

FLCH-6S SERIES, A.1

LARGE-SIZED MODULAR CHILLER

STANDARD SERIES, AIR COOLED CONDENSER

SCROLL COMPRESSORS

48-110 TR 

 **PREMIUM**
SERIES

The new FLCH-6S: FriconUSA Large-Sized Chiller, 6 Series Standard, air cooled condenser, is designed to meet most of the demands of medium to large range capacity for air conditioning. The quality, high efficiency and low cost of this product, offers an excellent alternative in the market.

The most common applications are for air conditioning in large-sized buildings such as offices, schools, hotels, shopping centers, and supermarkets amongst others.

Standard ambient operating temperature range:
+110°F (+43.3°C) to +40°F (4.4°C)

Extended ambient operating temperature range:
+125°F (+51.7°C) to -20°F (-28.9°C)*

*See optional packages.

Application / leaving fluid temperature range:
+56°F (+13.3°C) to +18°F (-8.0°C)

STANDARD FEATURES & BENEFITS:

- Uneven tandem Bitzer scroll compressor for better capacity control in most cases.
- Aluminum frame with galvanized steel reinforcement, high efficiency condenser with strong structure and micro-channel coil aluminum, less weight and size; reduces transport, assembly and construction costs.
- Eco-Friendly; Air cooled Micro-channel condenser coil with reduced internal volume requires between 40% to 60% less refrigerant charge and results in a significant reduction of the charge necessary for normal or flooded operations.
- Wide range of applications for water or glycol.
- Quiet, high efficiency, external rotor motor, two speed, AC type axial fans for a better operation.
- Built-in, Direct Expansion (DX) brazed plate evaporator, single or dual circuit according to the model, with reduced internal volume requires less refrigerant charge.
- Electronic expansion valve, liquid sight glass and solenoid valve.
- Built-in flow switch.
- Liquid drier with replaceable core and inlet ball valve.
- Flexible joint on discharge line.
- Refrigerant: R-410a
- Factory pre-charged and individually tested.
- UL 508A listed built-in electrical control panel.
- Compressor and fans circuit breakers.
- Voltage and phase-loss monitor with protection module for each compressor.
- Control: 208-230V / 1PH / 60HZ



AIR CONDITIONING (HVAC) FOR
BUILDINGS, SUPERMARKETS, ETC.

STANDARD FEATURES & BENEFITS (CONT.):

- Power supply voltage 460V / 3PH / 60HZ with single point power connection.
- Electronic Control System; compressor(s) and condenser fans operational management: alarms, measurement of pressure and temperature variables, 132x64 LCD backlit built-in display with 6-button keypad. Alarm management: 3 alarms for compressor(s) (overload, high/low pressure) and 1 overload alarm for condenser fans.
- Fixed high and low pressure controls on each circuit.
- BMS (Building Management System): ModBus protocol for supervisor or HMI (Human Machine Interface).
- 1-year warranty.

STANDARD OPTIONS:

- Condenser coil with E-Coating for greater resistance to corrosion.
- Protective mesh for the condenser.
- EC type fans with variable speed (for 575V a VFD is used).
- Evaporator option:
 - Remote evaporator
- Built-In, insulated Hydronic Package with TEFC type motors:
 - 1 recirculation pump
 - 1 recirculation pump with VFD
 - 2 recirculation pumps
 - 2 recirculation pumps with VFD
- Different power supply voltage.



3 or 4 fan unit



5 or 6 fan unit

ADDITIONAL OPTIONS:

