FRICON USA
THE NEW REFRIGERATION AGE

AIR CONDITIONING LINE

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)

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

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

DESIGNED • ENGINEERED • ASSEMBLED IN THE USA

c UL us LISTED 508A

ECOFriendly BY FRICONUSA

POWERED BY: Bitzer

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

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).

5 or 6 fan unit

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

MODEL

FLCH	6S	A.1	A	0580	2	1	1	0	41	2

F: FRICONUSA
L: LARGE-SIZED
CH: CHILLER

SERIES
6S: 6 SERIES, STANDARD

CONDENSER TYPE & VERSION
A: AIR COOLED, 1: VERSION 1

APPLICATION / LEAVING FLUID TEMPERATURE RANGE
A: AIR CONDITIONING: +55°F (+12.9°C) TO +15°F (-9.3°C)
GLYCOL USED FOR APPLICATION/TEMPERATURE BELOW 40°F

SIZE / CAPACITY
SEE TECHNICAL DATA TABLE FOR SELECTION

COMPRESSOR BRAND & TYPE
2: BITZER SCROLL
S: SPECIAL COMPRESSOR

VOLTAGE
1: 208-230V / 3PH / 60HZ
2: 460V / 3PH / 60HZ
3: 575V / 3PH / 60HZ
4: 220V / 3PH / 50HZ
5: 380V / 3PH / 50HZ
9: 380V / 3PH / 60HZ
S: SPECIAL VOLTAGE

REFRIGERANT
41: R-410A
SR: SPECIAL REFRIGERANT

OPTIONAL EXTERNAL* HYDRONIC PACKAGE INCLUDES TEFC TYPE MOTORS AND NEMA 3R CONTROL PANEL
0: NONE
1: 1 RECIRCULATION PUMP
2: 1 RECIRCULATION PUMP W/VFD
3: 2 RECIRCULATION PUMPS
4: 2 RECIRCULATION PUMPS W/VFD
S: SPECIAL HYDRONIC PACKAGE
** IF SELECTED TOGETHER, REMOTE EVAPORATOR & HYDRONIC PACKAGE ARE BUILT ON ONE FRAME FOR INDOOR USE.*

EVAPORATOR OPTION
1: BUILT-IN, DX BRAZED PLATE
2: REMOTE, DX BRAZED PLATE
S: SPECIAL EVAPORATOR

CONDENSER, PROTECTION OPTION & FAN TYPE *MCHX: MICRO-CHANNEL CONDENSER*
1: MCHX & AC FAN
2: MCHX WITH E-COATING & AC FAN
3: MCHX & EC FAN
4: MCHX WITH E-COATING & EC FAN
5: MCHX WITH MESH PROTECTION & AC FAN
6: MCHX WITH E-COATING, MESH PROTECTION & AC FAN
7: MCHX WITH MESH PROTECTION & EC FAN
8: MCHX WITH E-COATING, MESH PROTECTION & EC FAN

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									ELECRICAL DATA 60HZ									MECHANICAL DATA									
												WATER			GLYCOL 20%		GLYCOL 30%			230 VOLT			460 VOLT			575 VOLT			OPTIONAL CENTRIFUGAL PUMP				CONNECTIONS	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.		SYSTEM MCA	RLA COMP.		SYSTEM MCA	RLA COMP.		SYSTEM MCA	HP	HEAD PRESSURE PSI	FLOW							FRAME TYPE
UNIT	HP	QTY	HP	MODEL	HP	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				GPM	M3H	In/ Out in.	LB	(KG)	LB	(KG)	
A-0480	050	2	15	GSD60182VA	35	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	UP TO 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	15	GSD60182VA	2	4	48000	CAP.	48000	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	UP TO 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	20	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	UP TO 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	20	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	UP TO 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	25	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	UP TO 40	189	43	3 ½"	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	35	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	UP TO 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	35	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	UP TO 40	234	53	3 ½"	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	40	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	UP TO 40	248	56	3 ½"	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

