



## PROCESS COOLING LINE

The new FLCH-7P: FriconUSA Large-Sized Modular Chiller, 7 Series Premium, air cooled condenser, is designed to meet most of the demands of medium to large range capacity for process cooling. Its flexible innovative design allows the modules to work independently in capacities between 70 to 186 TR or grouped in different combinations of sizes to form one or various sets and meet capacity requirements up to 744 TR per set. The quality, high efficiency up to 11.8 EER and exceptional IPLV, according to AHRI Standard 550/590, ensures our customers reliability, low operating cost and long life of the equipment.

We have two types of Chillers depending on the application for high temperature and medium-low temperature for use with glycol.

The most common applications are for cooling in industrial processes such as: plastic plants (molds, extrusion and blowing), chemical processes, beverage industry, glycol cooling systems, ice rinks, thermal ice energy storage, petroleum and for demanding air conditioning for industrial plants or data center.

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:

"H" High Temperature: +50°F (+10°C) to +18°F (-8.0°C)

"M" Medium Temperature: +37°F (+2.6°C) to +5°F (-15.2°C)

### STANDARD FEATURES & BENEFITS:

- Bitzer compact screw compressor(s) with one or two separate refrigeration circuits for more reliability.
- Automatic step-less unloader, adjusts the compressor capacity to the required thermal load between 25% 100% for one compressor and 13% 100% for dual compressors, per unit.
- Innovative modular design, aluminum frame with galvanized steel reinforcement, high efficiency condenser with strong structure and aluminum micro-channel coil, less weight and size; reduces transport, assembly and construction costs.
- Built-in 8" Victaulic connection manifold to easily join units and create a set, simplifying installation.
- Eco-friendly; Micro-channel Air cooled condenser coil with reduced internal volume requires, along with the incorporated refrigerant distributor in our innovative, high-efficiency, Direct Expansion (DX) shell-tube evaporator, reduces the refrigerant charge between 60% to 70% compared to Chillers from similar efficiency with flooded evaporator.
- 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 high efficiency, shell-tube, single pass, counter-flow, Direct Expansion (DX) evaporator with efficiency similar to a flooded evaporator but with less refrigerant charge.
- Electronic expansion valve, liquid sight glass and solenoid valve.
- Liquid drier with replaceable core and inlet/outlet ball valve.

# FLCH-7P SERIES, A.1

## LARGE-SIZED MODULAR CHILLER

PREMIUM SERIES, AIR COOLED CONDENSER  
SINGLE OR DUAL SCREW COMPRESSOR(S)

70-186 TR PER UNIT / 744 TR PER SET

PREMIUM  
SERIES



DESIGNED • ENGINEERED • ASSEMBLED  
IN THE USA

UL US LISTED  
508A

ECOFriendly  
BY FRICONUSA

POWERED BY:

**STANDARD FEATURES & BENEFITS (CONT.):**

- Liquid sub-cooling system (economizer) on each compressor with brazed plate heat exchanger and electronic expansion valve for medium temperature applications increases capacity and efficiency.
- Built-in flow switch.
- Optical oil level sensor.
- Refrigerant: R-134a
- 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
- 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, pressure and oil) and 1 overload alarm for condenser fans.
- Adjustable dual pressure control on each compressor.
- Built-in 7" PGD touch screen on main panel door.
- BMS (Building Management System): ModBus protocol for supervisor or HMI (Human Machine Interface).
- 2-year warranty.

**STANDARD OPTIONS:**

- Different compressor brand.
- Condenser coil with E-coating for greater resistance to corrosion.
- Protective mesh for the condenser.
- EC type fan(s) with variable speed (for 575V a VFD is used).
- Evaporator option:
  - Remote evaporator
- External Hydronic Package includes TEFC type motors and NEMA 3R control panel:
  - 1 recirculation pump
  - 1 recirculation pump with VFD
  - 2 recirculation pumps
  - 2 recirculation pumps with VFD
- Different power supply voltage.

**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 (50~100%).

*\*Certain limitations apply.*
- CAIP (Compressor Acoustic Insulation Package) for better soundproofing:
  - CAIP-I: Fully enclosed metal compressor box with access door and internal convoluted acoustic foam panel lining.
- 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.

