

FSCU-P SERIES, A.1

SMALL-SIZED CONDENSING UNIT

PREMIUM SERIES, AIR COOLED CONDENSER

SINGLE, DUAL OR TRIPLE SEMI-HERMETIC COMPRESSOR(S)

3 – 24 HP 

PREMIUM
SERIES

The FSCU-P: FriconUSA Small-Sized Condensing Unit, Premium series, air cooled condenser, is built with the best components in the market including Bitzer semi-hermetic compressors; available in capacities from 3 to 24 HP in configurations of a single compressor, or dual and triple parallel compressors. The high quality and efficiency of our products allow us to ensure our clients a highly reliable operation, low energy consumption and long equipment service life.

The most common commercial refrigeration applications are centralized refrigeration for small and medium-sized supermarkets, cold rooms, blast coolers or freezers, continuous rapid cooling tunnels, block or flake ice making machines, thermal ice storage, etc.

By using Bitzer Ecoline semi-hermetic compressors with infinite variable capacity control "CRII" between 10% and 100% or the implementation of an external VFD (Variable Frequency Drive) or "Varispeed Compressor" on the first compressor, we convert this unit into an incredible VRF (Variable Refrigerant Flow) system resulting in a greater adaptability to the thermal load demand and maximizes energy savings at partial load.

For Extra "X" Low application temperature, a Bitzer two-stage semi-hermetic compressor with sub-cooling is used. The VRF (Variable Refrigerant Flow) option for this type of unit uses an external VFD (Variable Frequency Drive) on the first compressor.

Application Temperature:

"H" High: +45°F (+7.2°C) to +10°F (-12.2°C) SST

"M" Medium: +30°F (-1.1°C) to -20°F (-29°C) SST

"L" Low: +5°F (-15°C) to -40°F (-40°C) SST

"X" Extra Low, 2-stage: -15°F (-26°C) to -60°F (-51°C) SST

10% **VRF** 100%
VARIABLE REFRIGERANT FLOW
VARIABLE REFRIGERANT FLOW "LOOP"
Optional



1-fan version



2-fan version



3-fan version



STANDARD FEATURES & BENEFITS:

- Bitzer Ecoline semi-hermetic compressor(s) with spring mounted vibration insulation, crankcase heater and internal thermal protection. For Extra "X" Low application temperature, a Bitzer two-stage semi-hermetic compressor is used.
- Step unloader(s) on each compressor (4 cylinders: 50-100%, 6 cylinders: 33-66-100%).
- Aluminum structure with galvanized steel reinforcement, high efficiency condenser with reinforced structure and aluminum micro-channel coils. Its low weight and size reduces the costs of transportation, installation and construction.
- Galvanized and powder coated weatherproof cabinet.
- EcoFriendly; Air cooled micro-channel condenser coil with internal volume reduced requires between 40% and 60% less refrigerant charge and results in a significant reduction of the refrigerant charge necessary for normal or flooded operations.
- Wide range of SST (Saturated Suction Temperature).
- Top and rear fan covers are designed to be easily interchangeable.
- Quiet, high efficiency, external rotor motor, AC type axial fan(s) for a better operation, configured in a vertical position.
- Vertical liquid receiver with inlet and outlet insulate valves, stainless steel relief valve at 450 PSI and electronic low liquid level indicator.
- Liquid sight glass and solenoid valve.
- Sealed suction filter and liquid drier for single compressor units. Replaceable core filter for units over 15 HP and all units with dual and triple compressors.
- Suction accumulator.
- Flexible joint on suction and discharge lines on each compressor.
- Helical oil separator with discharge check valve and replaceable 5 micron oil filter, additionally, for units with dual or triple compressors, built-in oil reservoir.
- Electronic oil level regulator for units with dual or triple compressors.
- Electronic oil pressure switch.
- Refrigerant: R-404a
- Factory pre-charged with nitrogen and electrical work tested.
- UL 508A listed built-in electrical control panel.
- Compressor and fan circuit breakers.
- Voltage and phase-loss monitor with protection module for each compressor.
- Control: 208-230V / 1PH / 60HZ
- Power Supply Voltage 208-230V / 3PH / 60HZ with single point power connection.
- Electronic Control System; compressor(s) and condenser fan(s) operational management: alarms, measurement of pressure and temperature variables, 132x64 LCD backlit built-in display with 6-button keypad.
- Alarm management: 3 alarms per compressor(s) (overload, pressure and oil) and 1 overload alarm for condenser fan(s).
- Fixed high pressure controls on each compressor.
- BMS (Building Management System): ModBus protocol for supervisor or HMI (Human Machine Interface).
- 2-year warranty.

BENEFITS:

VRF (Variable Refrigerant Flow): Maximum adaptability to the thermal load demand and extraordinary energy savings at partial load.

Easy access and maintenance: The top and rear fan covers are designed to be interchangeable. Nylon hinges permit a quick change to the fan position (vertical or horizontal) and easy access for maintenance to the units coils and fan(s).

The electrical panel is located on the top front with nylon hinged doors that lock with a universal key for easy and secure access.

The vertical liquid receiver, suction filters, liquid solenoid, drier and sight glass are accessed from the front of the unit with sufficient space for service.

Small footprint and installation versatility: Side access for maintenance is not necessary which permits installing the units next to or on top of each other significantly reducing costly wasted space in machine rooms.

STANDARD OPTIONS:

- Different compressor brand.
- Condenser coil with E-Coating for greater resistance to corrosion.
- Fan configuration in horizontal position.
- EC type fans with variable speed (for 575V a VFD is used).
- Cabinet with integrated mesh protection.
- Refrigerants: R-407a, R-448a, R-449a, R-507a
- Different power supply voltage.

ADDITIONAL OPTIONS:

- VRF (Variable Refrigerant Flow) package to maximize the efficiency and capacity adaptability to the demand:
 - VRF-I: CRII Unloader. Infinite capacity control on the first compressor (4 cylinders: 10≈100%, 6 cylinders: 33≈100%).
 - VRF-II*: VFD (Variable Frequency Drive). Infinite capacity control on the lead compressor in each circuit (42~116%).
 - VRF-III: Bitzer Varispeed Compressor. Infinite capacity control on the first compressor (25~145%). Available for certain models only.
**Certain limitations apply.*
- LAHPC (Low Ambient Head Pressure Control). Required for ambient temperature operation below +40°F.
 - LAHPC-I: +110°F (+43.3°C) to 0°F (-18°C), Includes: Sporlan head pressure control valves ORI & ORD.
 - LAHPC-II: +110°F (+43.3°C) to -20°F (-28.9°C), Includes: same as LAHPC-I plus split condenser with variable speed fan on the first fan.
 - LAHPC-III: +110°F (+43.3°C) to -35°F (-37.2°C). Includes: same as LAHPC-II plus insulated liquid receiver with electric heater, control panel with ventilated heating and compressor thermal insulation jacket.
- 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.
- EMSP (External Mechanical Sub-Cooling Package):
 - EMSP-I: Includes: brazed plate sub-cooling heat exchanger, liquid and suction connection ball valve, liquid solenoid valve, sealed drier, sight glass and thermostatic expansion valve.
 - EMSP-II: same as EMSP-I except that in place of a thermostatic expansion valve is an electronic expansion valve drive and sensors.
- Suction accumulator with heat exchanger.
- Electronic control system:
 - BACnet Communication board.
 - Remote LCD display.
 - Local or remote touch screen display.
 - Energy Management Module.
- Extended 5-year warranty on the compressor(s).

