



Liebert® XDCF

User Manual

10kW / 2.8 Tons / 34,000 BTUh

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Technical Support Site

If you encounter any installation or operational issues with your product, check the pertinent section of this manual to see if the issue can be resolved by following outlined procedures.

Visit <https://www.vertiv.com/en-us/support/> for additional assistance.

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1 Important Safety Guidelines

Save These Instructions



CAUTION: Risk of piping and component rupture. May cause injury or equipment damage.

Closing service valves may isolate liquid refrigerant, causing high pressure and rupture of piping. Do not close valves without follow recommended procedures for repair, maintenance and replacement of components. Installing pressure relief valves in field piping that may become isolated by service valves.

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2 Vertiv™ Liebert® XDCF Component Locations and Model Number Nomenclature

Figure 2.1 Liebert® XDCF component locations

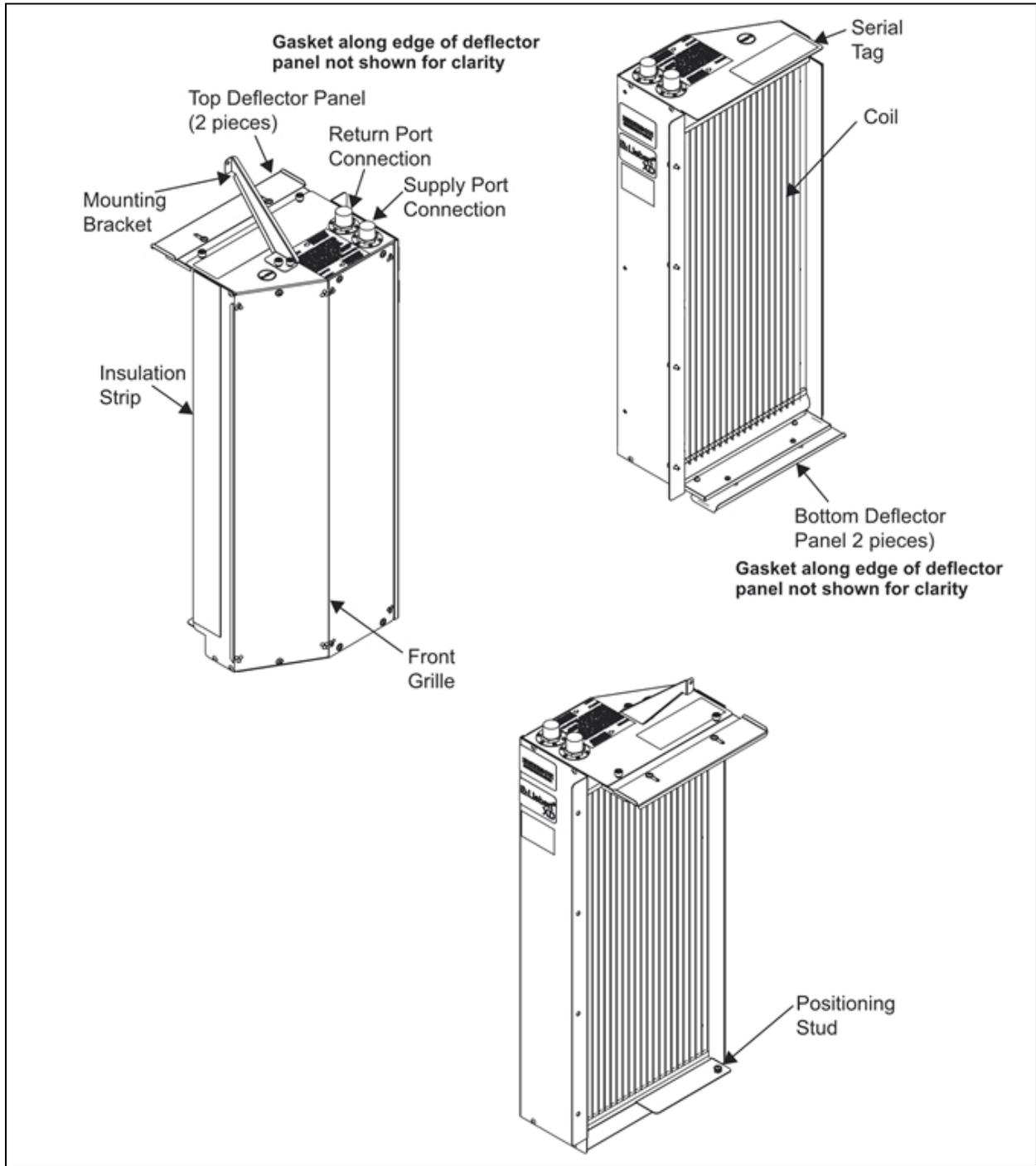
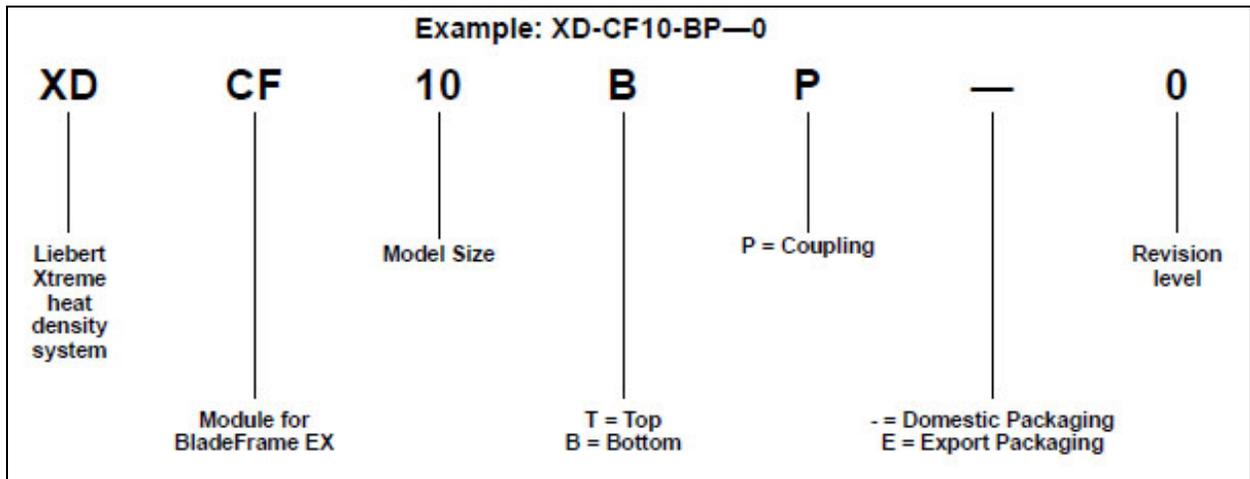