- VRF (Variable Refrigerant Flow) package to maximize the efficiency and capacity adaptability to the demand:
 - VRF-II*: VFD (Variable Frequency Drive). Infinite capacity control on the lead compressor in each circuit (60~125%).
**Certain limitations apply.*
- HGB (Hot Gas Bypass) package for adjustable capacity reduction (10~100%):
 - HGB-I: PWM (Pulse Wide Modulation).
 - HGB-II: Continuous Modulation with electronic hot gas valve.
- SECC (Semi-Enclosed Compressor Cabin) package for compressor protection:
 - SECC-I: Galvanized, powder coated, acoustically semi-insulated and weatherproof compressor cabin.
- FECC (Fully Enclosed Compressor Cabin)* package for better soundproofing:
 - FECC-I: Fully enclosed metal compressor cabin.
 - FECC-II: Same as FECC-I with internal convoluted acoustic foam panel lining.
**SECC required*
- Pivoting fan assembly for easy maintenance.
- Refrigerant and oil evacuated for non-hazardous shipping.
- LAOP (Low Ambient Operation Package) required for operation below +40°F:
 - LAOP-I: +110°F (+43.3°C) to +10°F (-12.2°C), Includes: split condenser with variable speed fan on the first fan section and electrical antifreeze heater on the evaporator.
 - LAOP-II: +110°F (+43.3°C) to -20°F (-28.9°C), Includes: same as LAOP-I plus liquid receiver and flooded condenser with head pressure control valve.
 - LAOP-III*: +110°F (+43.3°C) to -35°F (-37.2°C), Includes: same as LAOP-II plus insulated liquid receiver with electric heater, thermally insulated compressor cabin and control panel with ventilated heating.
**Requires FECC-II (Fully Enclosed Compressor Cabin) package.*
- HAOP (High Ambient Operation Package) required for operation above +110°F:
 - HAOP-I: +125°F (+51.7°C) to +40°F (4.4°C), Includes: control panel air extractor fan and filter for air intake.
- MDS (Main Disconnect Switch)
- Electronic Control System:
 - BACnet Communication board.
 - Remote LCD display.
 - Local or remote touch screen display.
 - Energy Management Module.
 - CHSM (Chiller System Manager) controls the sequence between multiple sets.
- Extended 5-year compressor warranty (U.S. only).