Waterproof: Cabinet designed for outdoor use with optional integrated protective mesh offers integral protection to the unit with low additional cost.

Cost effective: The triple or dual FSCU, with 2 or 3 compressors respectively, are a parallel system with all the components necessary to operate a suction group as efficiently as a traditional parallel system "Racks" but at a lower cost.

Quiet operation: Using external rotor fans with cast aluminum curved wing impeller and optimized venturi plate offers high performance air volume, low energy consumption and noise reduction; combined with low noise Bitzer semi-hermetic compressors, permits a very quiet operation.

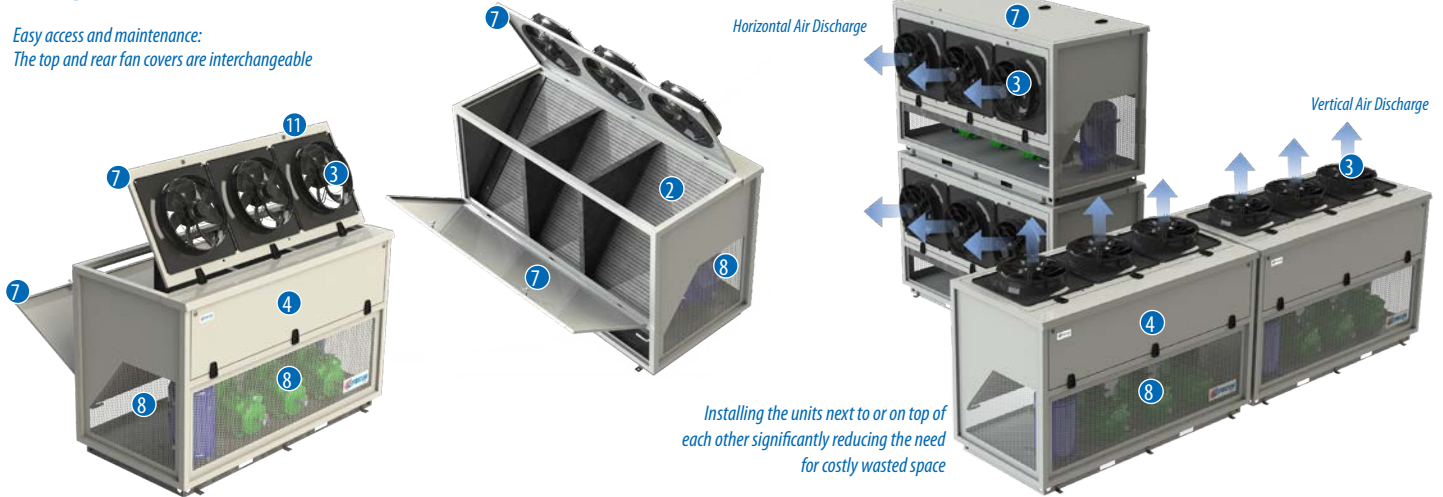
REFERENCE

1. Compressor
2. Microchannel condenser
3. Fan
4. Electric panel & control
5. Liquid receiver
6. Suction accumulator
7. Access doors
8. Cabinet with protective grille
9. Liquid filter
10. Suction filter
11. Universal key locks



VERSATILITY

Easy access and maintenance:
The top and rear fan covers are interchangeable



NOMENCLATURE

| | | | | | | | | | | | | | |
|--|--|--|--|--|------------|--|-------------|--|----------|---|-----------|----------|--|
| F: FRICONUSA S: SMALL-SIZED C: CONDENSING U: UNIT | | FSCU | | P | A.1 | H | 0450 | S | 1 | 1 | 44 | 1 | 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 |
| SERIES (EFFICIENCY) P: PREMIUM | | CONDENSER TYPE & VERSION A: AIR COOLED, 1: VERSION 1 | | APPLICATION TEMPERATURE H: HIGH/MEDIUM: +45°F (+7.2°C) TO +10°F (-12.2°C) SST. M: MEDIUM/LOW: +30°F (-1.1°C) TO -20°F (-29°C) SST. L: LOW: +5°F (-15°C) TO -40°F (-40°C) SST. X: EXTRA LOW: -15°F (-26.1°C) TO -60°F (-51.1°C) SST.* <small>*ONLY FOR DUAL OR TRIPLE COMPRESSORS WITH R-407A REFRIGERANT</small> | | REFRIGERANT 13: R-134A† 44: R-404A 46: R-407A 47: R-407C 48: R-448A 49: R-449A 57: R-507A SR: SPECIAL REFRIGERANT | | CONDENSER, PROTECTION OPTION & FAN TYPE & POSITION: VERTICAL HORIZONTAL ° 1 A: MCHX & AC FAN(S) 2 B: MCHX WITH E-COATING & AC FAN 3 C: MCHX & EC FAN(S) 4 D: MCHX WITH E-COATING & EC FAN(S) 5 E: MCHX WITH MESH PROTECTION & AC FAN(S) 6 F: MCHX WITH E-COATING, MESH PROTECTION & AC FAN(S) 7 G: MCHX WITH MESH PROTECTION & EC FAN(S) 8 H: MCHX WITH E-COATING, MESH PROTECTION & EC FAN(S) <small>°FOR VERTICAL AIR DISCHARGE SELECT A NUMBER (1-8). FOR HORIZONTAL DISCHARGE SELECT A LETTER (A-H). MCHX: MICRO-CHANNEL CONDENSER</small> | | COMPRESSION BRAND & TYPE 1: BITZER SEMI-HERMETIC 7: BITZER SEMI-HERMETIC RECIP. 2-STAGE** **ONLY FOR EXTRA LOW TEMPERATURE APPLICATION S: SPECIAL COMPRESSOR | | | |
| SIZE / CAPACITY SEE TECHNICAL DATA TABLE FOR SELECTION | | CHARACTERISTIC S: SINGLE D: DUAL T: TRIPLE | | | | | | | | | | | |



TECHNICAL DATA - APPLICATION TEMPERATURE

Performance based on Bitzer Ecoline Compressor

SINGLE SEMI-HERMETIC COMPRESSOR

R-404a

H: HIGH/MEDIUM: +45°F (+7.2°C) TO +10°F (-12.2°C) SST.

Table with columns: MODEL, COMPRESSOR, FAN, EVAPORATION CAPACITY MBH AT 95°F AMBIENT (R-404A*), ELECTRICAL DATA 60HZ (230V, 460V, 575V), MECHANICAL DATA (LIQUID RECEIVER CAPACITY, CONNECTIONS, FRAME TYPE, APPROX. DRY WEIGHT).

M: MEDIUM/LOW: +30°F (-1.1°C) TO -20°F (-29°C) SST.

Table with columns: MODEL, COMPRESSOR, FAN, EVAPORATION CAPACITY MBH AT 95°F AMBIENT (R-404A*), ELECTRICAL DATA 60HZ (230V, 460V, 575V), MECHANICAL DATA (LIQUID RECEIVER CAPACITY, CONNECTIONS, FRAME TYPE, APPROX. DRY WEIGHT).

L: LOW: +5°F (-15°C) TO -40°F (-40°C) SST.