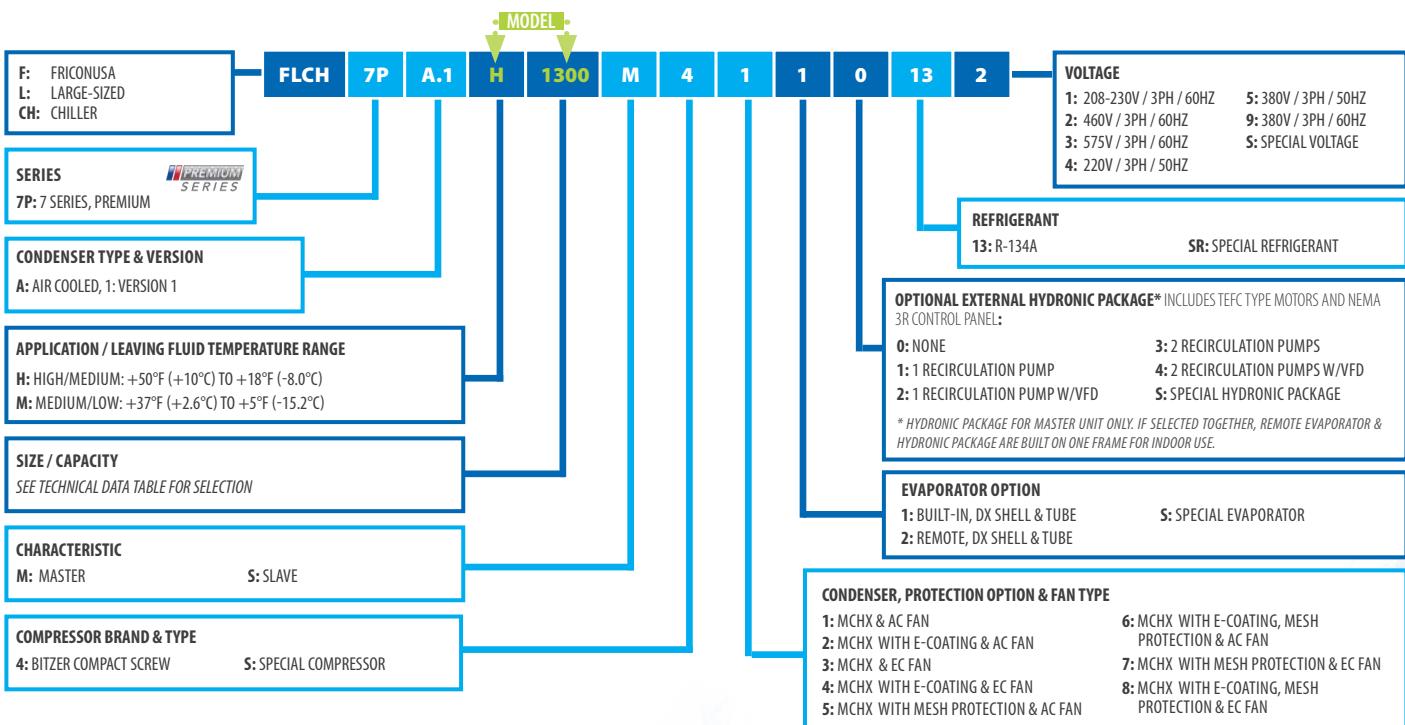
*\*Requires CAIP (Compressor Acoustic Insulation Package).*
- HAOP (High Ambient Operation Package) required for operation above +110°F:
  - HAOP-I: +125°F (+51.7°C) to +40°F (4.4°C), Includes: control panel air extractor fan and filter for air intake.
- MDS (Main Disconnect Switch)
- Electronic Control System:
  - BACnet Communication board.
  - Remote LCD display.
  - Remote 7" or 15" touch screen display.
  - Energy Management Module.
  - CHSM (Chiller System Manager) controls the sequence between multiple sets.
- Extended 5-year compressor warranty (U.S. only).





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

### NOMENCLATURE





## TECHNICAL DATA - APPLICATION / LEAVING FLUID TEMPERATURE RANGE

CAPACITY IN ACCORDANCE TO AHRI STANDARD 550/590.