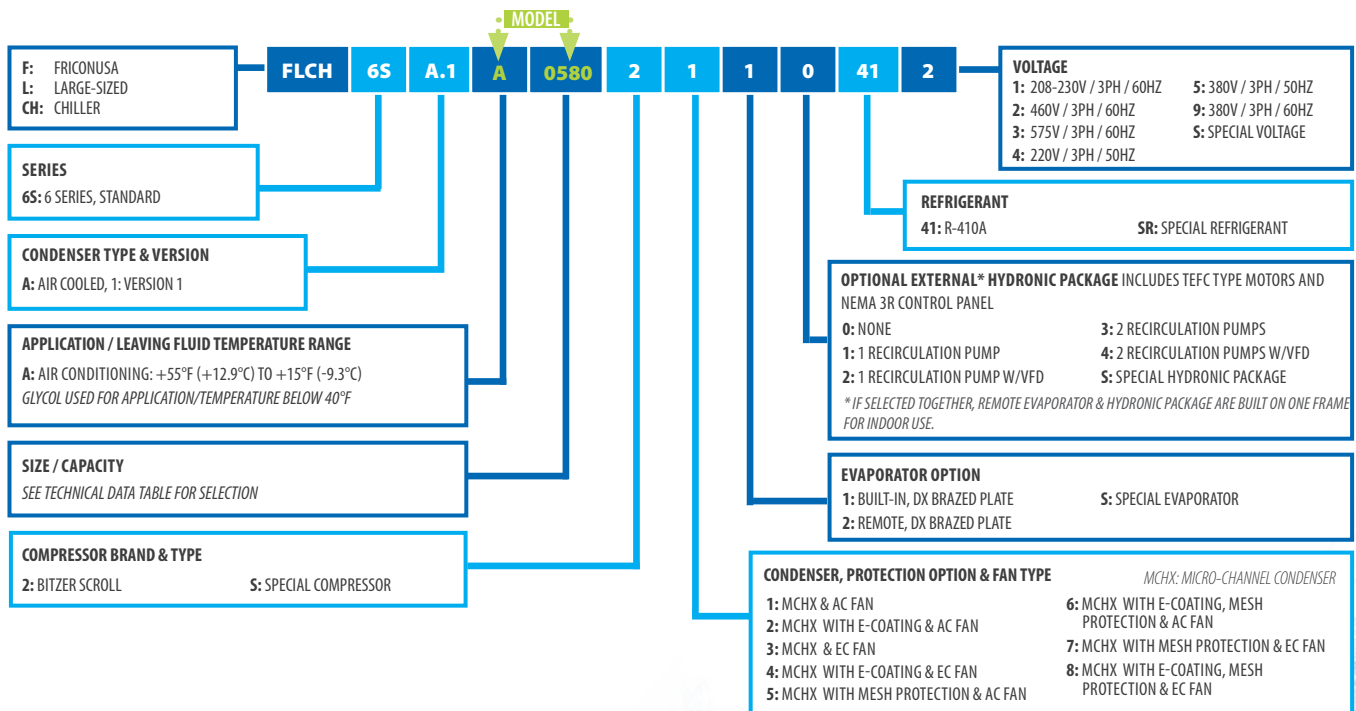
REFERENCE

- 1. Compressor(s)
- 2. Micro-channel condenser
- 3. Fans (optional pivoting assembly)
- 4. Brazed plate evaporator
- 5. Electrical control panels
- 6. Electronic Control System
- 7. Full enclosure (optional)



SUBJECT TO CHANGE ACCORDING TO ACCESSORIES/OPTIONS. PLEASE CONSULT THE FACTORY FOR SPECIFIC INFORMATION.

NOMENCLATURE





TECHNICAL DATA - APPLICATION / LEAVING FLUID TEMPERATURE RANGE

R-410a

A: AIR CONDITIONING: +45°F (+7.2°C) TO +10°F (-12.0°C)																																				
MODEL		COMPRESSORS BITZER SCROLL					FAN		CAPACITIES IN TR @ 95°F AMBIENT R410A LEAVING FLUID TEMPERATURE								ELECTRICAL DATA 60HZ						MECHANICAL DATA					FRAME TYPE								
									WATER				GLYCOL 20%		GLYCOL 30%		230 VOLT		460 VOLT		575 VOLT		OPTIONAL CENTRIFUGAL PUMP		REFRIGERANT CHARGE	APROX DRY WEIGHT.										
SIZE		CONFIGURATION PER CIRCUIT					QTY	AC TYPE	55°F	49°F	44°F	38°F	32°F	27°F	21°F	15°F	RLA COMP.		RLA COMP.		RLA COMP.		HP	FLOW		CONNECTIONS	LB	(KG)	LB	(KG)						
UNIT	HP	QTY	HP	MODEL	MODEL	CKT			CFM	12.9°C	9.7°C	6.4°C	3.2°C	0.1°C	-3.0°C	-6.2°C	-9.3°C	1	2	1	2	1		2	SYSTEM MCA						SYSTEM MCA	SYSTEM MCA	PSI	GPM	M3H	In/Out in.
A-0480	050	2	15	GSD60182VA	GSD80421VA	1	3	43500	CAP.	53.9	49.3	45.4	41.3	37.6	34.1	31.1	28.0	57.7	102.8	213.5	28.9	51.4	107.3	21.5	41.1	84.3	5	UPTO 35	109	25	3"	54.5	(24.8)	2,413	(1,097)	A
									EER	11.8	10.9	10.3	9.4	8.7	8.0	7.4	6.8																			
A-0580	060	4	15	GSD60182VA	GSD60182VA	2	4	48000	CAP.	64.7	59.2	54.5	49.7	45.5	41.2	37.5	33.7	57.7	57.7	273.0	28.9	28.9	137.1	21.5	21.5	102.4	5	UPTO 35	131	30	3"	65.4	(29.7)	3,618	(1,644)	A