Table with columns: MODEL, COMPRESSOR, FAN, EVAPORATION CAPACITY MBH AT 95°F AMBIENT (R-404A*), ELECTRICAL DATA 60HZ (230V, 460V, 575V), MECHANICAL DATA (LIQUID RECEIVER CAPACITY, CONNECTIONS, FRAME TYPE, APPROX. DRY WEIGHT).

X: EXTRA LOW: -15°F (-26.1°C) TO -60°F (-51.1°C) SST.

Table with columns: MODEL, COMPRESSOR, FAN, EVAPORATION CAPACITY MBH AT 95°F AMBIENT (R-404A*), ELECTRICAL DATA 60HZ (230V, 460V, 575V), MECHANICAL DATA (LIQUID RECEIVER CAPACITY, CONNECTIONS, FRAME TYPE, APPROX. DRY WEIGHT).

*See Capacity Correction Factors on PG.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 other compressor(s) + Total FLA Fans + Control panel load
FLA Fan: Full Load Amperage (FLA) of the fans

TECHNICAL DATA - APPLICATION TEMPERATURE

Performance based on Bitzer Ecoline Compressor

DUAL SEMI-HERMETIC COMPRESSORS



R-407a

H: HIGH/MEDIUM: +45°F (+7.2°C) TO +10°F (-12.2°C) SST.

| MODEL | COMPRESSOR | | FAN | | EVAPORATION CAPACITY MBH AT 95°F AMBIENT R-407A* | | | | | | | | ELECTRICAL DATA 60HZ | | | | | | MECHANICAL DATA | | | | | |
|----------|------------|---------|---------|---------|--|-------|-------|-------|-------|--------|--------|--------|----------------------|----------|--------|----------|-------|-----------|-----------------|--------------------------|-------------|------------|------------|-------------------|
| | SIZE | QTY | BITZER | QTY | AC TYPE | +45°F | +40°F | +35°F | +30°F | +25°F | +20°F | +15°F | +10°F | 230 VOLT | | 460 VOLT | | 575 VOLT | | LIQUID RECEIVER CAPACITY | CONNECTIONS | | FRAME TYPE | APROX. DRY WEIGHT |
| | | | | | | UNIT | HP | MODEL | CFM | +7.2°C | +4.4°C | +1.7°C | -1.1°C | -3.9°C | -6.7°C | -9.4°C | -12°C | COMP. RLA | SYSTEM MCA | | COMP. RLA | SYSTEM MCA | | |
| | LB (KG) | IN (mm) | IN (mm) | LB (KG) | LB (KG) | | | | | | | | | | | | | | | | | | | |
| H-0040-D | 4 | 2 | 2GE-2 | 1 | 4200 | 60.6 | 55.0 | 49.8 | 45.0 | 40.2 | 36.1 | 32.0 | 28.6 | 9.8 | 25.9 | 4.3 | 11.7 | 3.3 | 9.1 | 40.6 (18) | 5/8 (16) | 1 1/8 (29) | FS-FM-B-1 | 1,092 (497) |
| H-0050-D | 4 | 2 | 2FE-2 | 1 | 5300 | 76.5 | 69.4 | 62.9 | 56.8 | 50.8 | 45.6 | 40.5 | 35.8 | 9.0 | 26.3 | 4.1 | 12.2 | 3.2 | 9.6 | 40.6 (18) | 5/8 (16) | 1 1/8 (29) | FS-FM-B-1 | 1,092 (497) |
| H-0060-D | 4 | 2 | 2EE-2 | 2 | 8200 | 92.2 | 83.6 | 74.9 | 67.6 | 60.2 | 53.5 | 47.3 | 41.6 | 10.8 | 29.9 | 4.9 | 14.1 | 3.6 | 10.6 | 64.6 (29) | 5/8 (16) | 1 3/8 (35) | FS-FM-B-2 | 1,282 (583) |
| H-0080-D | 6 | 2 | 2DE-3 | 2 | 8200 | 107.2 | 97.1 | 87.8 | 78.5 | 70.7 | 62.8 | 55.5 | 49.0 | 15.3 | 40.0 | 7.2 | 19.3 | 5.1 | 14.0 | 64.6 (29) | 5/8 (16) | 1 3/8 (35) | FS-FM-B-2 | 1,322 (601) |
| H-0100-D | 8 | 2 | 2CE-4 | 2 | 9200 | 129.3 | 117.2 | 106.1 | 95.8 | 85.5 | 76.8 | 68.1 | 60.1 | 18.2 | 48.8 | 8.1 | 22.3 | 6.5 | 17.9 | 93.9 (43) | 7/8 (22) | 1 3/8 (35) | FS-FM-B-2 | 1,353 (615) |
| H-0120-D | 10 | 2 | 4FE-5 | 2 | 10000 | 141.3 | 128.0 | 115.8 | 104.5 | 94.0 | 83.5 | 73.9 | 65.9 | 24.2 | 64.5 | 13.1 | 34.5 | 8.7 | 23.6 | 93.9 (43) | 7/8 (22) | 1 3/8 (35) | FS-FM-B-2 | 1,430 (650) |
| H-0140-D | 12 | 2 | 4EE-6 | 3 | 13500 | 180.5 | 162.1 | 147.9 | 132.2 | 118.9 | 105.7 | 94.5 | 83.3 | 28.1 | 72.8 | 13.4 | 35.3 | 9.4 | 25.2 | 115.6 (53) | 7/8 (22) | 1 5/8 (41) | FS-FM-C-3 | 1,689 (768) |
| H-0160-D | 14 | 2 | 4DE-7 | 3 | 15000 | 211.0 | 189.3 | 171.0 | 154.2 | 138.6 | 123.0 | 109.9 | 96.8 | 31.0 | 83.8 | 15.3 | 41.4 | 11.0 | 30.4 | 115.6 (53) | 7/8 (22) | 1 5/8 (41) | FS-FM-C-3 | 1,754 (797) |

M: MEDIUM/LOW: +30°F (-1.1°C) TO -20°F (-29°C) SST.