R-134a

H: HIGH TEMPERATURE: +50°F (+10°C) TO +18°F (-8.0°C)																													
MODEL		SCREW COMPRESSOR CONFIGURATION PER CIRCUIT			FAN		EVAPORATION CAPACITY TR AT 95°F AMBIENT R-134A					ELECTRICAL DATA 60HZ				MECHANICAL DATA				FRAME TYPE									
		QTY	HP	BITZER			+50°F	45°F	39°F	34°F	28°F	23°F	18°F	+10°C	7.1°C	4.0°C	1.0°C	-2.0°C	-5.0°C	-8.0°C									
	HP	QTY	HP	MODEL	CIRCUIT QTY	CFM																							
H-1000	120	2	60	CSH7563-60Y	2	6	87000	CAP.	105.5	95.5	86	77.3	68.7	61.3	54.2		160.9	413.6	80.1	206.9	64.1	165.8	8" Victaulic	96 (43.4)	8,297 (3,772)	A			
								EER	11.8	11.1	10.3	9.6	8.7	8.1	7.3														
H-1150	140	2	70	CSH7573-70Y	2	6	87000	CAP.	117.3	107	96.5	86.7	77.7	69.3	61.2		196.2	493.1	98.1	247.4	78.8	198.9	8" Victaulic	107 (48.6)	8,364 (3,802)	A			
								EER	11.3	10.8	10.1	9.4	8.7	8.0	7.2														
H-1350	160	2	80	CSH7583-80Y	2	8	116000	CAP.	140.7	127.5	115.3	104	92.7	83.2	73.7		169.2	448.5	84.6	225.5	71.8	190	8" Victaulic	128 (58.0)	9,425 (4,284)	B			
								EER	12.1	11.4	10.7	10.0	9.1	8.5	7.7														
H-1500	180	2	90	CSH7593-90Y	2	8	116000	CAP.	156.7	142	128.3	115.7	104	93.2	83.2		211.5	543.7	11.3	60.5	86.5	223	8" Victaulic	142 (64.5)	9,858 (4,481)	B			
								EER	11.7	11.0	10.3	9.7	9.0	8.4	7.7														
H-1850	220	2	110	CSH8573-110Y	2	10	145000	CAP.	195.3	177.2	160.3	144.7	130.2	116.7	104.2		237.8	619.1	119.2	311.7	94.9	248.7	8" Victaulic	177 (80.5)	12,250 (5,568)	C			
								EER	12.0	11.2	10.5	9.8	9.2	8.5	7.8														
H-1050	125	1	125	CSH8583-125Y	1	6	87000	CAP.	109.6	99.4	83.3	75.2	67.7	60.3	53.8		291.7	416.2	145.5	208.6	116.7	167.5	8" Victaulic	99 (45.2)	7,871 (3,578)	A			
								EER	12.1	11.4	9.9	9.3	8.6	7.9	7.3														
H-1160	140	1	140	CSH8593-140Y	1	7	101500	CAP.	122.2	110.9	102.4	92.4	83.2	74.7	66.2		314.1	452.3	157.1	227.3	125.6	182	8" Victaulic	111 (50.4)	8,746 (3,975)	B			
								EER	11.9	11.2	10.6	9.9	9.2	8.5	7.7														
H-1400	160	1	160	CSH9563-160Y	1	8	116000	CAP.	147.7	134.2	121.5	109.7	97.8	87.7	78.2							202.6	288.4	162.2	231.2	8" Victaulic	134 (61.0)	9,909 (4,504)	B
								EER	12.3	11.5	10.7	10.0	9.1	8.4	7.8														
H-1650	180	1	180	CSH9573-180Y	1	9	130500	CAP.	171.5	155.5	140.6	126.7	113.8	101.3	90.4		217.3	310.9	173.7	248.9	8" Victaulic	156 (70.7)	11,122 (5,055)	C					
								EER	12.6	11.8	11.0	10.2	9.5	8.6	7.9														
H-1860	210	1	210	CSH9583-210Y	1	10	145000	CAP.	195.7	177.7	161	145.5	131.2	117.9	104.8		253.2	360	202.6	288.5	8" Victaulic	178 (80.8)	11,479 (5,218)	C					
								EER	12.3	11.5	10.8	10.1	9.4	8.7	7.9														

