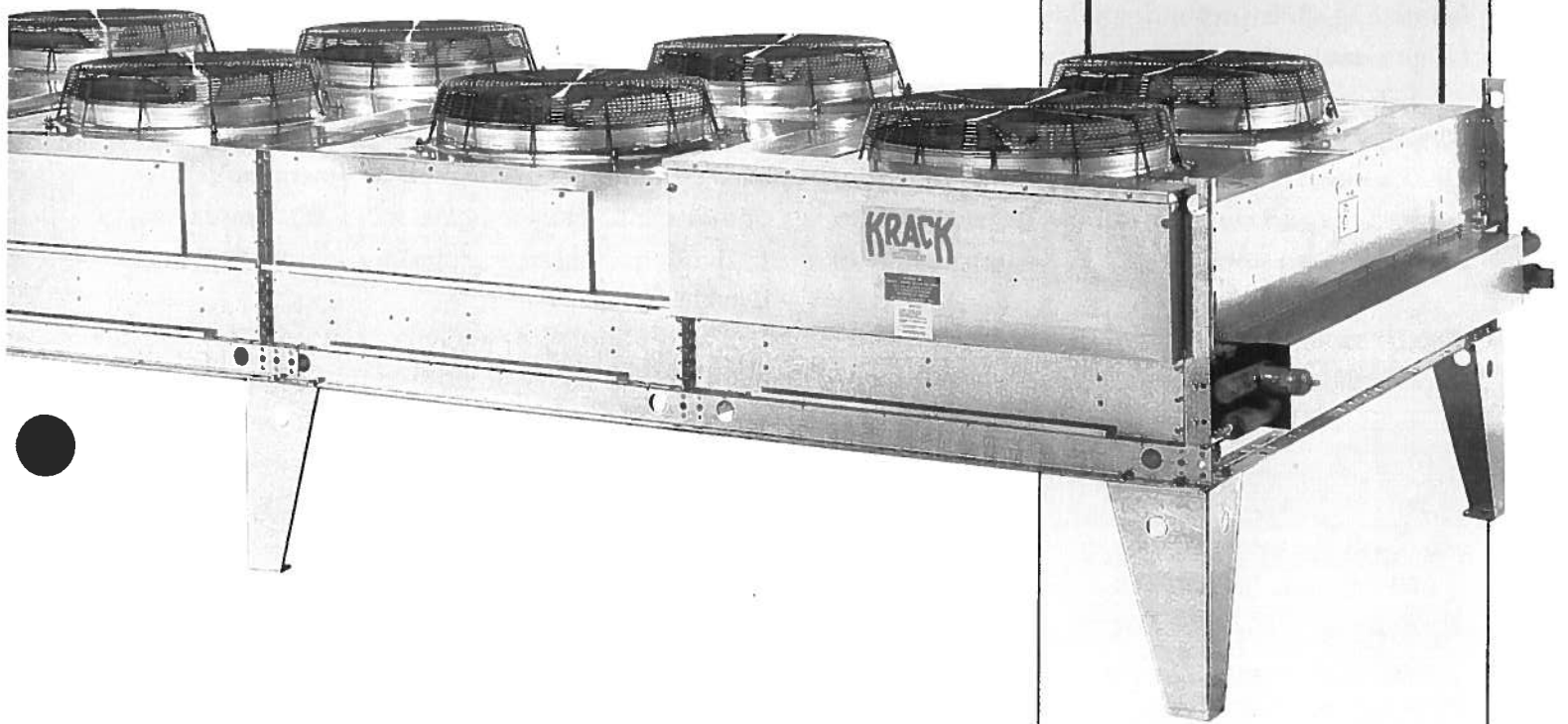




TECHNICAL DATA

FC Series Direct Drive Fluid Coolers



8, 10, 12 Fins/Inch in Vertical
& Horizontal Air Discharge Models

Fan Cycling
Controls

UL .UL Listed

KRACK

The FC Series: tough, versatile fluid coolers with the quality and performance the industry has come to expect from Krack Corporation.

Chances are the rooftop fluid cooler you need will have to operate under some of the toughest conditions imaginable. The rugged construction features of Krack's FC Series are up to the task.