| MODEL | COMPRESSOR | | FAN | | EVAPORATION CAPACITY MBH AT 95°F AMBIENT R-407A* | | | | | | | | ELECTRICAL DATA 60HZ | | | | | | MECHANICAL DATA | | | | | |
|----------|------------|---------|---------|---------|--|-------|-------|-------|-------|--------|-------|-------|----------------------|----------|-------|----------|-------|-----------|-----------------|--------------------------|-------------|------------|------------|-------------------|
| | SIZE | QTY | BITZER | QTY | AC TYPE | +30°F | +20°F | +15°F | +5°F | 0°F | -10°F | -15°F | -20°F | 230 VOLT | | 460 VOLT | | 575 VOLT | | LIQUID RECEIVER CAPACITY | CONNECTIONS | | FRAME TYPE | APROX. DRY WEIGHT |
| | | | | | | UNIT | HP | MODEL | CFM | -1.1°C | -7°C | -10°C | -15°C | -18°C | -23°C | -26°C | -29°C | COMP. RLA | SYSTEM MCA | | COMP. RLA | SYSTEM MCA | | |
| | LB (KG) | IN (mm) | IN (mm) | LB (KG) | LB (KG) | | | | | | | | | | | | | | | | | | | |
| M-0050-D | 4 | 2 | 2EE-2 | 1 | 4200 | 60.9 | 48.8 | 43.5 | 34.1 | 29.7 | 22.2 | 18.9 | 16.2 | 10.8 | 28.1 | 4.9 | 13.1 | 3.6 | 9.7 | 40.6 (18) | 5/8 (16) | 1 1/8 (29) | FS-FM-B-1 | 1,207 (549) |
| M-0060-D | 4 | 2 | 2DE-2 | 1 | 5300 | 73.5 | 59.2 | 52.8 | 41.1 | 36.2 | 27.3 | 23.3 | 19.8 | 11.7 | 32.3 | 5.8 | 16.1 | 4.1 | 11.9 | 40.6 (18) | 5/8 (16) | 1 3/8 (35) | FS-FM-B-1 | 1,217 (553) |
| M-0070-D | 4 | 2 | 2CE-3 | 2 | 8200 | 94.1 | 75.3 | 67.4 | 52.8 | 46.2 | 34.8 | 29.9 | 25.5 | 13.4 | 35.8 | 6.3 | 17.3 | 5.1 | 14.0 | 64.6 (29) | 5/8 (16) | 1 3/8 (35) | FS-FM-B-2 | 1,306 (594) |
| M-0080-D | 6 | 2 | 4FE-3 | 2 | 8200 | 111.6 | 93.0 | 84.0 | 68.6 | 61.2 | 48.2 | 42.6 | 37.4 | 18.0 | 46.1 | 8.1 | 21.3 | 6.2 | 16.4 | 64.6 (29) | 5/8 (16) | 1 3/8 (35) | FS-FM-B-2 | 1,360 (618) |
| M-0100-D | 8 | 2 | 4EE-4 | 2 | 10000 | 125.0 | 100.6 | 89.8 | 70.0 | 61.8 | 46.8 | 40.0 | 34.0 | 20.1 | 55.2 | 9.2 | 25.7 | 7.4 | 20.7 | 93.9 (43) | 5/8 (16) | 1 3/8 (35) | FS-FM-B-2 | 1,407 (639) |
| M-0120-D | 10 | 2 | 4DE-5 | 3 | 12250 | 151.3 | 120.6 | 107.7 | 84.0 | 73.2 | 54.7 | 46.8 | 39.7 | 20.6 | 53.8 | 10.8 | 28.5 | 9.0 | 23.6 | 93.9 (43) | 7/8 (22) | 1 3/8 (35) | FS-FM-C-3 | 1,649 (750) |
| M-0140-D | 12 | 2 | 4CE-6 | 3 | 15000 | 183.1 | 147.7 | 132.1 | 102.3 | 89.5 | 68.8 | 59.2 | 50.5 | 25.0 | 70.3 | 14.2 | 39.0 | 11.2 | 30.8 | 115.6 (53) | 7/8 (22) | 1 5/8 (41) | FS-FM-C-3 | 1,733 (788) |

L: LOW: +5°F (-15°C) TO -40°F (-40°C) SST.

| MODEL | COMPRESSOR | | FAN | | EVAPORATION CAPACITY MBH AT 95°F AMBIENT R-407A* | | | | | | | | ELECTRICAL DATA 60HZ | | | | | | MECHANICAL DATA | | | | | |
|----------|------------|---------|---------|---------|--|-------|-------|-------|-------|-------|-------|-------|----------------------|----------|-------|----------|-------|-----------|-----------------|--------------------------|-------------|------------|------------|-------------------|
| | SIZE | QTY | BITZER | QTY | AC TYPE | +10°F | +5°F | 0°F | -10°F | -15°F | -20°F | -30°F | -40°F | 230 VOLT | | 460 VOLT | | 575 VOLT | | LIQUID RECEIVER CAPACITY | CONNECTIONS | | FRAME TYPE | APROX. DRY WEIGHT |
| | | | | | | UNIT | HP | MODEL | CFM | -12°C | -15°C | -18°C | -23°C | -26°C | -29°C | -35°C | -40°C | COMP. RLA | SYSTEM MCA | | COMP. RLA | SYSTEM MCA | | |
| | LB (KG) | IN (mm) | IN (mm) | LB (KG) | LB (KG) | | | | | | | | | | | | | | | | | | | |
| L-0040-D | 4 | 2 | 2DE-2 | 1 | 4200 | 44.9 | 39.7 | 35.0 | 26.3 | 22.7 | 19.2 | 13.2 | 8.3 | 11.7 | 30.1 | 5.8 | 15.1 | 4.2 | 11.1 | 40.6 (18) | 5/8 (16) | 1 3/8 (35) | FS-FM-B-1 | 1,207 (549) |
| L-0050-D | 4 | 2 | 2CE-3 | 1 | 5300 | 55.9 | 49.6 | 43.8 | 33.2 | 28.8 | 24.5 | 17.2 | 11.3 | 13.4 | 36.2 | 6.3 | 17.2 | 5.1 | 13.9 | 40.6 (18) | 5/8 (16) | 1 3/8 (35) | FS-FM-B-1 | 1,227 (558) |
| L-0060-D | 6 | 2 | 4FE-3 | 1 | 5300 | 61.0 | 54.1 | 47.7 | 36.7 | 31.9 | 27.1 | 19.1 | 12.8 | 18.0 | 46.5 | 8.1 | 21.2 | 6.2 | 16.4 | 40.6 (18) | 5/8 (16) | 1 3/8 (35) | FS-FM-B-2 | 1,281 (582) |
| L-0080-D | 8 | 2 | 4EE-4 | 2 | 8200 | 78.2 | 69.3 | 60.4 | 45.6 | 39.5 | 33.5 | 23.0 | 14.8 | 20.1 | 50.8 | 9.2 | 23.8 | 7.4 | 19.1 | 64.6 (29) | 5/8 (16) | 1 3/8 (35) | FS-FM-B-2 | 1,368 (622) |
| L-0100-D | 10 | 2 | 4DE-5 | 2 | 8200 | 88.8 | 78.5 | 69.1 | 52.7 | 45.0 | 38.6 | 26.8 | 17.2 | 20.6 | 52.0 | 10.8 | 27.4 | 9.0 | 22.7 | 64.6 (29) | 5/8 (16) | 1 3/8 (35) | FS-FM-B-2 | 1,383 (628) |
| L-0120-D | 12 | 2 | 4CE-6 | 2 | 10000 | 109.4 | 97.0 | 85.6 | 64.9 | 56.3 | 48.5 | 34.2 | 22.9 | 25.0 | 66.3 | 14.2 | 37.0 | 11.2 | 29.2 | 64.6 (29) | 5/8 (16) | 1 5/8 (41) | FS-FM-C-3 | 1,609 (731) |
| L-0140-D | 14 | 2 | 4VE-7 | 2 | 9550 | 111.7 | 98.4 | 86.3 | 65.0 | 55.0 | 46.7 | 31.3 | 19.4 | 24.4 | 62.7 | 12.2 | 31.5 | 9.6 | 24.8 | 64.6 (29) | 5/8 (16) | 1 5/8 (41) | FS-FM-C-3 | 1,791 (814) |
| L-0150-D | 18 | 2 | 4TE-9 | 3 | 12250 | 138.8 | 122.8 | 106.8 | 81.4 | 69.3 | 59.4 | 39.5 | 25.0 | 28.2 | 73.1 | 14.1 | 36.8 | 12.2 | 31.5 | 93.9 (43) | 7/8 (22) | 2 1/8 (54) | FS-FM-C-4 | 1,906 (866) |
| L-0180-D | 24 | 2 | 4PE-12 | 3 | 15000 | 156.0 | 137.4 | 120.5 | 90.8 | 76.8 | 65.2 | 42.8 | 26.5 | 34.6 | 91.9 | 17.3 | 45.9 | 14.4 | 38.0 | 93.9 (43) | 7/8 (22) | 2 1/8 (54) | FS-FM-C-5 | 1,942 (883) |
| L-0220-D | 28 | 2 | 4NE-14 | 3 | 15000 | 180.6 | 159.5 | 140.1 | 106.2 | 91.5 | 78.1 | 54.2 | 34.3 | 39.7 | 103.3 | 19.9 | 51.8 | 15.9 | 41.4 | 115.6 (53) | 7/8 (22) | 2 1/8 (54) | FS-FM-C-6 | 2,004 (911) |