Figure 2.2 Model number nomenclature



Fluorinated Greenhouse Gas Requirements—European Union

Stationary air conditioning, refrigeration, heat pump equipments and stationary fire protection systems in the European Community market and operating with fluorinated greenhouse gases (f-gas), such as R407C, R134a, R410A, must comply with the F-Gas Regulation: (EC) No. 842/2006 (F-gas). The regulation prohibits, among other actions, venting fluorinated greenhouse gases to the atmosphere.

The F-Gas Regulation also requires operators to use all measures that are technically feasible and do not entail disproportionate cost to prevent leakage of these gases, to test for leakage regularly and to recover f-gas during equipment service and maintenance and before disposing of equipment.

Refer to the full regulation for additional details.

3 General product information

The Vertiv™ Liebert® XDCF is a self-contained module designed to cool Egenera's BladeFrame EX cabinets and equipment without exhausting heat into the room.

Liebert® XDCF modules consist of a sheet-metal frame, coil and filter dryer. It has no moving parts and needs no electricity.

The Liebert® XDCF system consists of:

- Liebert® XDCF modules—upper and lower models are available
- Vertiv™ Liebert® XD Flex Pipe (optional)—connects Liebert® XDCF units to supply and return piping (ships with Liebert® XDCF)
- Liebert® XD Piping—delivers R-134a refrigerant through flexible piping
- Vertiv™ Liebert® XDP or Vertiv™ Liebert® XDC—supplies R-134a refrigerant to Liebert® XDCF modules.

(see Liebert® XDP or Liebert® XDC user manual for required chiller or drycooler)

Liebert® XDCF modules attach to the rear of the Egenera BladeFrame EX cabinet. Heated air from the BladeFrame cabinet is exhausted through the Liebert® XDCF, which absorbs the heat. The cooled air passes into the room and the heat is carried away by the Liebert® XDCF's R-134a refrigerant.

3.1 References

This document must be used together with site-specific documentation and documentation for other parts of the system.

3.2 Parts Included With Liebert® XDCF

- Installation manual (this document)
- Liebert® XDCF module
- Mounting kit parts with the following items:

Lower Module		Upper Module	
Part	Qty	Part	Qty
Lower mounting bracket	1	Top unit mounting angle	1
Top deflector panel (two-pieces)	1	Bottom deflector panel (two-pieces)	1
Liebert® XD Flex Pipe retainers	3	Liebert® XD Flex Pipe retainers	3
10-32 screws	3	10-32 screws	2
10-32 nut	2	10-32 nut	1
Liebert® XD Flex Pipe support panel	1		

3.3 Room Preparation

The room should be well insulated and must have a sealed vapor barrier. The vapor barrier in the ceiling and walls can be a polyethylene film. Paint on concrete walls and floors should contain either rubber or plastic.