Modular Design

Arranged for vertical or horizontal air discharge. Multi-fan units compartmented to allow individual fan cycling while preventing off-fan "windmilling". Large clean-out access doors standard.

Corrosion Resistant

All capacity models employ mill galvanized steel fan sections and coil side baffles. Legs are heavy mill galvanized steel.

High Efficiency Coil

Copper tubes are mechanically expanded into corrugated, full collared, alluminum fins spaced 8, 10 or 12 per inch. Coils are pressure tested under water with 400psig air. When ordering with ODS connections, the coils are evacuated to 500 microns, then shipped with pressurized dry nitrogen.

Optional fin materials are cooper and polyester coated aluminum. Dipped heresite or epoxy coatings are available.

Computerized Circuiting

The Krack engineering staff is always available to help in selecting the performance of every application. Our computerized coil selection program is specially designed to minimize the internal cooler volume for less cost and increased performance. Plus, every Krack fluid cooler will be custom circuited to precisely meet your application needs.

Direct Driven Propeller Fans

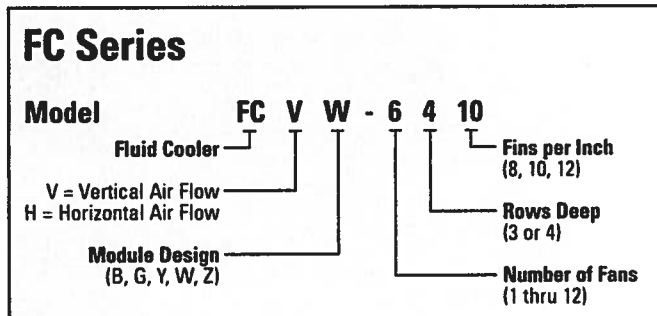
Quiet multi-bladed propeller fans provide uniform air distribution thru the coil. Venturi fans orifices optimize efficiency.

Quiet by Design

Unlike traditional air-cooled condensers, fan and coil vibration are isolated from the cabinet, so they are not transmitted to the unit frame and building supports.

Weather Resistant Fan Motors

Outdoor condenser-type motors designed with ball bearings; inherent overheat protection in each phase; shaft slingers; enclosure, hardware, and lubrication for all weather conditions. Each motor lead is wired to terminals in an electrical enclosure. An optional feature is available with totally enclosed motors on the Y & Z models.



Please Specify:

- Model number
- Electrical characteristics
- Total heat rejection
- Ambient temperature
- Entering fluid temperature
- Fluid type & concentration
- Fluid GPM required