*See Capacity Correction Factors on PG.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 other compressor(s) + Total FLA Fans + Control panel load
FLA Fan: Full Load Amperage (FLA) of the fans

Performance based on Bitzer EcoLine Compressor

TECHNICAL DATA - APPLICATION TEMPERATURE



TRIPLE SEMI-HERMETIC COMPRESSORS

R-407a

H: HIGH/MEDIUM: +45°F (+7.2°C) TO +10°F (-12.2°C) SST.

| MODEL | COMPRESSOR | | FAN | | EVAPORATION CAPACITY MBH AT 95°F AMBIENT R-407A* | | | | | | | | ELECTRICAL DATA 60HZ | | | | | | MECHANICAL DATA | | | | | | | | | |
|----------|------------|-----|--------|---------|--|-------|-------|-------|-------|-------|-------|-------|----------------------|-------|-----------|------------|-----------|------------|-----------------|------------|--------------------------|-------------|------|------------|-------------------|-----------|-------|-------|
| | SIZE | QTY | BITZER | AC TYPE | QTY | CFM | +45°F | +40°F | +35°F | +30°F | +25°F | +20°F | +15°F | +10°F | 230 VOLT | | 460 VOLT | | 575 VOLT | | LIQUID RECEIVER CAPACITY | CONNECTIONS | | FRAME TYPE | APROX. DRY WEIGHT | | | |
| | | | | | | | +45°F | +40°F | +35°F | +30°F | +25°F | +20°F | +15°F | +10°F | COMP. RLA | SYSTEM MCA | COMP. RLA | SYSTEM MCA | COMP. RLA | SYSTEM MCA | | LB | (KG) | | IN | (mm) | IN | (mm) |
| H-0060-T | 6 | 3 | 2GE-2 | 1 | 5800 | 90.9 | 81.8 | 74.0 | 66.9 | 60.2 | 53.6 | 48.0 | 42.4 | 9.8 | 37.9 | 4.3 | 17.0 | 3.3 | 13.1 | 64.6 | (29) | 5/8 | (15) | 1 3/8 | (35) | FS-FM-C-1 | 1,483 | (674) |
| H-0080-T | 9 | 3 | 2FE-3 | 2 | 8200 | 115.7 | 105.0 | 95.1 | 85.2 | 76.8 | 68.4 | 60.7 | 53.7 | 11.3 | 42.3 | 5.1 | 19.7 | 4.4 | 16.8 | 64.6 | (29) | 5/8 | (22) | 1 3/8 | (35) | FS-FM-C-2 | 1,547 | (703) |
| H-0100-T | 9 | 3 | 2EE-3 | 2 | 9550 | 134.9 | 122.2 | 109.4 | 98.6 | 88.6 | 78.7 | 69.5 | 61.2 | 14.0 | 53.3 | 6.5 | 25.2 | 5.3 | 20.5 | 64.6 | (29) | 5/8 | (22) | 1 3/8 | (35) | FS-FM-C-2 | 1,700 | (773) |
| H-0110-T | 9 | 3 | 2DE-3 | 2 | 11100 | 158.0 | 143.2 | 129.4 | 116.7 | 104.0 | 93.2 | 82.5 | 72.7 | 15.3 | 59.7 | 7.2 | 28.4 | 5.1 | 20.6 | 93.9 | (43) | 7/8 | (22) | 1 3/8 | (35) | FS-FM-C-2 | 1,700 | (773) |
| H-0140-T | 12 | 3 | 2CE-4 | 3 | 15000 | 195.5 | 177.4 | 160.6 | 143.7 | 129.4 | 115.2 | 103.1 | 91.0 | 18.2 | 73.2 | 8.1 | 33.3 | 6.5 | 26.7 | 93.9 | (43) | 7/8 | (22) | 1 5/8 | (41) | FS-FM-C-3 | 1,778 | (808) |
| H-0150-T | 15 | 3 | 4FE-5 | 3 | 15000 | 212.0 | 192.1 | 173.7 | 156.7 | 141.0 | 125.3 | 110.9 | 98.8 | 24.2 | 92.7 | 13.1 | 49.6 | 8.7 | 33.9 | 115.6 | (53) | 7/8 | (22) | 1 5/8 | (41) | FS-FM-C-3 | 1,938 | (881) |

TRIPLE COMPRESSORS

M: MEDIUM/LOW: +30°F (-1.1°C) TO -20°F (-29°C) SST.

| MODEL | COMPRESSOR | | FAN | | EVAPORATION CAPACITY MBH AT 95°F AMBIENT R-407A* | | | | | | | | ELECTRICAL DATA 60HZ | | | | | | MECHANICAL DATA | | | | | | | | | |
|----------|------------|-----|--------|---------|--|-------|-------|-------|-------|------|------|-------|----------------------|-------|-----------|------------|-----------|------------|-----------------|------------|--------------------------|-------------|------|------------|-------------------|-----------|-------|-------|
| | SIZE | QTY | BITZER | AC TYPE | QTY | CFM | +30°F | +20°F | +15°F | +5°F | 0°F | -10°F | -15°F | -20°F | 230 VOLT | | 460 VOLT | | 575 VOLT | | LIQUID RECEIVER CAPACITY | CONNECTIONS | | FRAME TYPE | APROX. DRY WEIGHT | | | |
| | | | | | | | +30°F | +20°F | +15°F | +5°F | 0°F | -10°F | -15°F | -20°F | COMP. RLA | SYSTEM MCA | COMP. RLA | SYSTEM MCA | COMP. RLA | SYSTEM MCA | | LB | (KG) | | IN | (mm) | IN | (mm) |
| M-0040-T | 4.5 | 3 | 2HE-1 | 1 | 4250 | 55.9 | 44.7 | 40.0 | 31.3 | 27.3 | 20.5 | 17.5 | 14.9 | 6.5 | 24.9 | 3.1 | 12.1 | 2.4 | 9.4 | 64.6 | (29) | 1/2 | (16) | 1 1/8 | (29) | FS-FM-C-1 | 1,483 | (674) |
| M-0060-T | 6 | 3 | 2FE-2 | 1 | 5800 | 81.5 | 65.3 | 58.4 | 45.8 | 40.5 | 30.5 | 26.5 | 22.6 | 9.0 | 35.3 | 4.1 | 18.3 | 3.2 | 12.8 | 64.6 | (29) | 5/8 | (22) | 1 3/8 | (35) | FS-FM-C-1 | 1,493 | (678) |
| M-0070-T | 6 | 3 | 2EE-2 | 2 | 8200 | 95.9 | 75.6 | 68.1 | 53.0 | 46.1 | 34.2 | 29.2 | 24.6 | 10.8 | 40.7 | 4.9 | 19.0 | 3.6 | 14.2 | 64.6 | (29) | 5/8 | (22) | 1 3/8 | (35) | FS-FM-C-2 | 1,682 | (765) |
| M-0090-T | 6 | 3 | 2DE-2 | 2 | 8200 | 110.3 | 88.7 | 79.2 | 61.7 | 54.3 | 40.5 | 35.0 | 29.6 | 11.7 | 43.6 | 5.8 | 22.0 | 4.2 | 16.1 | 64.6 | (29) | 5/8 | (22) | 1 3/8 | (35) | FS-FM-C-2 | 1,682 | (765) |
| M-0110-T | 9 | 3 | 2CE-3 | 2 | 11100 | 138.6 | 111.9 | 99.1 | 77.6 | 67.9 | 51.6 | 44.3 | 37.8 | 13.4 | 53.6 | 6.3 | 25.5 | 5.1 | 20.6 | 93.9 | (43) | 7/8 | (22) | 1 5/8 | (42) | FS-FM-C-2 | 1,738 | (790) |
| M-0120-T | 9 | 3 | 4FE-3 | 3 | 12250 | 154.3 | 123.4 | 110.4 | 86.5 | 76.5 | 57.7 | 49.6 | 42.3 | 18.0 | 68.1 | 8.1 | 31.4 | 6.2 | 24.2 | 93.9 | (43) | 7/8 | (22) | 1 5/8 | (42) | FS-FM-C-3 | 1,860 | (845) |
| M-0150-T | 12 | 3 | 4EE-4 | 3 | 15000 | 189.3 | 150.9 | 133.3 | 105.0 | 92.7 | 70.1 | 60.1 | 51.0 | 20.1 | 79.3 | 9.2 | 36.9 | 7.4 | 29.7 | 93.9 | (43) | 7/8 | (22) | 1 5/8 | (42) | FS-FM-C-3 | 1,872 | (851) |