M: MEDIUM TEMPERATURE: +37°F (+2.6°C) TO +5°F (-15.2°C)																													
MODEL		SCREW COMPRESSOR CONFIGURATION PER CIRCUIT			FAN		EVAPORATION CAPACITY TR AT 95°F AMBIENT R-134A					ELECTRICAL DATA 60HZ				MECHANICAL DATA				FRAME TYPE									
		QTY	HP	BITZER			+37°F	31°F	25°F	20°F	16°F	10°F	5°F	2.6°C	-0.5°C	-3.6°C	-6.7°C	-9.0°C	-12.1°C	-15.2°C									
	HP	QTY	HP	MODEL	CIRCUIT QTY	CFM																							
M-0700	120	2	60	CSH7563-60Y ECO	2	6	87000	81.7	74.0	66.3	59.7	53.2	47.3	41.7		160.9	413.6	80.1	206.9	64.1	165.8	8" Victaulic	106 (48.2)	8,277 (3,762)	A				
M-0800	140	2	70	CSH7573-70Y ECO	2	6	87000	90.7	82.2	74.2	66.7	59.3	53.0	46.7		196.2	493.1	98.1	247.4	78.8	198.9	8" Victaulic	119 (53.9)	8,351 (3,796)	A				
M-0950	160	2	80	CSH7583-80Y ECO	2	8	116000	109.0	99.0	89.7	80.5	72.0	64.5	57.2		169.2	448.5	84.6	225.5	71.8	190.0	8" Victaulic	143 (65.2)	9,675 (4,398)	B				
M-1050	180	2	90	CSH7593-90Y ECO	2	8	116000	121.0	109.8	99.0	89.3	80.3	71.5	63.3		211.5	543.7	11.3	60.5	86.5	223.0	8" Victaulic	158 (72.0)	9,784 (4,447)	B				
M-1350	220	2	110	CSH8573-110Y ECO	2	10	145000	153.2	138.7	125.7	113.7	101.8	91.3	81.2		237.8	619.1	119.2	311.7	94.9	248.7	8" Victaulic	201 (91.4)	12,334 (5,606)	C				
M-0750	125	1	125	CSH8583-125Y ECO	1	6	87000	85.4	77.7	70.3	63.2	56.8	50.6	44.8		291.7	416.2	145.5	208.6	116.7	167.5	8" Victaulic	113 (51.2)	7,901 (3,591)	A				
M-0850	140	1	140	CSH8593-140Y ECO	1	7	101500	96.3	87.5	79.3	71.3	63.8	57.2	50.7		314.1	452.3	157.1	227.3	125.6	182.0	8" Victaulic	127 (57.7)	8,650 (3,932)	B				
M-1000	160	1	160	CSH9563-160Y ECO	1	8	116000	113.9	103.4	92.9	83.7	74.8	66.1	57.9							202.6	288.4	162.2	231.2	8" Victaulic	149 (67.6)	10,159 (4,618)	B	
M-1150	180	1	180	CSH9573-180Y ECO	1	9	130500	130.8	118.7	106.8	96.2	85.8	76.8	68.1		N/A						217.3	310.9	173.7	248.9	8" Victaulic	171 (77.6)	10,822 (4,919)	C
M-1300	210	1	210	CSH9583-210Y ECO	1	10	145000	149.6	135.8	123.0	110.3	99.3	88.5	79.1							253.2	360	202.6	288.5	8" Victaulic	197 (89.5)	11,563 (5,256)	C	

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

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

Compressor MCC: Maximum Continuous Current (MCC) of the compressor(s)

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-134A	1.20	1.18	1.15	1.12	1.09	1.06	1.03	1.00	0.97	0.93	0.89	0.85	0.81	0.78