									EER	11.8	11.0	10.4	9.6	9.0	8.2	7.7	7.0																			
A-0650	070	4	15	GSD60182VA	GSD60235VA	2	4	58000	CAP.	73.8	68.2	62.3	56.8	52.0	47.2	42.7	38.5	57.7	71.0	310.6	28.9	34.7	154.2	21.5	27.8	120.4	10	UPTO 40	150	34	3"	74.8	(34.0)	3,880	(1,764)	A
									EER	11.7	11.1	10.3	9.5	8.9	8.2	7.5	6.8																			
A-0720	080	4	20	GSD60235VA	GSD60235VA	2	4	58000	CAP.	81.0	74.7	68.7	63.2	57.3	52.2	47.5	42.8	71.0	71.0	337.2	34.7	34.7	165.8	27.8	27.8	133.0	10	UPTO 40	165	37	3"	82.4	(37.5)	4,142	(1,883)	A
									EER	11.3	10.6	10.0	9.4	8.6	7.9	7.4	6.7																			
A-0850	090	4	20	GSD60235VA	GSD80295VA	2	5	72500	CAP.	93.5	86.3	78.8	71.8	65.3	59.8	54.2	48.8	71.0	85.1	377.0	34.7	40.0	181.9	27.8	32.6	147.2	10	UPTO 40	189	43	3 1/2"	94.6	(43.0)	4,675	(2,125)	B
									EER	11.5	10.9	10.0	9.2	8.5	8.0	7.3	6.6																			
A-0950	100	4	15	GSD60182VA	GSD80421VA	2	6	77000	CAP.	107.2	98.7	90.2	82.2	75.2	68.2	61.7	55.5	57.7	102.8	394.5	28.9	51.4	198.0	21.5	41.1	155.2	10	UPTO 40	216	49	3 1/2"	108.2	(49.2)	5,030	(2,286)	B
									EER	11.8	11.1	10.3	9.5	8.9	8.1	7.4	6.8																			
A-1000	110	4	20	GSD60235VA	GSD80421VA	2	6	87000	CAP.	115.0	106.0	97.5	88.8	80.8	73.8	66.8	60.3	71.0	102.8	424.9	34.7	51.4	211.8	27.8	41.1	169.7	10	UPTO 40	234	53	3 1/2"	117.0	(53.2)	5,298	(2,408)	B
									EER	11.5	10.9	10.2	9.4	8.7	8.1	7.4	6.8																			
A-1100	120	4	20	GSD60235VA	GSD80485VA	2	6	87000	CAP.	121.7	112.3	103.5	95.2	86.7	78.7	71.8	65.3	71.0	128.0	481.6	34.7	64.1	240.3	27.8	51.3	192.6	10	UPTO 40	248	56	3 1/2"	124.2	(56.5)	5,376	(2,444)	B
									EER	11.1	10.5	9.9	9.3	8.6	7.9	7.4	6.9																			