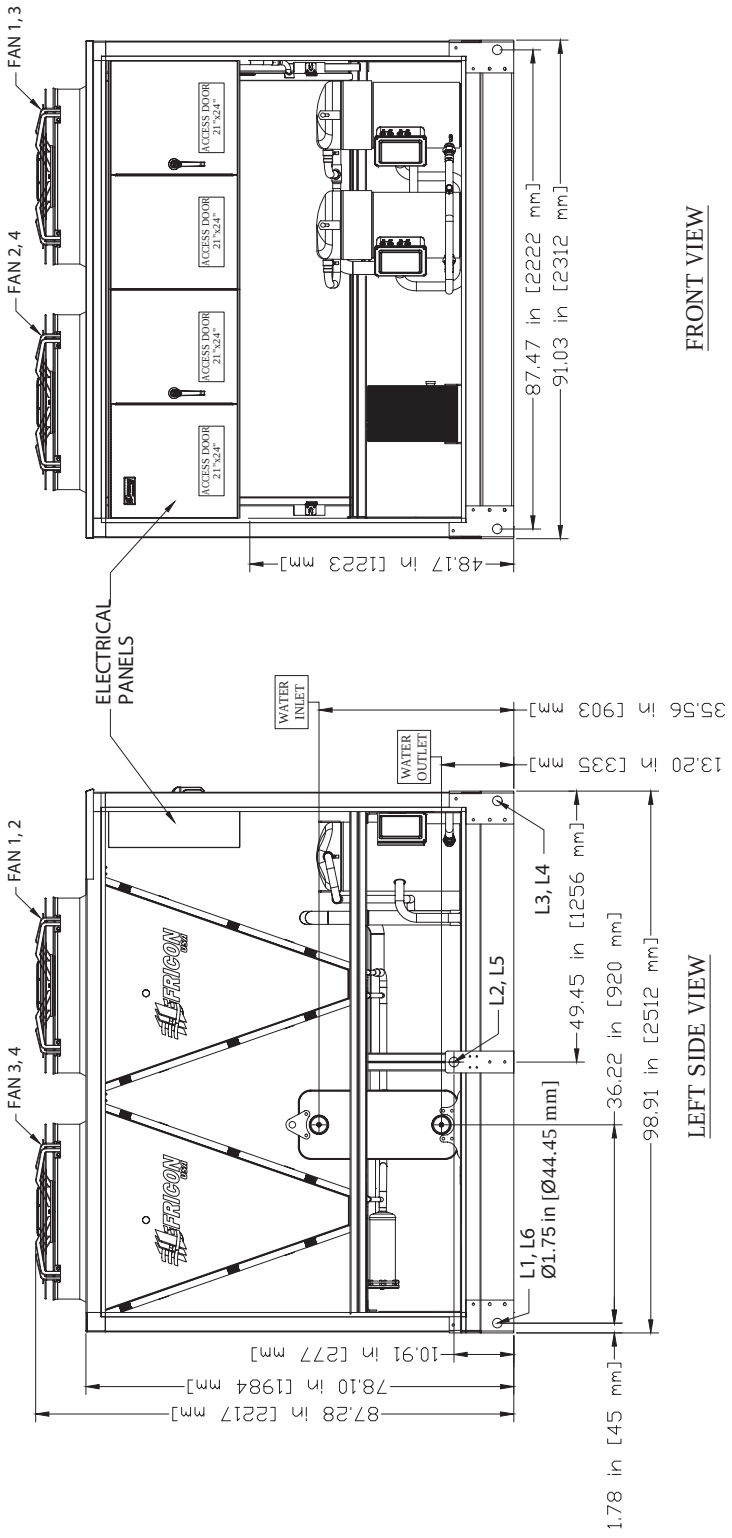
HAOP (High Ambient Operation Package) required for operation above +110°F

‡ 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)