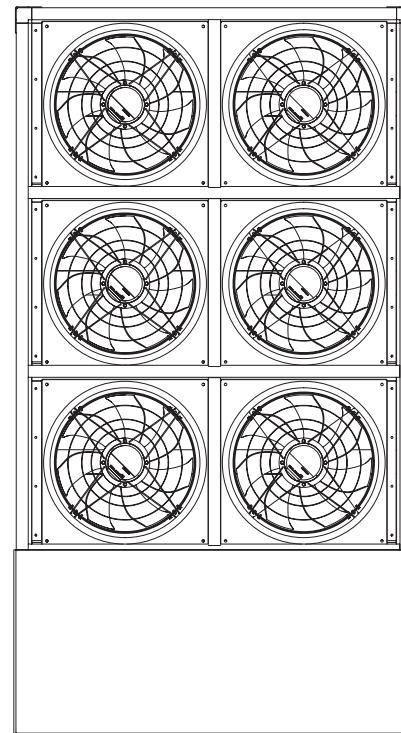
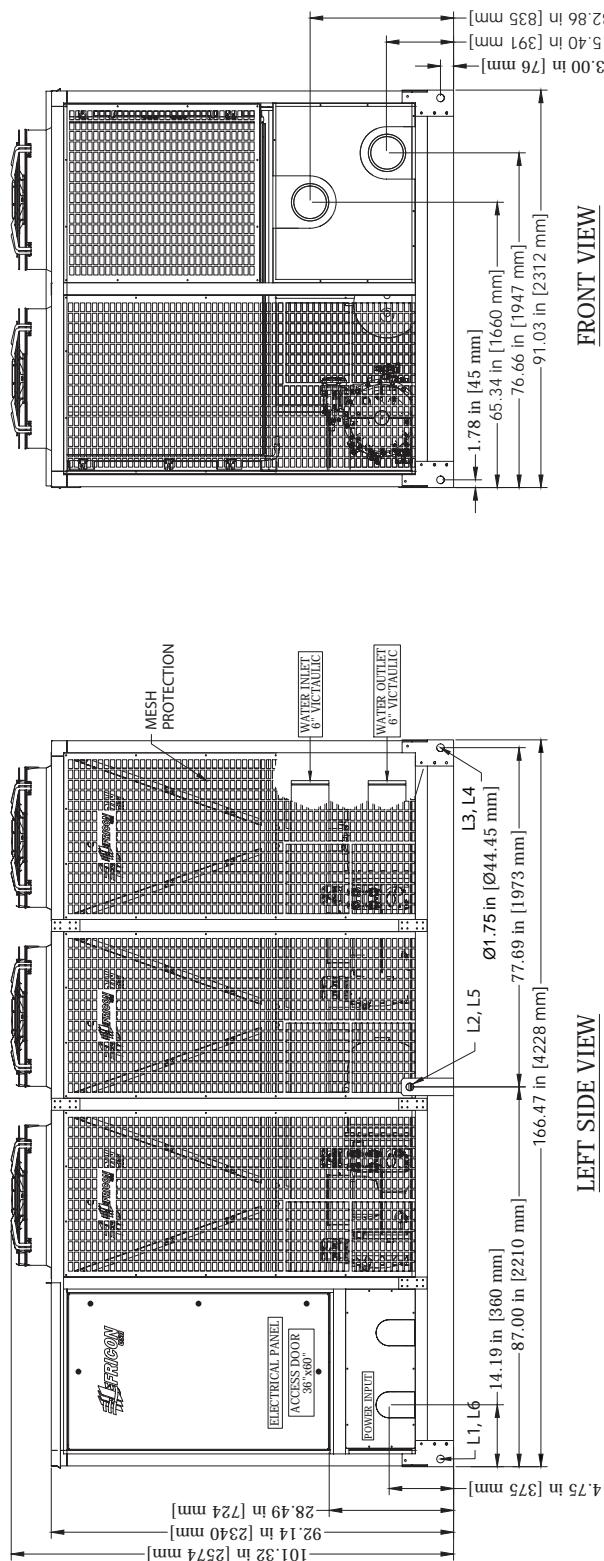
HAOP (High Ambient Operation Package) required for operation above +110°F