Control Panel Arrangement

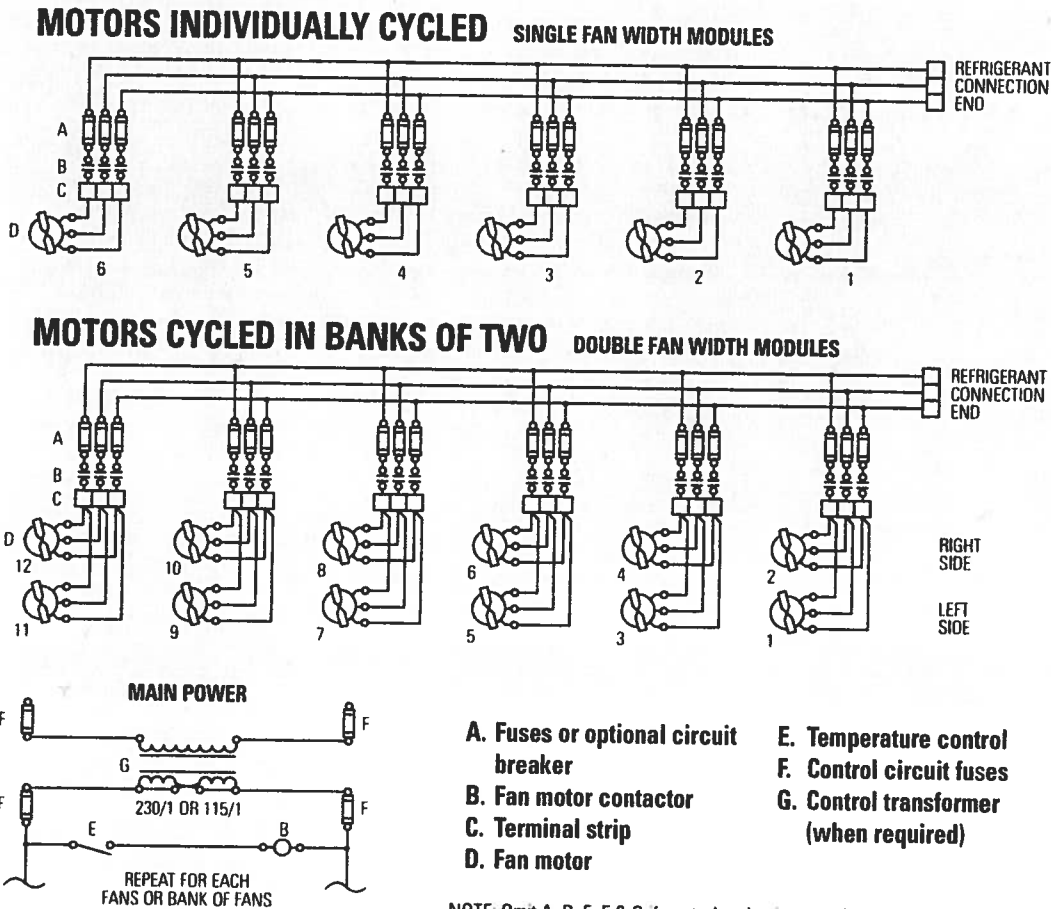
Control Panel

- Located on leaving fluid end of unit.
- Weather resistant enclosure with terminal strip for individual motor leads.
- Branch circuit protection. Each motor (G, Y) or bank of two motors (W, Z) are protected using fuses. Individual motor circuit breakers are optional.
- Motor contactors are provided to operate individual motor (B, G, Y) or bank of two motors (W, Z). Contactors are 230/1/60 pilot voltage. 115/1/60 pilot voltage optional.

- Control transformer is provided if main power is 460/3/60 or 115/1/60 control voltage is specified.
- Main power disconnect is not included.

Fluid Temperature Control. Solid state controllers cycle all fans, except the fan(s) on the control panel end, in response to the leaving fluid temperature. A bulb well in the leaving fluid header accepts the temperature sensor. The fans sequence around an adjustable set point. The leaving fluid temperature range is 30°F to 130°F with a 1° to 30°F differential range. Cycling available on B 2 & 3 fan, G,Y 2 to 6 fan or W,Z 4 to 12 fans units.

Typical Wiring Diagram THREE PHASE PILOT CIRCUIT ELECTRICAL CONTROL





SPECIFICATIONS FOR 24" FANS

FC SERIES

FCV - VERTICAL UP AIR DISCHARGE FCH - HORIZONTAL AIR DISCHARGE

Model No. Fans Row Depth Fins/Inch	Qty Fans	Rows Deep	Air Flow CFM	Coil Volume (gal)	Shipping Weight (lbs)
B-1210	1	2	6750	1.5	120
B-1310	1	3	6400	2.0	150
B-1410	1	4	6000	2.5	180
B-2310	2	3	12800	3.9	300
B-2410	2	4	12000	4.9	360
B-3310	3	3	18200	5.8	450
B-3410	3	4	18000	7.5	540

MODEL LETTER CODE

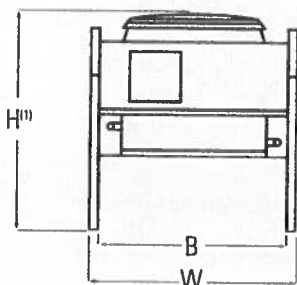
ONE FAN WIDE	HP	RPM	FAN DIA.	SURFACE	FACE TUBES
B	1/2	1140	24"	3/8"	32

CONNECTION SIZES

GPM	Inlet / Outlet (inches)	
	ODS	MPT
10 - 15	1-3/8	1-1/4
16 - 35	1-5/8	1-1/2
36 - 75	2-1/8	2
76 - 100	2-5/8	2-1/2