Compressor RLA: Rated Load Amperage (RLA) estimated to the full load of the compressor RLA = Maximum Continuous Current (MCC) / 1.56
Compressor MCC: Maximum Continuous Current (MCC) of the compressor(s)

MCA: Minimum Circuit Amperage (MCA) = RLA of the largest compressor X 1.25 + SUM RLA others compressor(s) + Total FLA Fans + Control panel load
FLA Fan: Full Load Amperage (FLA) of the fans

CAPACITY CORRECTION FACTORS

Ambient Temperature in °F	60	65	70	75	80	85	90	95	100	105	110	115	120	125
Capacity Factor R-410a	1.28	1.25	1.22	1.19	1.15	1.10	1.05	1.00	0.98	0.96	0.92	0.88	0.84	0.8

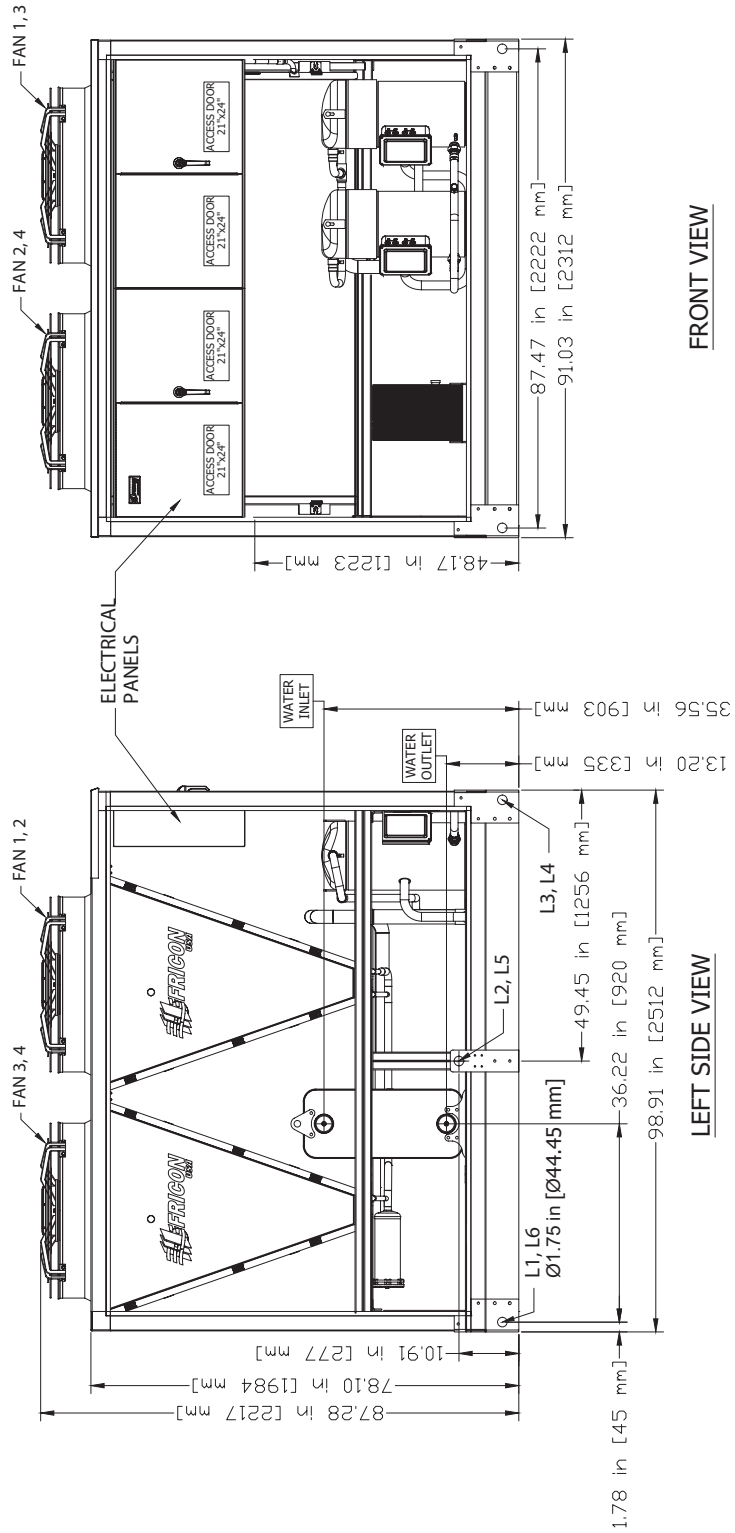
HAOP (High Ambient Operation Package) required for operation above +110°F

‡ Multiply capacity by .83 when used with 50 Hz power.

All capacities are calculated at 20°F return gas temperature and dew point values

DRAWING REFERENCE / FRAME TYPE

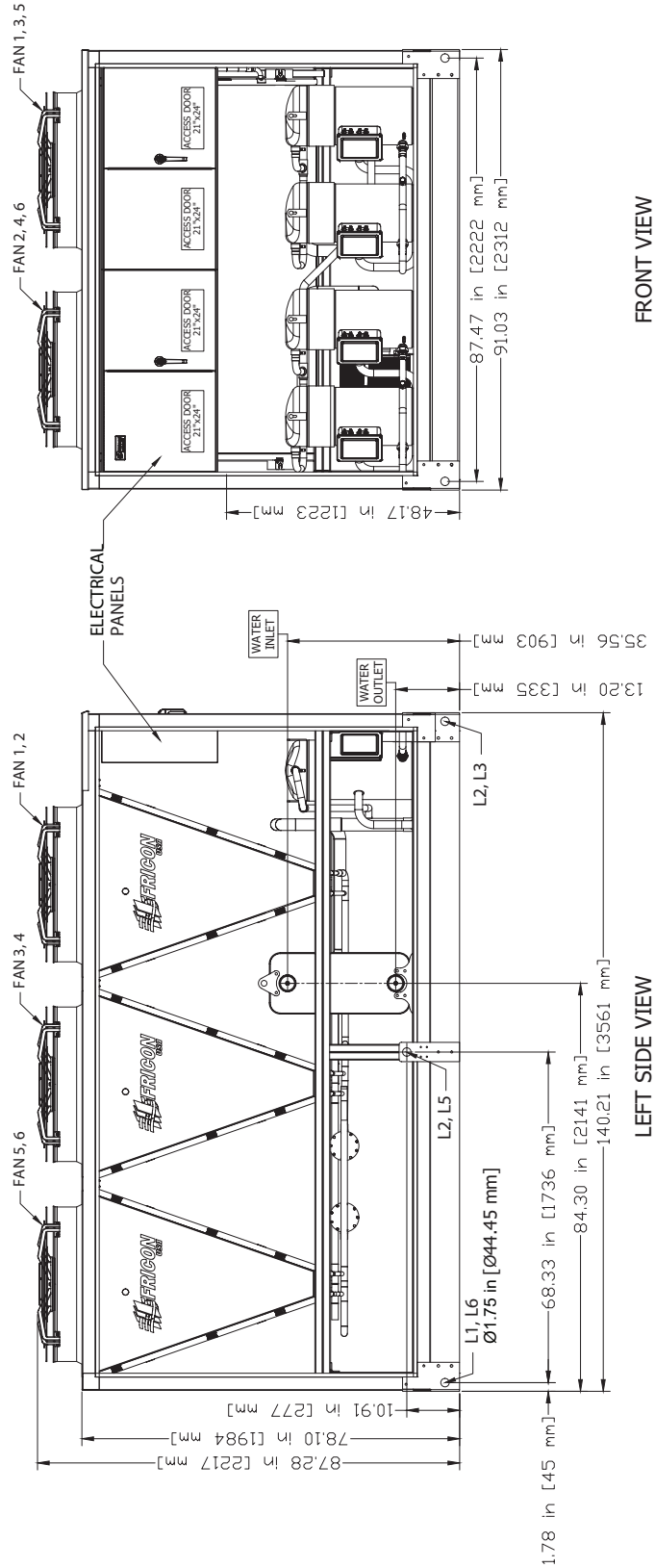
A) 2 compressors and 3 fans or 4 compressors and 4 fans (800mm)