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

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

## FRAME TYPE / DRAWING REFERENCE

## A) Single or dual screw compressor(s), 6 fans (800mm)

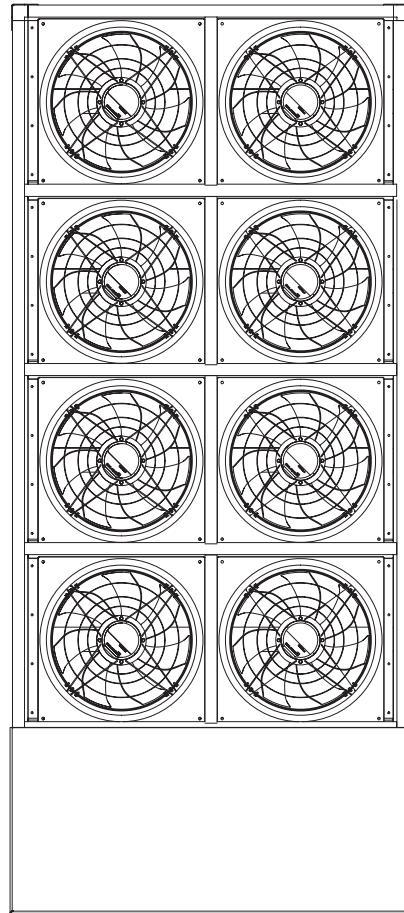
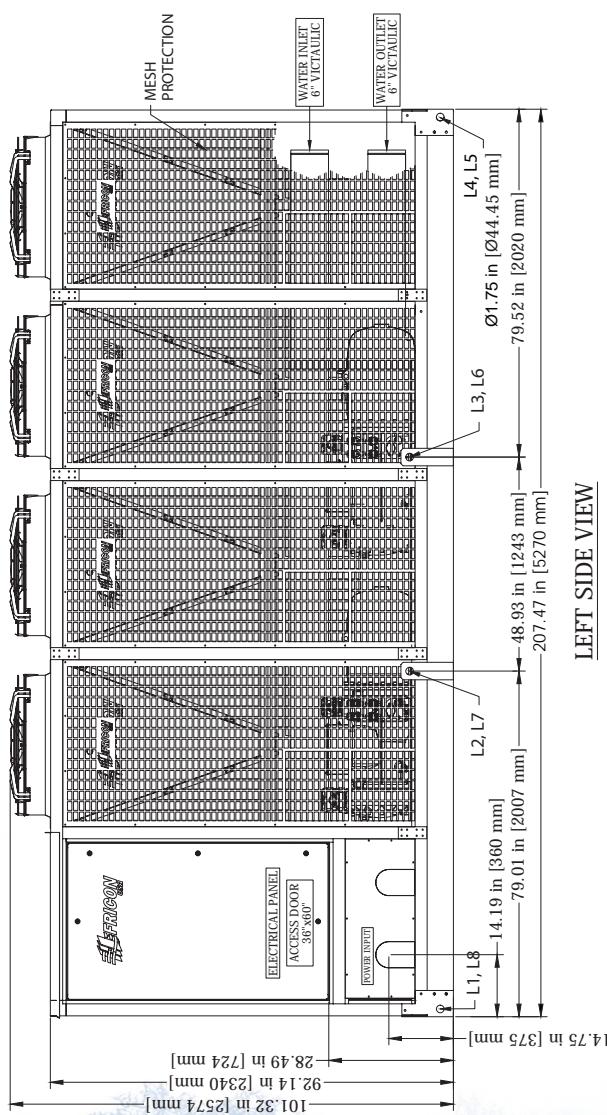
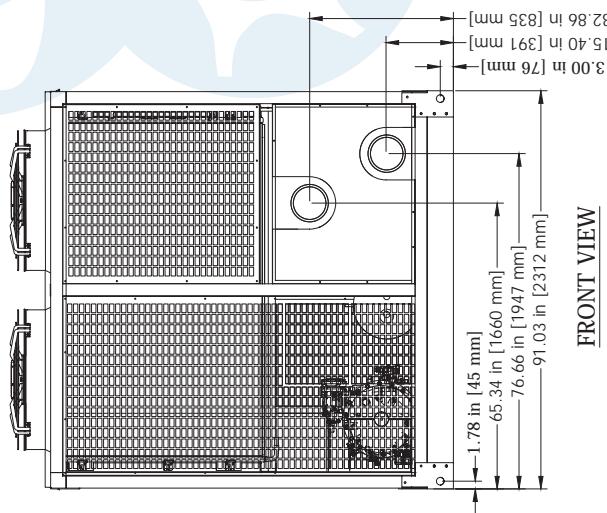


SUBJECT TO CHANGE ACCORDING TO  
ACCESSORIES/OPTIONS. PLEASE CONSULT  
THE FACTORY FOR SPECIFIC INFORMATION.