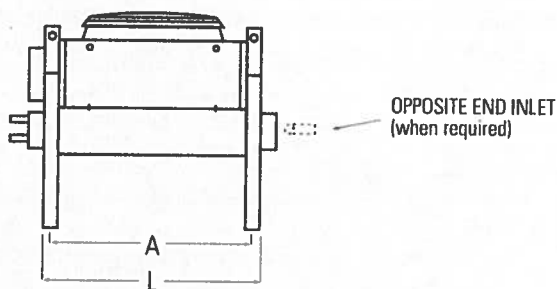
HEADER END VIEW

B MODEL

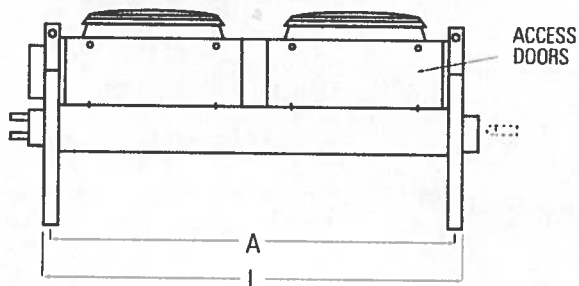


SIDE VIEWS

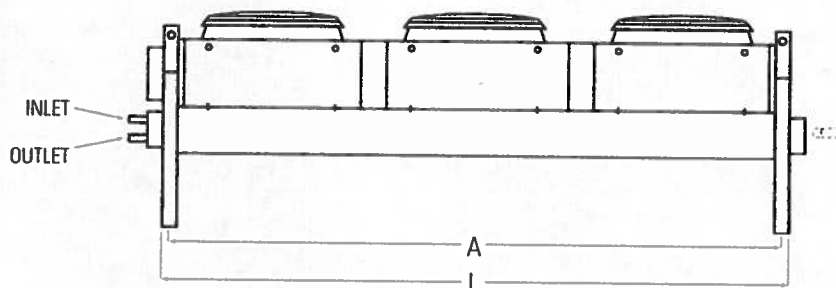
1 FAN UNIT



2 FAN UNIT



3 FAN UNIT



Leg anchor holes are 3/4" diameter.

Opposite end connections shown in dotted line

MODEL ⁽¹⁾	DIMENSIONAL DATA					ELECTRICAL DATA				
	INCHES					FAN MOTOR TOTAL RATED FULL LOAD AMPS ⁽²⁾				
	L	W	H	A	B	208-1	230-1	208-3	230-3	460-3
B-1	39	45-3/4	40-11/16	36	43	3.2	3.0	2.8	2.6	1.3
B-2	75	45-3/4	40-11/16	72	43	6.4	6.0	5.6	5.2	2.6
B-3	111	45-3/4	40-11/16	108	43	9.6	9.0	8.4	7.8	3.9

(1) INCLUDES STANDARD 18" LEGS.

(2) MINIMUM UNIT CIRCUIT AMPS = 1.25 X FLA OF ONE MOTOR + FLA OF ALL REMAINING MOTORS.

(2) MINIMUM UNIT OVERLOAD PROTECTION = 2.25 X FLA OF ONE MOTOR + FLA OF ALL REMAINING MOTORS.