SUBJECT TO CHANGE ACCORDING TO ACCESSORIES/OPTIONS. PLEASE CONSULT THE FACTORY FOR SPECIFIC INFORMATION.

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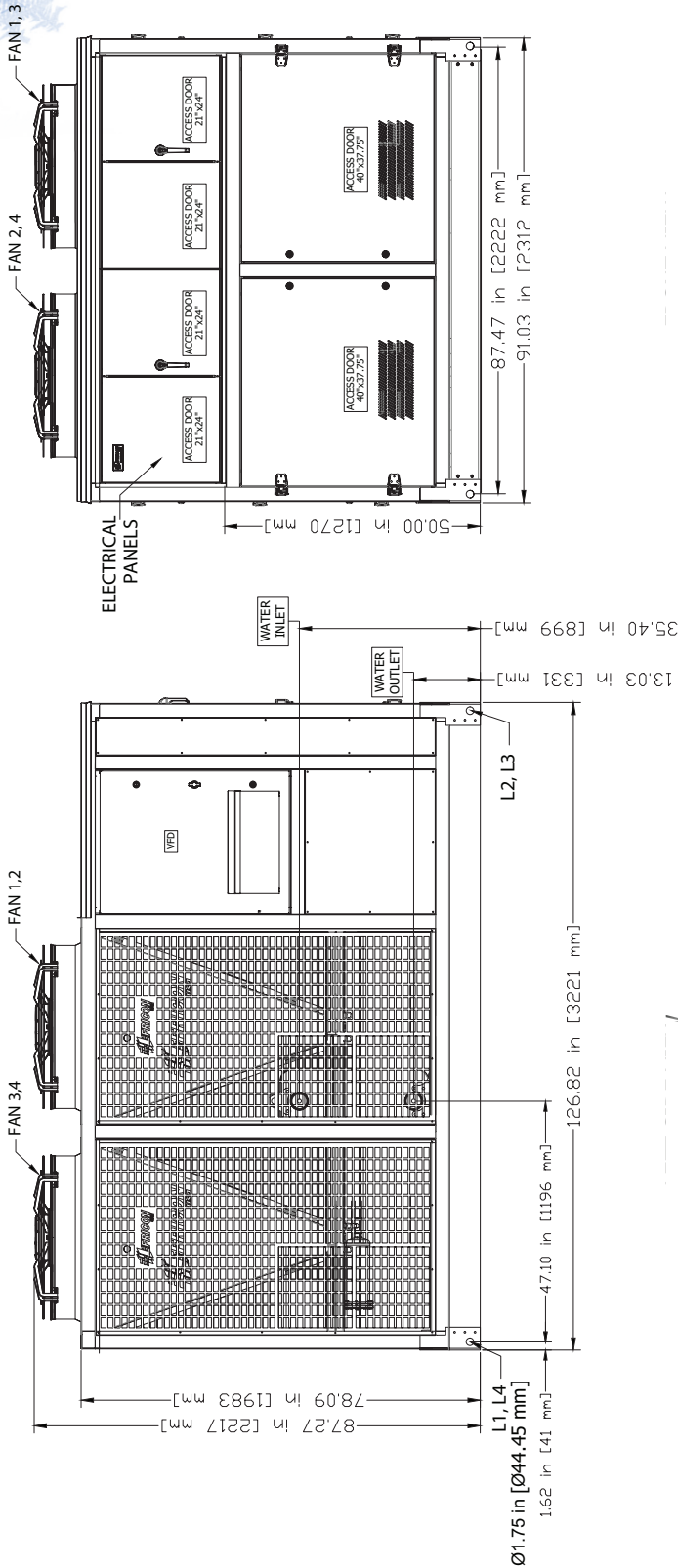
B) 4 compressors, 5 or 6 fans (800mm)