## FRAME TYPE / DRAWING REFERENCE

## B) Single or dual screw compressor(s), 7\* or 8 fans (800mm)

\*The 7th fan is placed centered on the condensation module.

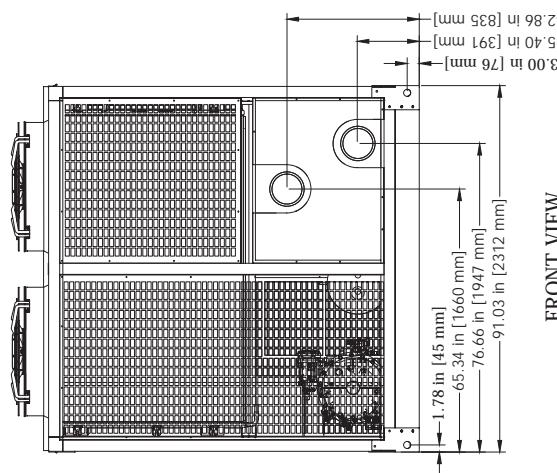


SUBJECT TO CHANGE ACCORDING TO  
ACCESSORIES/OPTIONS. PLEASE CONSULT  
THE FACTORY FOR SPECIFIC INFORMATION.

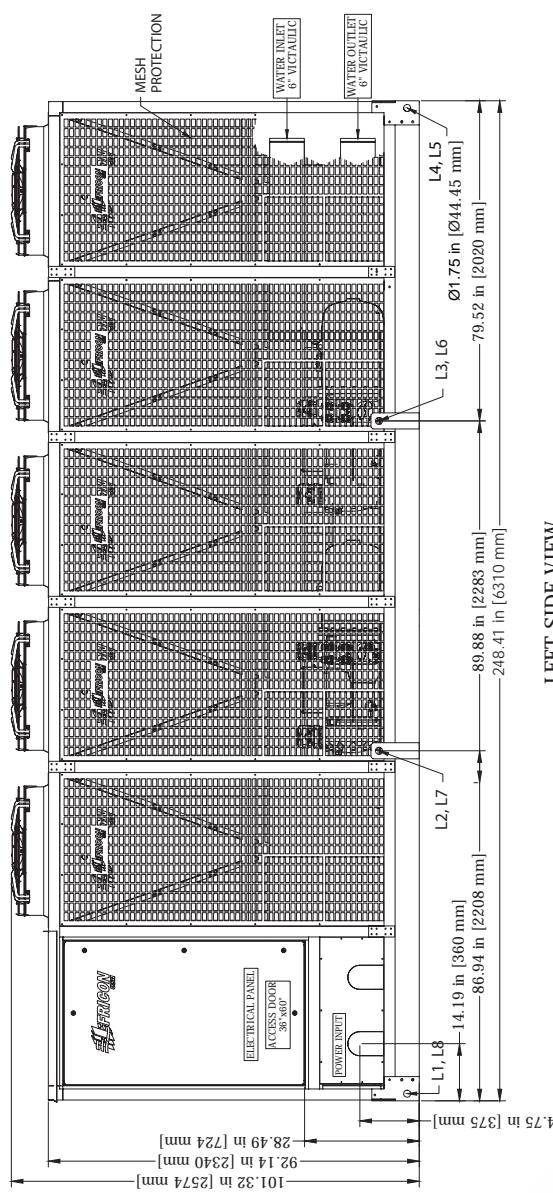