NOTE: The vapor barrier is the single most important requirement for maintaining environmental control in the conditioned space.

Outside or fresh air should be kept to a minimum when temperature and humidity must be tightly controlled. Outside air adds to the cooling, heating, dehumidifying and humidifying loads of the site. Doors should be properly sealed to minimize leaks and should not contain ventilation grilles.

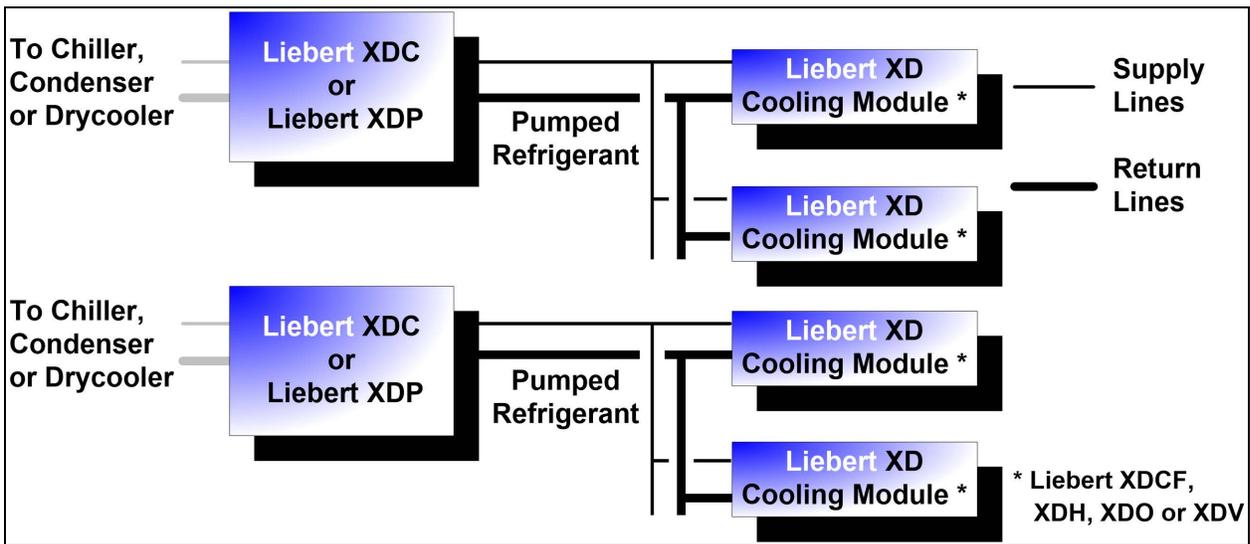
3.4 Product/System Description

Upper and lower modules may be mounted on the rear of the Egenera BladeFrame. Each module, when attached to a fully loaded BladeFrame EX rack, has a nominal cooling capacity of 10kW (2.8 tons; 34,000 BTUh). Performance is based on:

- Entering fluid temperature—55°F (12.8°C) and
- Dew point—50°F (10°C) or lower.

The complete system consists of Vertiv™ Liebert® XDCF modules, piping and Vertiv™ Liebert® XDP or Vertiv™ Liebert® XDC (see Figure 3.1 below).

Figure 3.1 Liebert® XDCF hydraulic diagram



3.5 Equipment Inspection

Upon arrival of the unit, and before unpacking it, verify that the labeled equipment matches the bill of lading. Inspect all items for either visible or concealed damage. Damage should be immediately reported to the carrier and a damage claim filed with a copy sent to Liebert Corporation or to your sales representative.



CAUTION: Risk of sudden refrigerant discharge! Can cause loss of charge and minor injury.

Each Vertiv™ Liebert® XDCF unit is shipped with a full charge of R-134a refrigerant under pressure. Do not remove the pipe caps or plugs before the unit is attached to an Egenera BladeFrame and ready for connection to Vertiv™ Liebert® XD Piping.

Supply and return fittings on the Liebert® XDCF are one-shot connections. Do not disconnect one-shot connections after they have been connected. Disconnection will release pressurized R-134a refrigerant from the Liebert® XDCF.

3.5.1 Unit Handling

When unpacking and handling the unit, exercise extra care to prevent damage.

If multiple Liebert® XDCF units are delivered, they will be shipped on a pallet. A pallet jack will be required to move these units to the installation location. When using a pallet jack, ensure that it has the size and length needed for safe handling of the pallet.

3.6 Unpacking the Liebert® XDCF

The unit is shipped in a protective package. Do not remove the packaging from the Liebert® XDCF before it is at the installation location.

- When unpacking and handling the Liebert® XDCF, care should be taken to prevent damaging the coils.
- Remove outer packaging when ready to install the Liebert® XDCF.
- Do not use unit piping to lift or move the Liebert® XDCF.