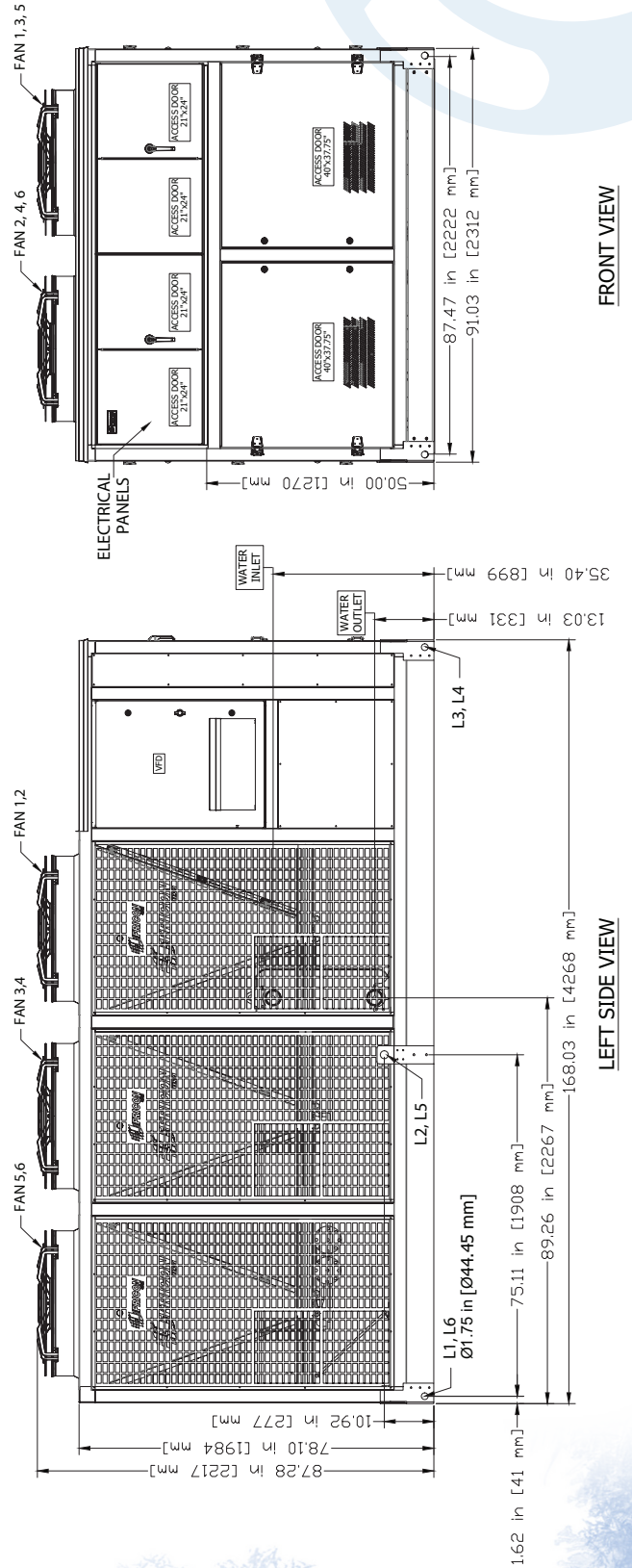
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DRAWING REFERENCE / FRAME TYPE: ENCLOSED FRAME

A-1 2 compressors, 3 or 4 fans (800mm)



B-1 4 compressors, 5 or 6 fans (800mm)



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FRICONUSA AIR COOLED CHILLERS