SPECIFICATIONS FOR 30" FANS

FCU SERIES

FCV - VERTICAL UP AIR DISCHARGE FCH - HORIZONTAL AIR DISCHARGE

Unit Model	CFM	Unit Model	CFM	Coil Vol. (gal)	Shipping Wt (lbs)	Unit Model	CFM	Unit Model	CFM	Coil Vol. (gal)	Shipping Wt (lbs)
ONE FAN WIDE						TWO FANS WIDE					
G-2310	21950	Y-2310	28700	12.7	850	W-4310	43900	Z-4310	57400	25.4	1800
G-2312	21600	Y-2312	28225	12.7	870	W-4312	43200	Z-4312	56450	25.4	1840
G-2408	20920	Y-2408	27350	15.3	1030	W-4408	41840	Z-4408	54700	30.6	2060
G-2410	20250	Y-2410	26500	15.3	1050	W-4410	40500	Z-4410	53000	30.6	2100
G-2412	19775	Y-2412	25825	15.3	1080	W-4412	39550	Z-4412	51650	30.6	2160
G-3310	32900	Y-3310	43000	16.3	1200	W-6310	65800	Z-6310	86000	32.6	2280
G-3312	32400	Y-3312	42325	16.3	1230	W-6312	64800	Z-6312	84650	32.6	2340
G-3408	31400	Y-3408	41000	20.1	1470	W-6408	62800	Z-6408	82000	40.2	2690
G-3410	30375	Y-3410	39750	20.1	1500	W-6410	60750	Z-6410	79500	40.2	2750
G-3412	29650	Y-3412	38750	20.1	1550	W-6412	59300	Z-6412	77500	40.2	2840
G-4310	43875	Y-4310	57375	19.9	1800	W-8310	87750	Z-8310	114750	39.8	2950
G-4312	43200	Y-4312	56425	19.9	1840	W-8312	86400	Z-8312	112850	39.8	3030
G-4408	41850	Y-4408	54675	25.0	2110	W-8408	83700	Z-8408	109350	50.0	3420
G-4410	40500	Y-4410	53000	25.0	2150	W-8410	81000	Z-8410	106000	50.0	3500
G-4412	39500	Y-4412	51650	25.0	2210	W-8412	79000	Z-8412	103300	50.0	3620
G-5310	57000	Y-5310	71500	23.6	2250	W-10310	114000	Z-10310	143000	47.2	3700
G-5312	55000	Y-5312	70500	23.6	2300	W-10312	110000	Z-10312	141000	47.2	3800
G-5408	53150	Y-5408	68350	29.8	2625	W-10408	106300	Z-10408	136700	59.6	4300
G-5410	52750	Y-5410	66225	29.8	2675	W-10410	105500	Z-10410	132450	59.6	4400
G-5412	52325	Y-5412	64550	29.8	2750	W-10412	104650	Z-10412	129100	59.6	4550
G-6310	68400	Y-6310	85800	27.2	2700	W-12310	136800	Z-12310	171600	54.4	4350
G-6312	66000	Y-6312	84600	27.2	2760	W-12312	132000	Z-12312	169200	54.4	4470
G-6408	63800	Y-6408	82025	34.6	3115	W-12408	127600	Z-12408	164050	69.2	5130
G-6410	63300	Y-6410	79475	34.6	3175	W-12410	126600	Z-12410	158950	69.2	5250
G-6412	62775	Y-6412	77450	34.6	3260	W-12412	125550	Z-12412	154900	69.2	5430

ONE FAN WIDE LETTER CODE				
ONE FAN WIDE	HP	RPM	FAN DIA.	TUBE DIA.
G	1	850	30	1/2
Y	1.5	1140	30	1/2

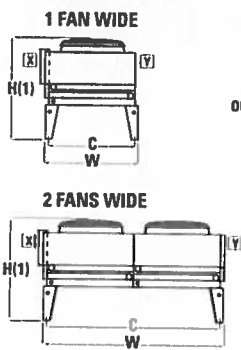
TWO FANS WIDE LETTER CODE				
TWO FANS WIDE	HP	RPM	FAN DIA.	TUBE DIA.
W	1	850	30	1/2
Z	1.5	1140	30	1/2