3.6.1 Recyclable Packaging

All material used to package this unit is recyclable. Please save for future use or dispose of the material appropriately.



CAUTION: Risk of sharp edges, splinters and exposed fasteners! Can cause personal injury!

Only properly trained personnel wearing appropriate safety headgear, gloves, shoes and glasses should attempt to move, lift, remove packaging from, or prepare unit for installation.

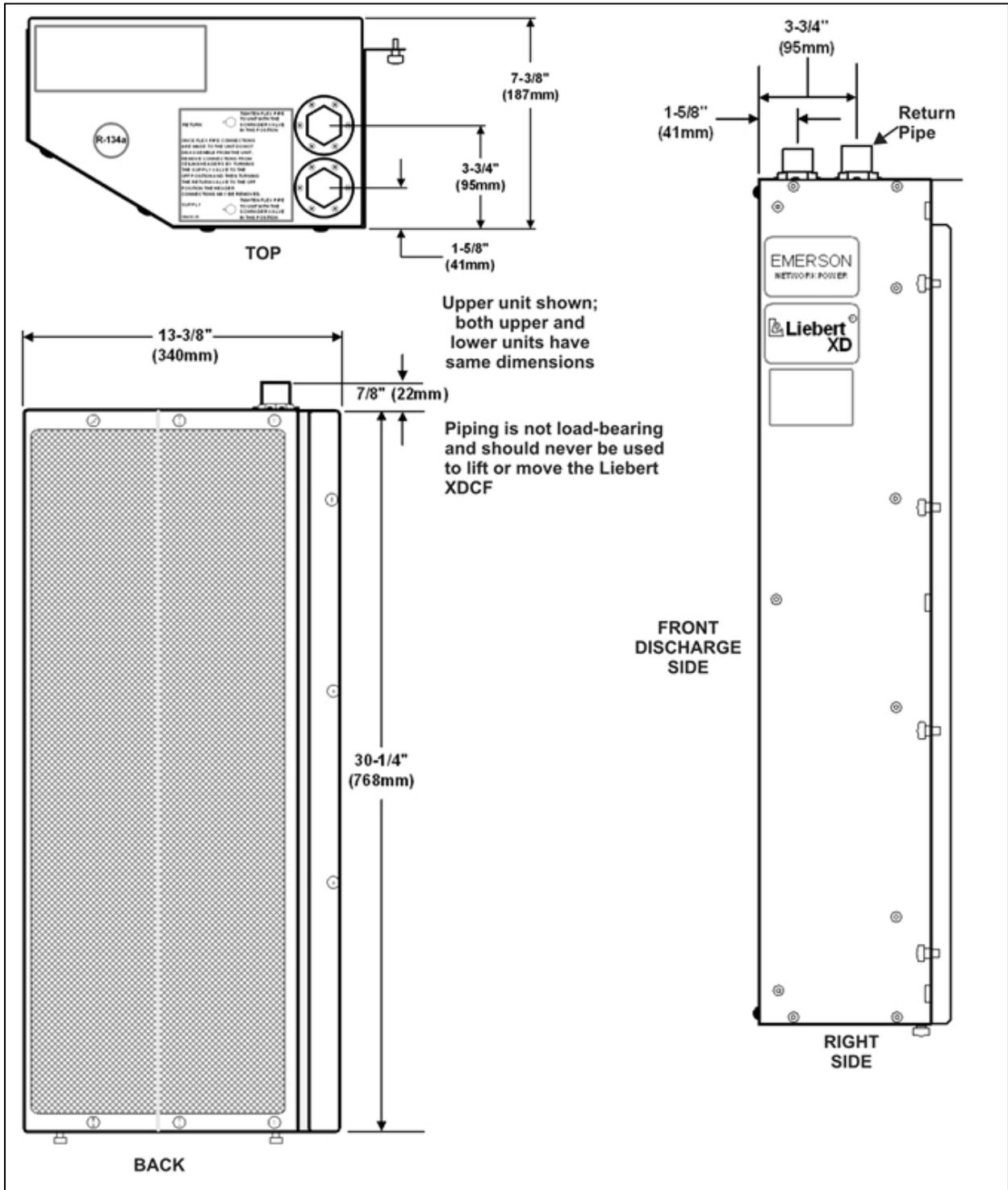
NOTICE

Risk of unit damage if improperly stored. Keep the unit indoors and protected from dampness, freezing temperatures and contact damage.

4 Mechanical Considerations

The Vertiv™ Liebert® XDCF is engineered to fit on the rear of the Egenera BladeFrame enclosure. **Figure 4.1** on the next page , illustrates the unit's dimensions and the location of pipes. **Figure 5.1** on page 11 shows the attachment positions of each module.