TRIPLE COMPRESSORS

L: LOW: +5°F (-15°C) TO -40°F (-40°C) SST.

| MODEL | COMPRESSOR | | FAN | | EVAPORATION CAPACITY MBH AT 95°F AMBIENT R-407A* | | | | | | | | ELECTRICAL DATA 60HZ | | | | | | MECHANICAL DATA | | | | | | | | | |
|----------|------------|-----|--------|---------|--|-------|-------|-------|------|-------|-------|-------|----------------------|-------|-----------|------------|-----------|------------|-----------------|------------|--------------------------|-------------|------|------------|-------------------|-----------|-------|-------|
| | SIZE | QTY | BITZER | AC TYPE | QTY | CFM | +10°F | +5°F | 0°F | -10°F | -15°F | -20°F | -30°F | -40°F | 230 VOLT | | 460 VOLT | | 575 VOLT | | LIQUID RECEIVER CAPACITY | CONNECTIONS | | FRAME TYPE | APROX. DRY WEIGHT | | | |
| | | | | | | | +10°F | +5°F | 0°F | -10°F | -15°F | -20°F | -30°F | -40°F | COMP. RLA | SYSTEM MCA | COMP. RLA | SYSTEM MCA | COMP. RLA | SYSTEM MCA | | LB | (KG) | | IN | (mm) | IN | (mm) |
| L-0070-T | 6 | 3 | 2EE-2 | 1 | 4250 | 54.1 | 48.3 | 42.4 | 32.1 | 27.2 | 23.2 | 16.0 | 9.8 | 10.8 | 38.9 | 4.9 | 18.0 | 3.6 | 13.3 | 64.6 | (29) | 5/8 | (16) | 1 3/8 | (35) | FS-FM-C-1 | 1,633 | (742) |
| L-0080-T | 6 | 3 | 2DE-2 | 1 | 5800 | 66.7 | 58.9 | 51.8 | 39.5 | 33.6 | 28.8 | 19.9 | 12.5 | 11.7 | 44.0 | 5.8 | 21.9 | 4.2 | 16.1 | 64.6 | (29) | 5/8 | (16) | 1 3/8 | (35) | FS-FM-C-1 | 1,643 | (747) |
| L-090-T | 9 | 3 | 2CE-3 | 2 | 8200 | 84.8 | 74.4 | 65.6 | 49.8 | 43.2 | 36.8 | 25.9 | 16.9 | 13.4 | 49.2 | 6.3 | 23.6 | 5.1 | 19.1 | 64.6 | (29) | 5/8 | (16) | 1 3/8 | (35) | FS-FM-C-2 | 1,697 | (771) |
| L-0100-T | 9 | 3 | 4FE-3 | 2 | 8200 | 92.5 | 82.0 | 72.4 | 55.0 | 47.8 | 40.7 | 29.1 | 19.2 | 18.0 | 64.1 | 8.1 | 29.4 | 6.2 | 22.6 | 64.6 | (29) | 5/8 | (16) | 1 3/8 | (35) | FS-FM-C-2 | 1,778 | (808) |
| L-0140-T | 12 | 3 | 4EE-4 | 2 | 11100 | 114.8 | 101.6 | 89.5 | 67.6 | 58.5 | 49.6 | 34.6 | 22.3 | 20.1 | 75.3 | 9.2 | 34.9 | 7.4 | 28.1 | 93.9 | (43) | 7/8 | (22) | 1 5/8 | (42) | FS-FM-C-2 | 1,831 | (832) |
| L-0160-T | 15 | 3 | 4DE-5 | 3 | 13500 | 134.7 | 119.1 | 104.9 | 79.1 | 68.4 | 57.9 | 40.2 | 25.8 | 20.6 | 78.8 | 10.8 | 41.2 | 9.0 | 34.1 | 115.6 | (53) | 7/8 | (22) | 1 5/8 | (42) | FS-FM-C-3 | 1,932 | (878) |
| L-0200-T | 18 | 3 | 4CE-6 | 3 | 15000 | 164.1 | 145.4 | 128.3 | 98.5 | 84.5 | 71.9 | 51.3 | 34.4 | 25.0 | 95.3 | 14.2 | 53.2 | 11.1 | 41.7 | 115.6 | (53) | 7/8 | (22) | 2 1/8 | (54) | FS-FM-C-3 | 1,968 | (895) |

TRIPLE COMPRESSORS

*See Capacity Correction Factors on PG.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 other 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-404A & R-507A | 1.32 | 1.28 | 1.23 | 1.19 | 1.15 | 1.10 | 1.05 | 1.00 | 0.95 | 0.90 | 0.85 | 0.81 | 0.76 | 0.72 |
| Capacity Factor R-407A & R-407C | 1.29 | 1.25 | 1.21 | 1.17 | 1.12 | 1.08 | 1.04 | 1.00 | 0.97 | 0.92 | 0.87 | 0.83 | 0.79 | 0.75 |

Some limitations on models with high SST.

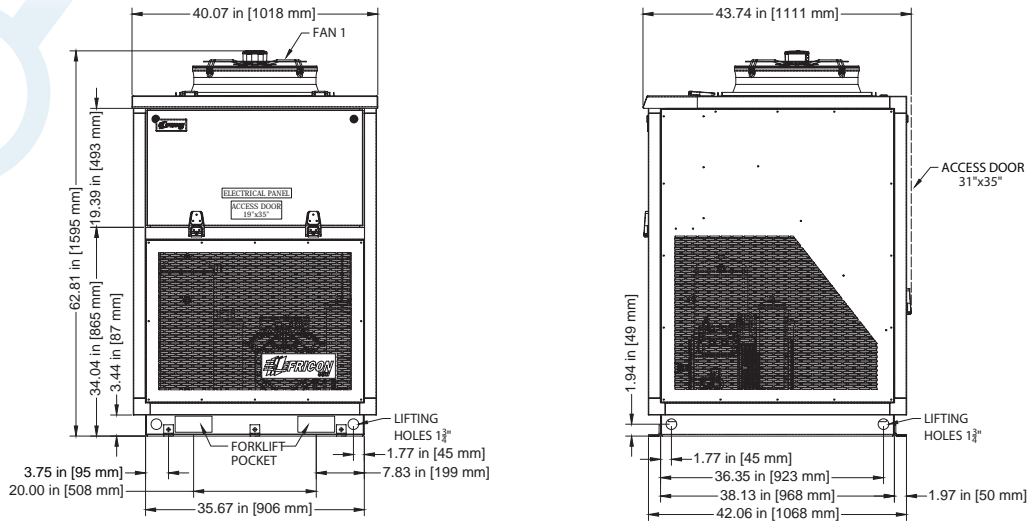
HAOP (High Ambient Operation Package) required for operation above +110°F

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

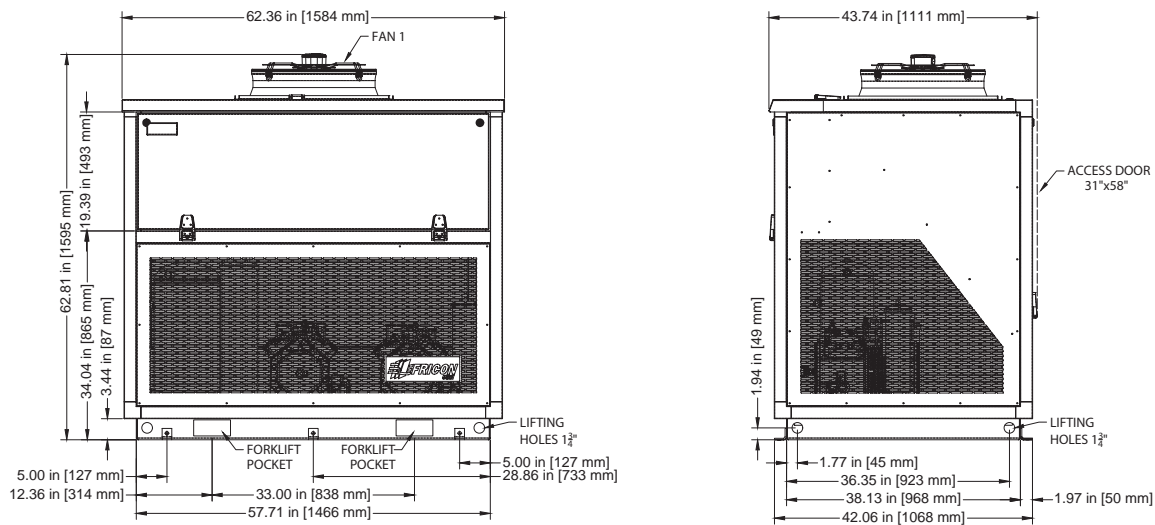
All capacities are calculated at 20°F return gas temperature and dew point values