PHYSICAL DATA 30" FANS

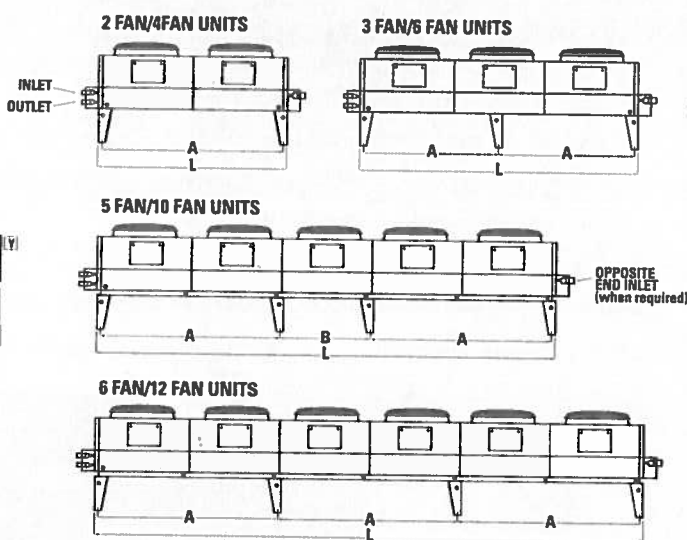


FC SERIES

HEADER END VIEWS



SIDE VIEWS



CONNECTION SIZES

G & Y MODELS

GPM	No. & SIZE (ODS or MPT)
40-60	(1) 2-1/8 or 2
61-100	(1) 2-5/8 or 2-1/2
101-160	(1) 3-1/8 or 3

W & Z MODELS

GPM	No. & SIZE (ODS or MPT)
100-200	(2) 2-5/8 or 2-1/2
201-300	(2) 3-1/8 or 3
301-400	(4) 2-5/8 or 2-1/2
401-500	(4) 3-1/8 or 3

DIMENSIONAL DATA

(INCHES)

ELECTRICAL DATA⁽²⁾⁽³⁾

FAN MOTORS 1 HP 850 RPM 3PH 60Hz
TOTAL RATED FULL LOAD AMPS

MODEL	OVERALL			BOLT HOLE CENTERS			TOTAL RATED FULL LOAD AMPS				
	L	W	H	A	B	C	208	230	460	575	380/50
G-2	112	48	58	108	—	44	8.8	8.0	4.0	3.6	4.0
G-3	166	48	58	81	—	44	13.2	12.0	6.0	5.4	6.0
G-4	220	48	58	108	—	44	17.6	16.0	8.0	7.2	8.0
G-5	274	48	58	108	54	44	22.0	20.0	10.0	9.0	10.0
G-6	328	48	58	108	—	44	26.4	24.0	12.0	10.8	12.0
W-4	112	96	58	108	—	92	17.6	16.0	8.0	7.2	8.0
W-6	166	96	58	81	—	92	26.4	24.0	12.0	10.8	12.0
W-8	220	96	58	108	—	92	35.2	32.0	16.0	14.4	16.0
W-10	274	96	58	108	54	92	44.0	40.0	20.0	18.0	20.0
W-12	328	96	58	108	—	92	52.8	48.0	24.0	21.6	24.0

DIMENSIONAL DATA

(INCHES)

ELECTRICAL DATA⁽²⁾⁽³⁾

FAN MOTORS 1-1/2 HP 1140 RPM 3PH 60Hz
TOTAL RATED FULL LOAD AMPS

MODEL	OVERALL			BOLT HOLE CENTERS			TOTAL RATED FULL LOAD AMPS		
	L	W	H	A	B	C	208/230	460	380/50
Y-2	112	48	58	108	—	44	14.0	7.0	7.0
Y-3	166	48	58	81	—	44	21.0	10.5	10.5
Y-4	220	48	58	108	—	44	28.0	14.0	14.0
Y-5	274	48	58	108	54	44	35.0	17.5	17.5
Y-6	328	48	58	108	—	44	42.0	21.0	21.0
Z-4	112	96	58	108	—	92	28.0	14.0	14.0
Z-6	166	96	58	81	—	92	42.0	21.0	21.0
Z-8	220	96	58	108	—	92	56.0	28.0	28.0
Z-10	274	96	58	108	54	92	70.0	35.0	35.0
Z-12	328	96	58	108	—	92	84.0	42.0	42.0

(1) H dimension includes 22", field assembled legs. Add 20" for optional 42" legs.

(2) Min unit circuit amps = 1.25 x FLA of one motor + FLA of remaining motors.

(3) Min unit overload protection = 2.25 x FLA of one motor + FLA of remaining motors.

H (horiz. air disch.) dimensions, fanrol location, and unit support-contact factory.

⊗ Standard fanrol location. ⊙ Optional fanrol location-must be specified.

USE CERTIFIED DRAWINGS FOR CONSTRUCTION