Figure 4.1 Overall dimensions



5 Installation

5.1 References

This document must be used together with site-specific documentation and documentation for other parts of the system.

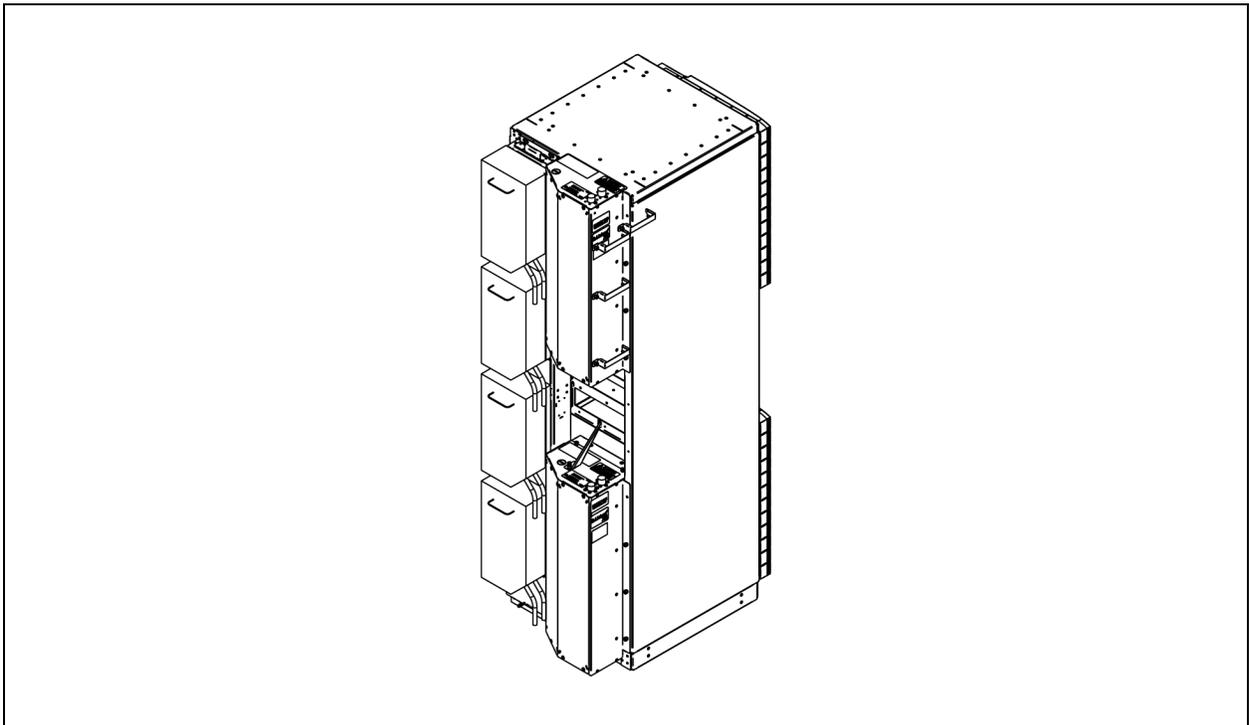
5.2 Installation Considerations

Vertiv™ Liebert® XDCF modules must be securely mounted to the rear of the Egenera BladeFrame cabinet. No cutting or drilling is required to attach the modules; all mounting holes, slots and pins required are fabricated at the factory.

If only one Liebert® XDCF will be attached to an Egenera BladeFrame cabinet, Liebert recommends using the lower Liebert® XDCF module. If both an upper and a lower Liebert® XDCF module will be attached, attach the lower unit first.

Liebert® XDCF modules attach beside the power modules on the rear of the Egenera BladeFrame (see **Figure 5.1** below).