DRAWING REFERENCE - FRAME TYPE

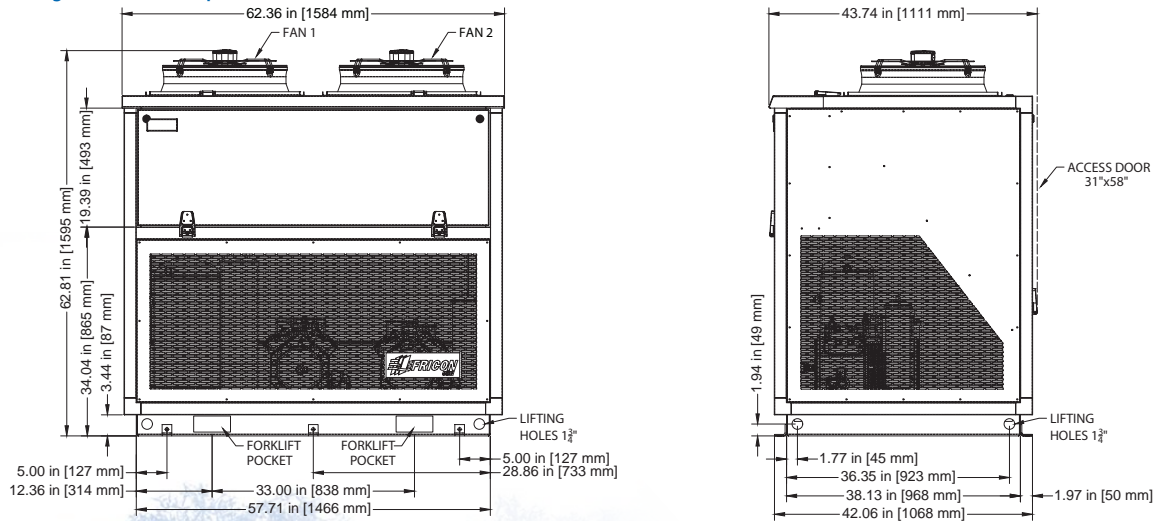
FS-FM-A-1: Single Compressor, 1 Fan



FS-FM-B-1: Single or Dual Compressor(s), 1 Fan

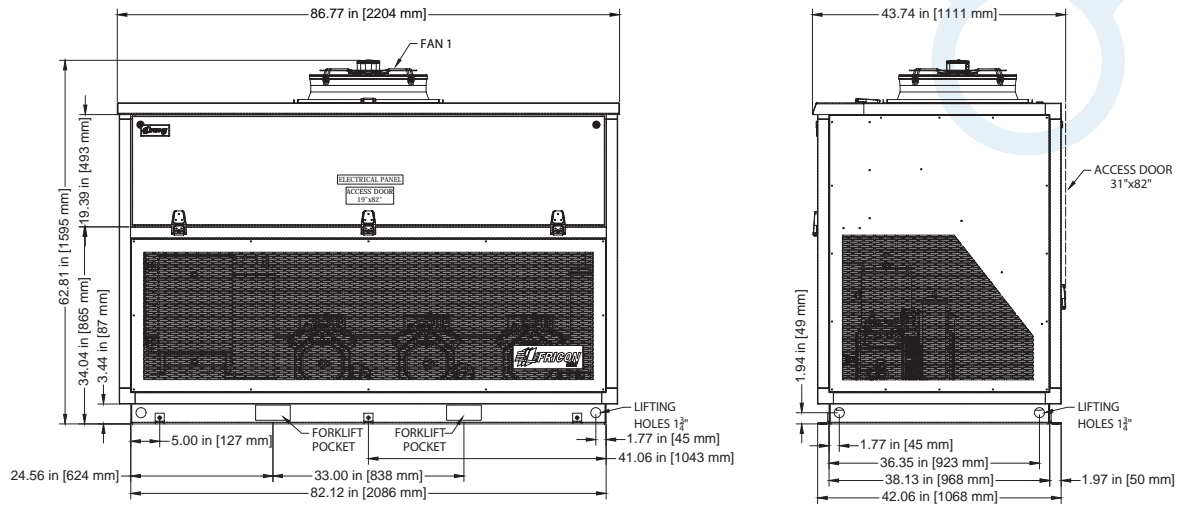


FS-FM-B-2: Single or Dual Compressor(s), 2 Fans

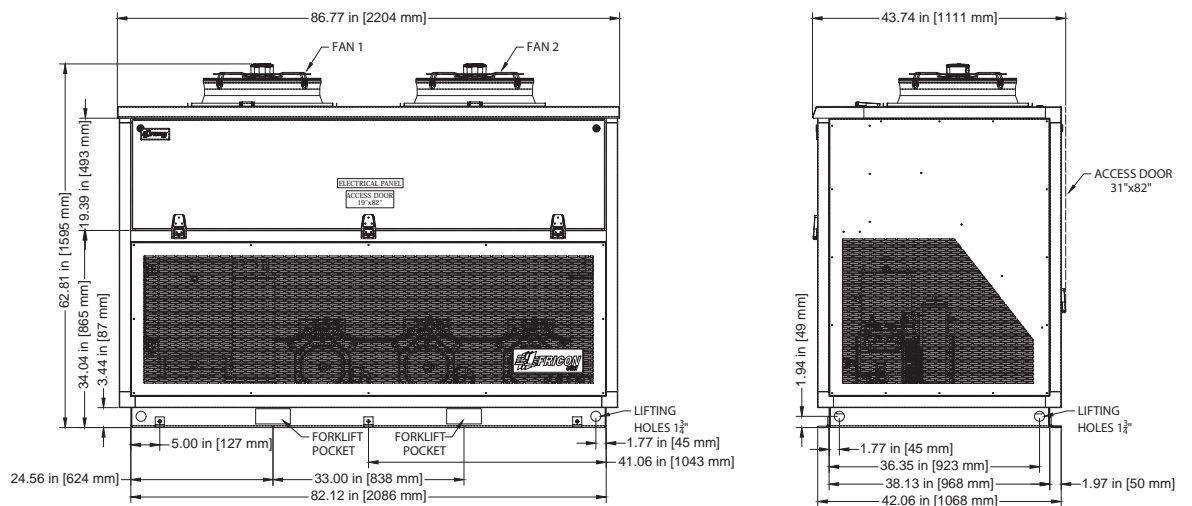


DRAWING REFERENCE - FRAME TYPE

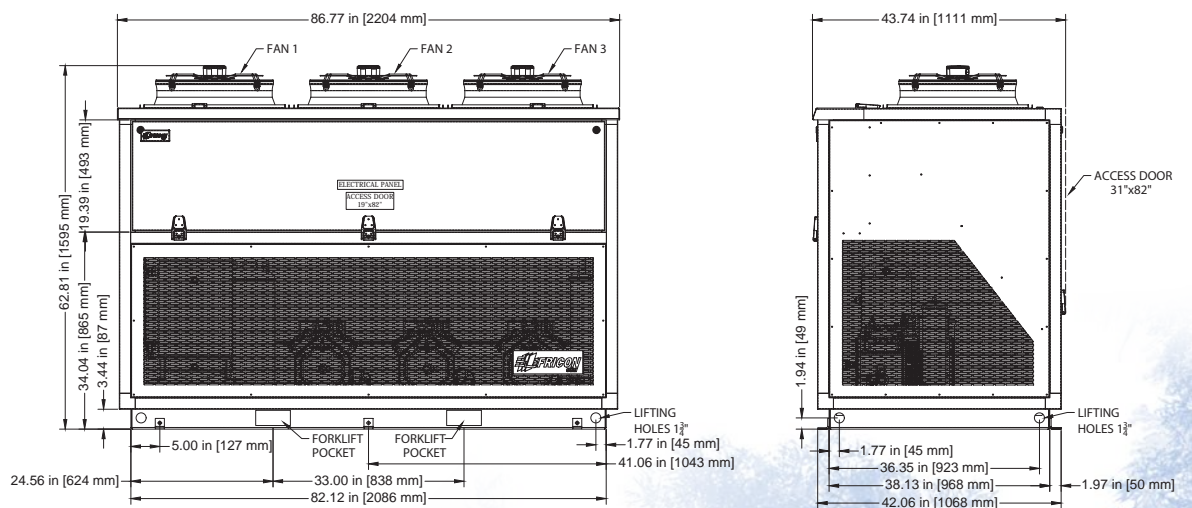
FS-FM-C-1: FS-FM-A-1: Triple Compressors, 1 Fan



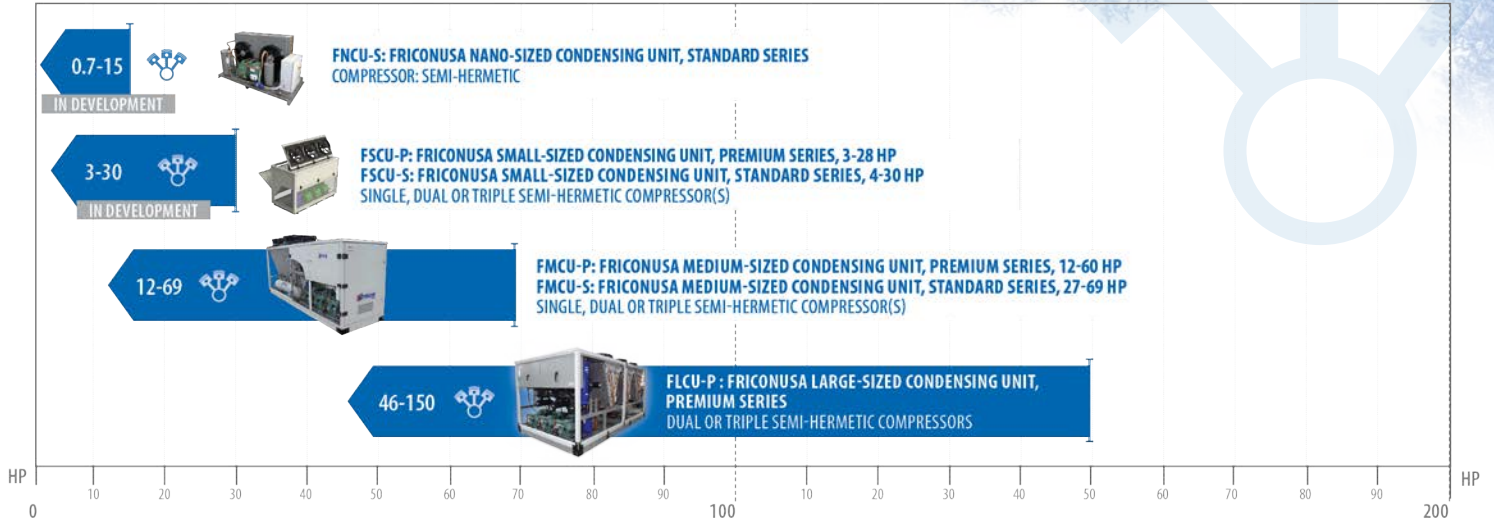
FS-FM-C-2: Dual or Triple Compressors, 2 Fans



FS-FM-C-3: Dual or Triple Compressors, 3 Fans



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