## FRAME TYPE / DRAWING REFERENCE

## C) Single or dual screw compressor(s), 9\* or 10 fans (800mm)

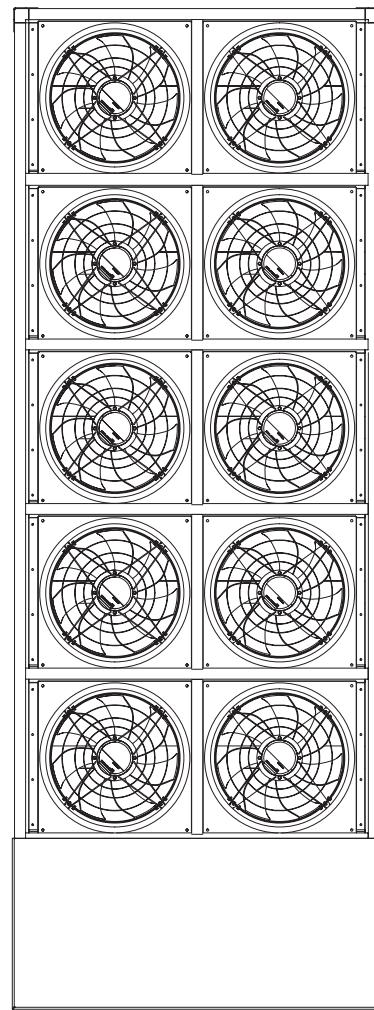
\*The 9th fan is placed centered on the condensation module.



FRONT VIEW



LEFT SIDE VIEW

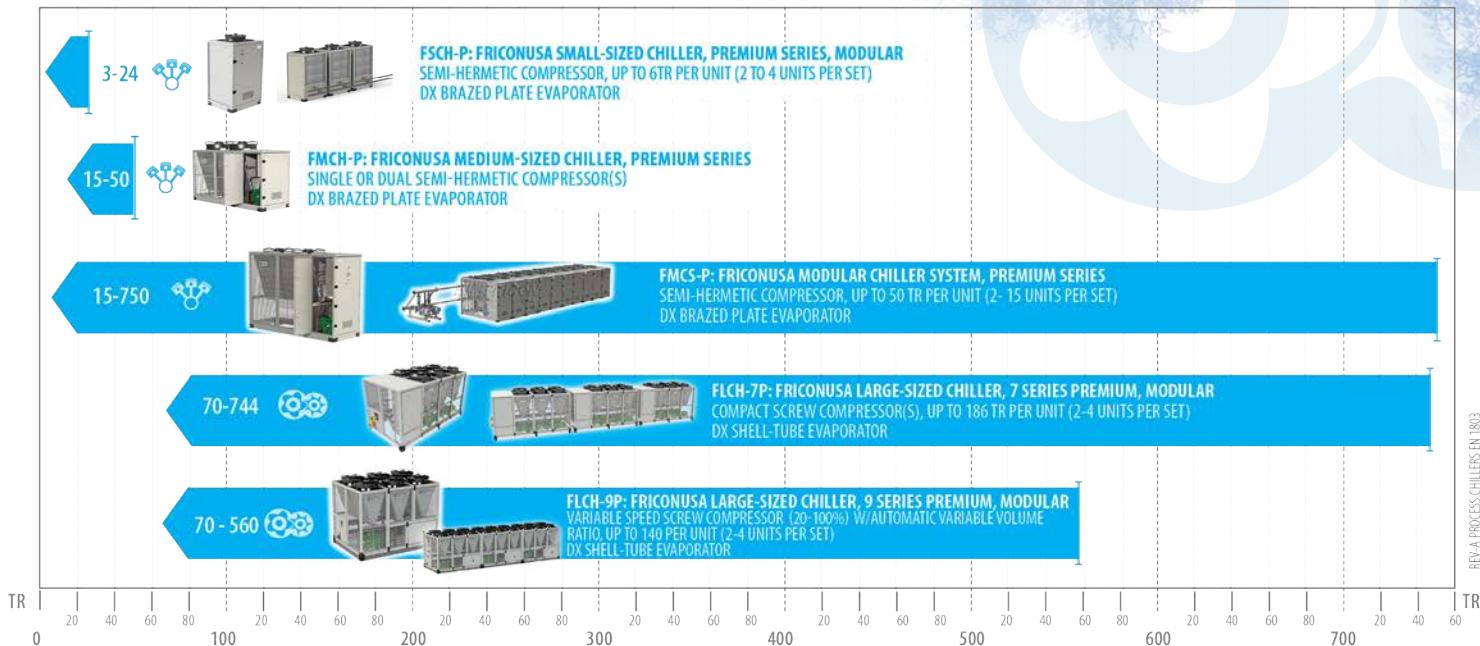


TOP VIEW

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

## FRICONUSA AIR COOLED CHILLERS FOR PROCESSES

PROCESS COOLING LINE



AUTHORIZED DISTRIBUTOR: