.75)	1265 (49.8)	227 (8.93)	1347 (53.04)	262 (10.33)	1	2

# DIMENSIONAL DATA - COIL CONNECTIONS

## CHILLED WATER COIL



### DIMENSIONS

MODEL	3 ROW COIL			4 ROW COIL		
	A	B	C	A	B	C
DCL02	100 (3.91)	118 (4.63)	38 (1.5)	90 (3.53)	118 (4.63)	57 (2.25)
DCL03	100 (3.91)	118 (4.63)	38 (1.5)	90 (3.53)	118 (4.63)	57 (2.25)
DCL04	100 (3.91)	118 (4.63)	38 (1.5)	90 (3.53)	118 (4.63)	57 (2.25)
DCL06	100 (3.91)	118 (4.63)	38 (1.5)	90 (3.53)	118 (4.63)	57 (2.25)
DCL08	100 (3.91)	118 (4.63)	38 (1.5)	90 (3.53)	118 (4.63)	57 (2.25)
DCL10	100 (3.91)	143 (5.61)	38 (1.5)	90 (3.53)	130 (5.11)	57 (2.25)
DCL12	100 (3.91)	143 (5.61)	38 (1.5)	90 (3.53)	130 (5.11)	57 (2.25)
DCL14	100 (3.91)	143 (5.61)	38 (1.5)	90 (3.53)	130 (5.11)	57 (2.25)

**NOTE:** All dimensions are in mm (dimensions in brackets are in inches).



# HEATER ARRANGEMENTS

HEATER BOX

SLIDING FRAME WITH HEATER

**DIMENSIONS - HEATER BOX**

MODEL	DIMENSIONS		
	A	B	C
DCL 02/03/04	685 (27)	180 (7.1)	223 (8.8)
DCL 06/08	939 (37)	180 (7.1)	223 (8.8)
DCL 10/12/14	1269 (50)	231 (9.1)	150 (5.9)

**NOTE:** All dimensions are in mm (dimensions in brackets are in inches).

# VALVE PACKAGES

**VALVE PACKAGE 3-D (for 2-pipe)**

- ① Two gate shut off valves
- ② One balancing valve
- ③ One 3-way motor valve

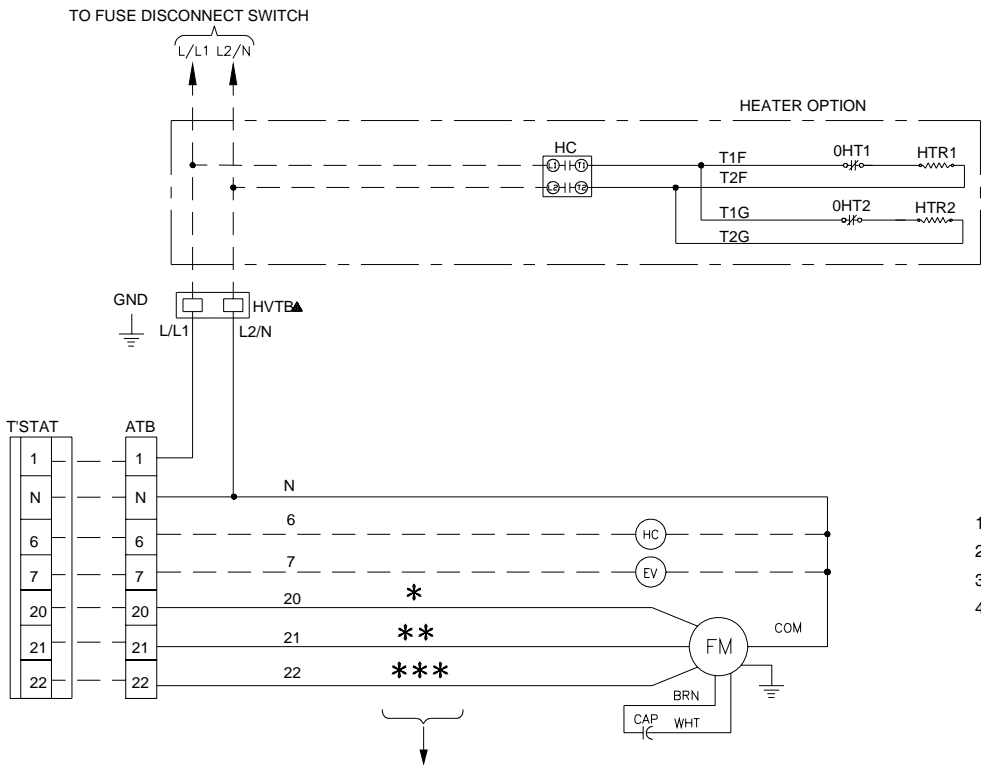
  

- ① Two gate valves
- ② One balancing valve
- ③ One 3-way motor valve

# TYPICAL SCHEMATIC WIRING DIAGRAM

## HEAT/COOL MODELS - ELECTRIC HEATER

(POWER SUPPLY: 220/240V - 1Ph - 50Hz)



LEGEND	
ATB	AUXILIARY TERMINAL BLOCK
CAP	CAPACITOR
EV	ELECTRIC VALVE
FM	FAN MOTOR
GND	LUG GROUND
HC	HEATER CONTACTOR
HTR	HEATER
HVTB	HIGH VOLTAGE TERMINAL BLOCK
L/L1	LINE OR LINE 1
L2/N	LINE 2 OR NEUTRAL
OHT	OVER HEAT THERMOSTAT
---	FIELD WIRING
—	FACTORY WIRING

### NOTES

1. MOTORS THERMALLY PROTECTED.
2. USE COPPER CONDUCTOR WIRES ONLY.
3. ▲ HVTB IS NOT REQUIRED FOR HEATER MODELS.
4. USE HEATER AS PER OPTION REQUIRED. IF EV & HEATERS ARE FACTORY INSTALLED, PLEASE READ DASHED LINE AS CONTINUOUS LINE.