Figure 5.1 Liebert® XDCF unit mounting locations



5.3 Mounting Lower Liebert® XDCF Module

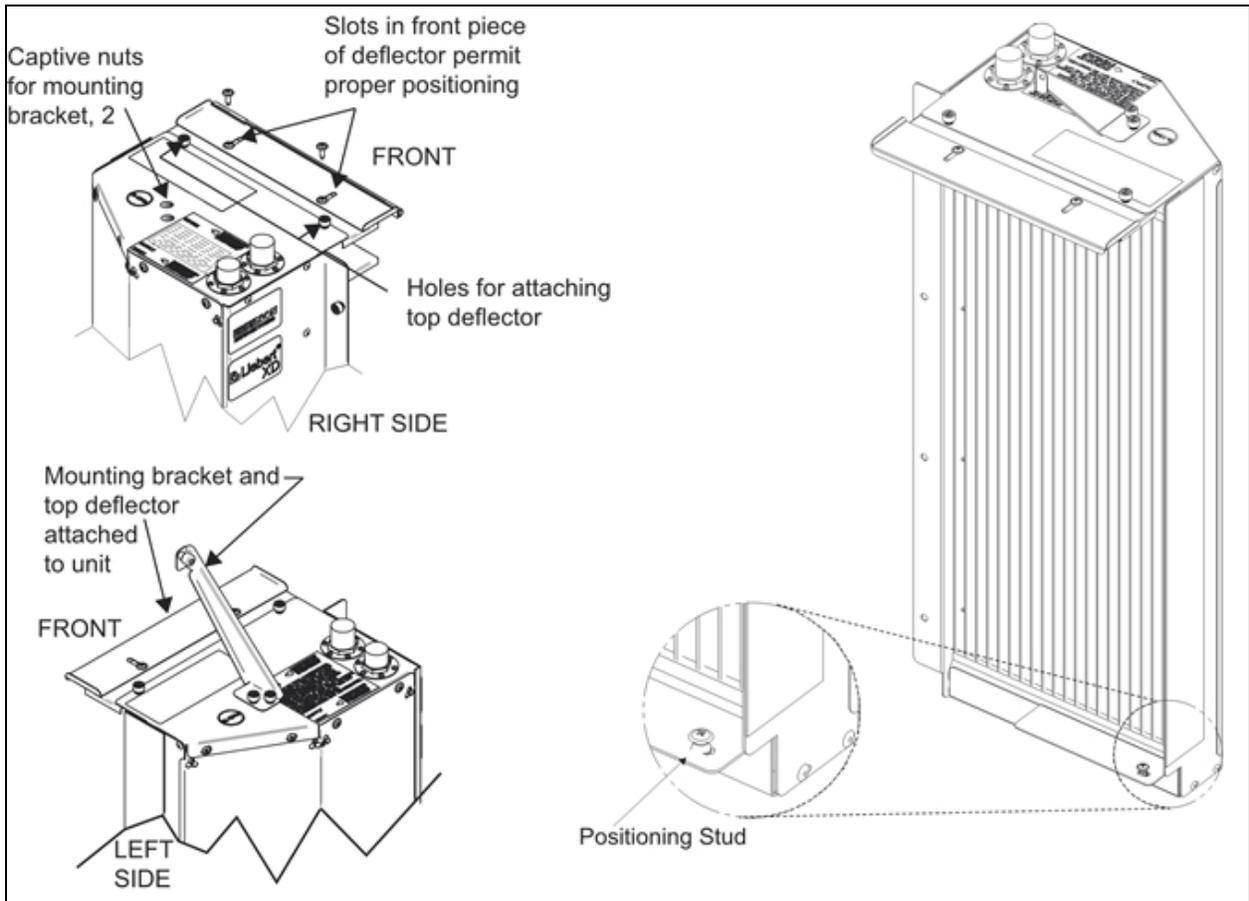
The lower Liebert® XDCF module attaches to the Egenera BladeFrame cabinet with a mounting bracket, four bolts and a metal stud.

Before the Liebert® XDCF is mounted, the mounting bracket and a two-piece deflector panel must be attached to its top surface and insulation must be applied to the left side.

5.3.1 Preparing the Lower Module for Attachment

1. Position the mounting bracket over the two mounting holes. The holes are near the center of the top of the Vertiv™ Liebert® XDCF module (see **Figure 5.2** below).
2. Use two captive panel fasteners to attach the mounting bracket to the top of the Liebert® XDCF module. Tighten the fasteners securely, using a screwdriver, either a blade-type or Phillips.
3. Position the top deflector over the two mounting holes along the front edge of the top of the lower Liebert® XDCF module (see **Figure 5.2** below). The flanges along the edge should be on the bottom.
4. Use two captive panel fasteners to attach the top deflector to the top of the lower Liebert® XDCF module. Tighten the fasteners securely, using a screwdriver, either a Phillips or a blade-type.
5. Position the second piece of the top deflector along the front edge of the deflector piece attached in steps 3 and 4, matching the mounting slots in the two pieces. The flanges along the edge should be on the bottom.
6. Use two captive panel fasteners to connect the deflector pieces. Tighten the fasteners finger-tight, leaving them loose enough to slide for good contact with the Egenera BladeFrame cabinet.