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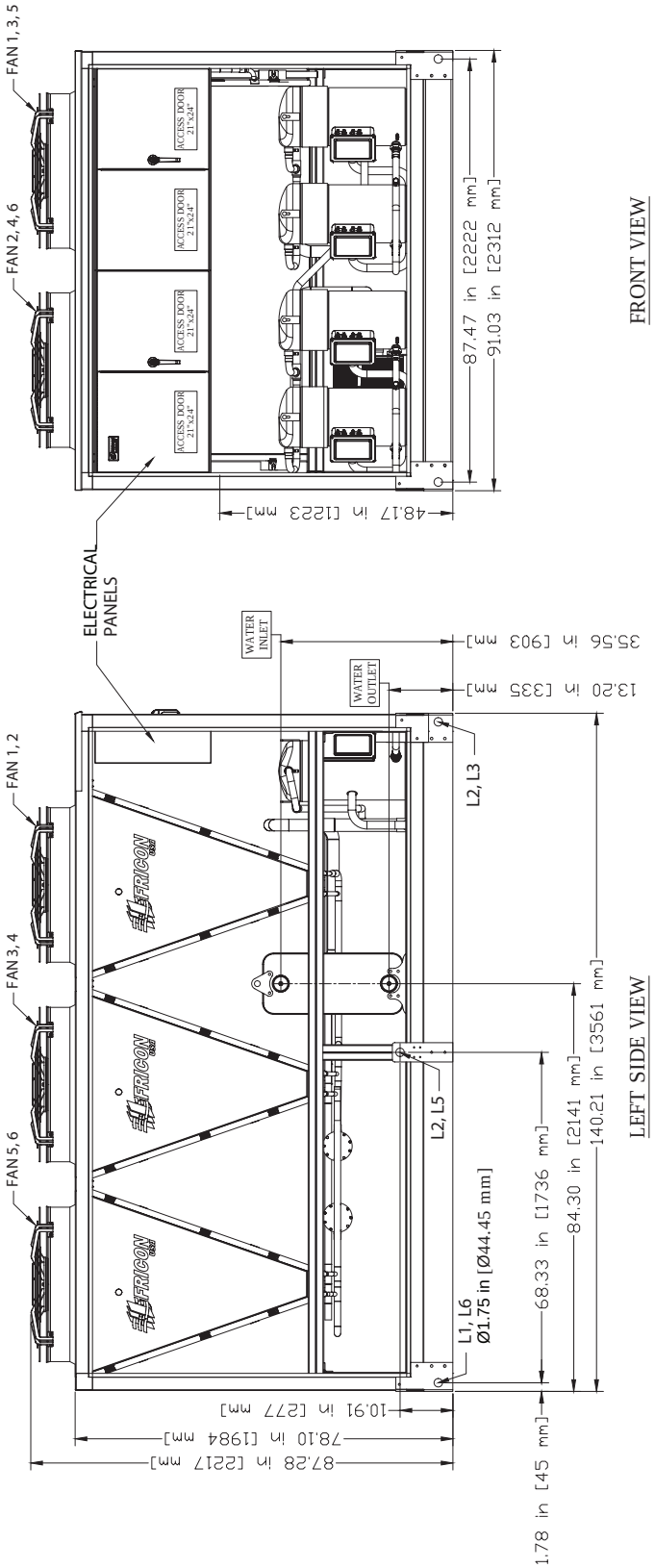
DRAWING REFERENCE / FRAME TYPE

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



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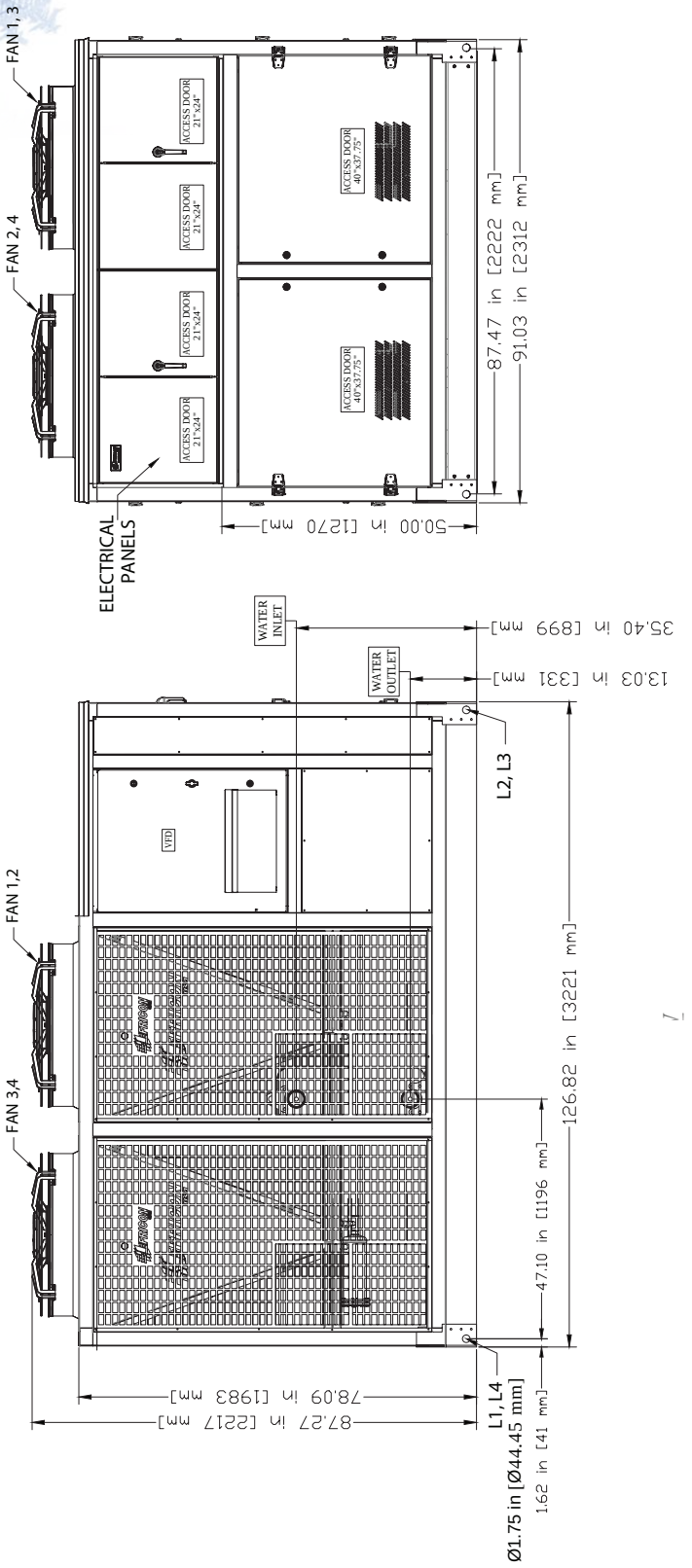
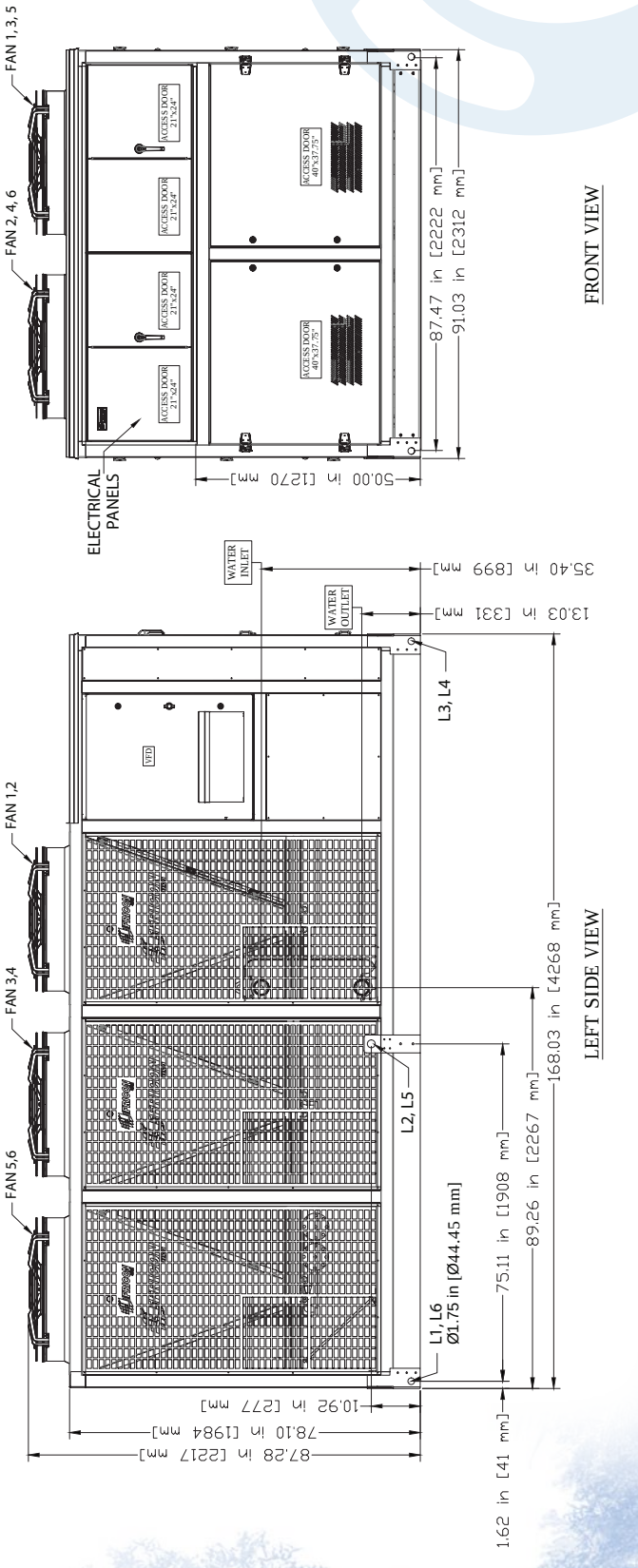
DRAWING REFERENCE / FRAME TYPE: ENCLOSED FRAME