Refer to table below for Speed Connections.

FM SPEED CONNECTIONS							
SPEED	HI	MED-HI	MED	LOW	LOWEST	COM	APPLICABLE FREQUENCY IN HERTZ
WIRE COLOR	BLK	BLU	RED	YEL	ORG	WHT	
<b>MODEL</b>							
DCL 02	—	—	***	**	*	—	50
DCL 03	—	***	**	*	—	—	50
DCL 04	***	**	*	—	—	—	50
DCL 06	—	—	***	**	*	—	50
DCL 08	—	***	**	*	—	—	50
DCL 10	—	—	***	**	*	—	50
DCL 12	—	—	***	**	*	—	50
DCL 14	—	***	**	*	—	—	50

## INSTALLATION

The complete shipment should be inspected for damage. Any damage, visible or concealed, should be reported immediately to the delivery man or driver and noted on the shipping invoice.

Place unit in position and make sure that unit is level. This is important to assure proper drainage and operation. Slots provided in the mounting brackets should be used for installing the units.

## ELECTRICAL

Please ensure power supply (V-Ph-Hz) to the unit is as per unit nameplate requirements.

**Caution:** Operation of the unit on improper power supply will result in damage to the unit.

**Warning:** Before installation or servicing, always TURN OFF all power to the unit. There may be more than one disconnect switch. Ensure all of them are turned off.

## GROUND & POWER WIRES

Connect power wires as per wiring diagram. Connect ground wire to the ground lug inside the control box.

## MAINTENANCE

### COIL

Coil may be cleaned by removing and brushing between fins with a stiff wire brush. Brushing should be followed by cleaning with vacuum cleaner. The coil may also be cleaned by using a high pressure air, if compressed air source is available. It should be pointed out that if air filters are used and periodically cleaned, the coils will not be clogged up prematurely.

### DRAIN PIPE

Drain pipe should be checked before summer operation of unit. If it is clogged, steps should be taken to clear the debris so that condensate will flow out easily. A standard pipe cleaner for 1/2" ID pipe may be used. Periodic checks of the drain pipe should be taken during summer operation, as there is a possibility of it becoming clogged with dirt.

### FILTER CLEANING

Remove access panel, slide filter out of filter rack, and clean as follows:

Tap filter on solid surface to dislodge heavy particles. Wash under stream of hot water. If filter has been put to exceptional service, a mild solution of Sal-Soda, Tri-Sodium Phosphate or any other commercial solvent can be used. Set filter on end with slots in frame down, which allows it to drain. Filters should dry thoroughly before reuse.

### REPLACEMENT PARTS

When writing for replacement parts, refer to model number and serial number on the nameplate of the unit.



from  **Zamil**

In 1989, Zamil Air Conditioners (ZAC), one of the unit companies of Zamil Industrial Investment Company and the leading Middle East manufacturer of air conditioning systems, introduced its international brand – Cooline, to the growing world market. Today, Cooline supplies air conditioners to more than 55 countries worldwide, with major markets in GCC, Middle East, North Africa, Europe, Asia and the USA. In addition to the Head Office in Saudi Arabia, five regional offices handles Cooline's overall operations including more than 25 international distributors.

All ZAC Products are available under the Cooline brand. Cooline Products include an array of central air conditioners for residential, commercial and industrial use, including: concealed units up to 5 tons, ducted splits up to 30 tons, packaged units up to 70 tons, single and double skin air handling units up to 53,000 CFM and air & water chillers up to 440 tons cooling capacity. New Products include High Efficiency Ratio (EER) units, which comply with the more demanding codes of the USA and heat pump units with increased overall Coefficient of Performance (COP).

Cooline is the first brand from the Middle East to receive Eurovent, a capacity/performance certification that has been made mandatory in Europe and is fast becoming a requirement in all regions. With the addition of the state of the art testing facility, Ikhtabar, which is 3rd party built by Intertek Testing Services (ITS), and certified by Electrical Testing Labs (ETL), Cooline is the only brand in the Middle East capable of guaranteeing product performance in compliance with local and international standards. It's no surprise that in 2003, Cooline received the Best GCC Brand of the Decade Award.

For more information, please log on to [www.cooline.com](http://www.cooline.com)



P. O. Box 14440, Dammam 31424, K.S.A. Tel.: (+966-3) 847 3333 Fax: (+966-3) 847 1904  
Toll Free : 800 304 1000 (K.S.A. Only)  
e-mail: [info@zamilac.com](mailto:info@zamilac.com)  
[www.zamilac.com](http://www.zamilac.com)

FU-C16-07/09