Figure 5.2 Lower Liebert® XDCF attachments

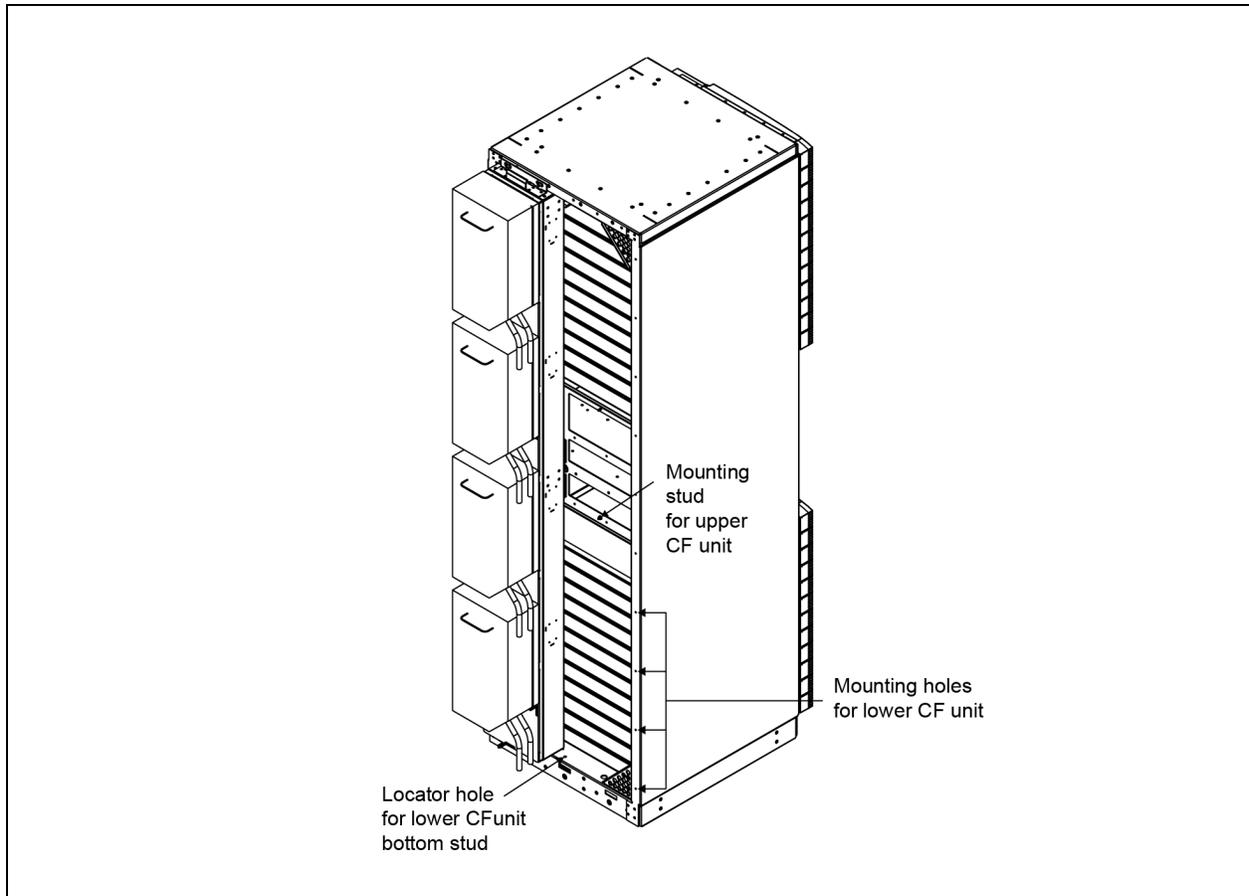


5.3.2 Attaching Lower Vertiv™ Liebert® XDCF Module

Liebert® XDCF modules mount on the rear of the Egenera BladeFrame cabinet, near the power modules. The cabinet and Liebert® XDCF have prefabricated mounting holes and studs to ease mounting.

1. Set the lower Liebert® XDCF module on the left side of the ledge on the rear of the Egenera BladeFrame cabinet. Make sure the positioning stud on the bottom of the Liebert® XDCF fits into the locator hole on the ledge as shown in **Figure 5.3** below .

Figure 5.3 Locator hole for lower unit stud



2. Press the Liebert® XDCF against the Egenera BladeFrame cabinet.
3. Insert a panel fastener into the mounting bracket and screw it into the captive panel nut in the rear of the Egenera BladeFrame cabinet. For the hole locations, see **Figure 5.1** on page 11 . Tighten the fasteners securely with a screwdriver, either a blade-type or Phillips.
4. Secure the Liebert® XDCF to the cabinet by inserting and tightening four screws along the right side of the Liebert® XDCF (see **Figure 5.2** on the previous page).
5. Press the front section of the top deflector against the Egenera cabinet and tighten the panel fasteners joining the two-piece deflector.

NOTE: If a lower module and an upper module will be attached to the Egenera cabinet, proceed to **Attaching Upper Vertiv™ Liebert® XDCF Module** on page 15 .