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



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



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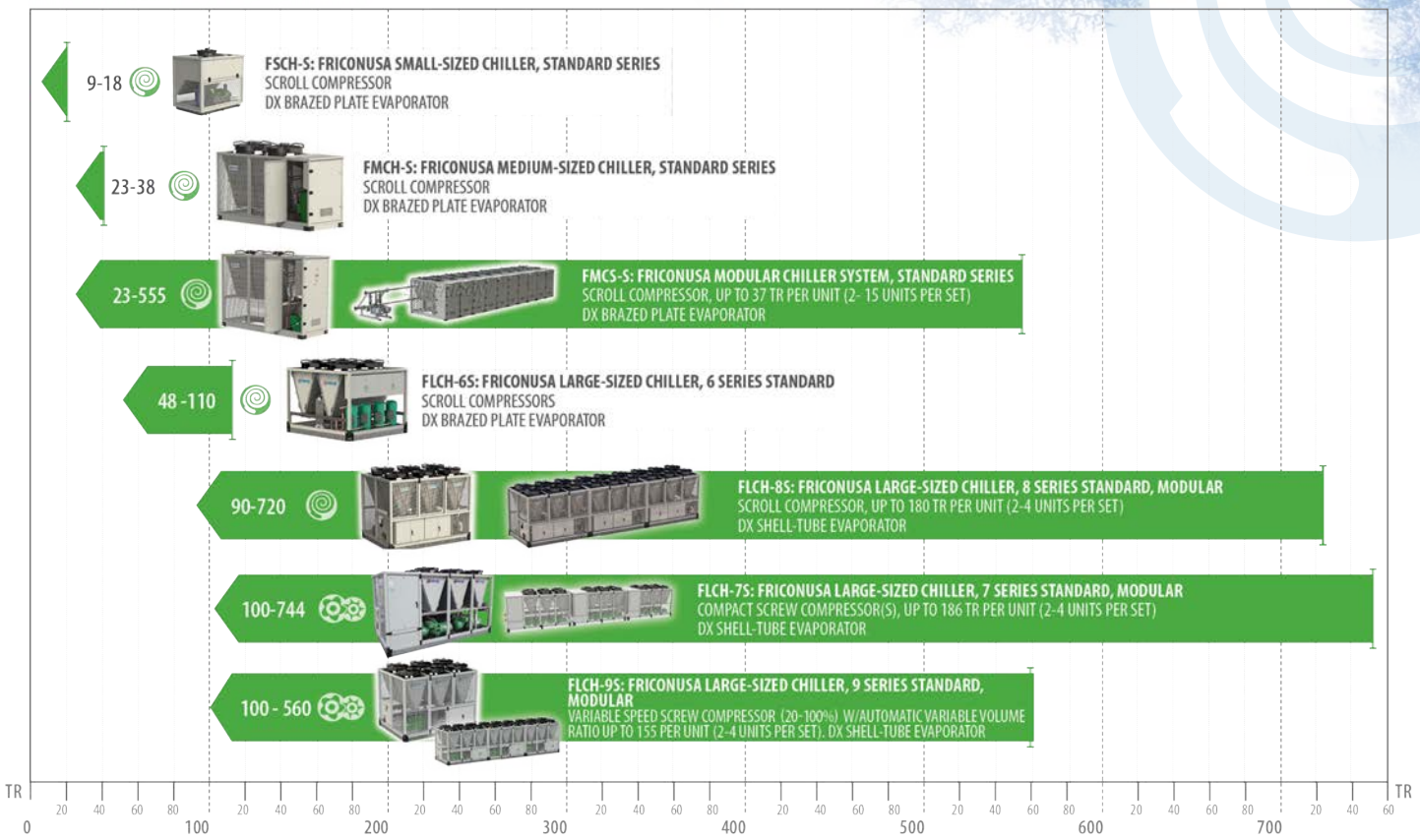
FRICONUSA AIR COOLED CHILLERS

AIR CONDITIONING LINE



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