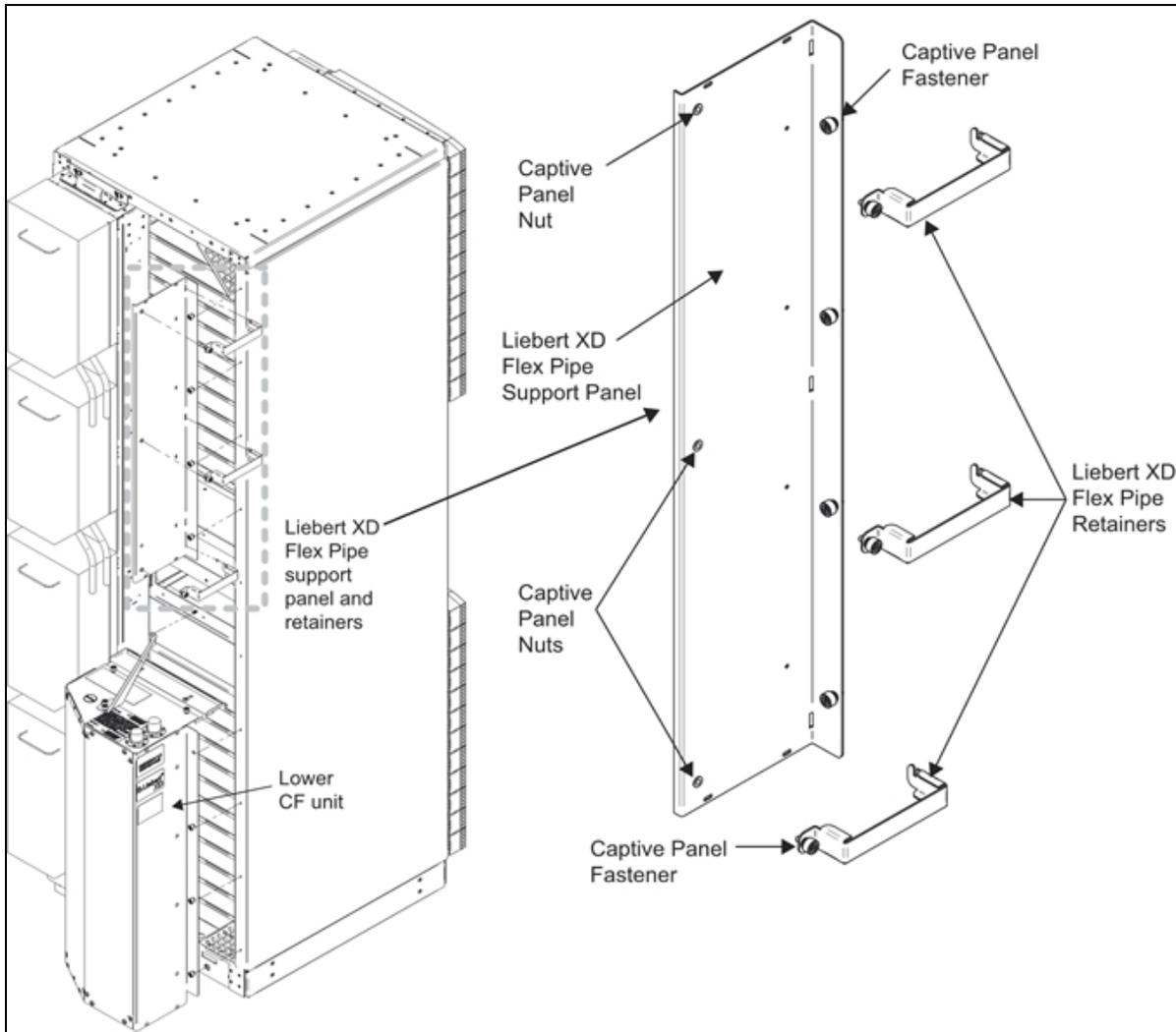
Attaching Vertiv™ Liebert® XD Flex Pipe Support Panel

Use of only the lower Vertiv™ Liebert® XDCF module requires attaching a Liebert® XD Flex Pipe support panel and three pipe retainers. The retainers keep the refrigerant pipes behind the Egenera cabinet. If an upper Liebert® XDCF module will be used, the Vertiv™ Liebert® XD Flex Pipe retainers will be attached to the upper module.

To attach the Liebert® XD Flex Pipe support panel:

1. Position the Liebert® XDCF Liebert® XD Flex Pipe support panel over the line of four holes above the right edge of the lower Liebert® XDCF module
2. Secure the Liebert® XD Flex Pipe support panel to the cabinet by inserting and tightening four screws on the panel's flange. Tighten the fasteners securely with a screwdriver, either a Phillips or a blade-type.
3. Attach the three pipe retainers:
 - a. Slip the front end of a retainer into a slot on the Liebert® XD Flex Pipe support panel.
 - b. Insert a panel fastener into the retainer and thread it into the captive panel nut.
 - c. Tighten the fastener securely, using a screwdriver, either a blade-type or Phillips.
 - d. Repeat a and c for the other retainers.

Figure 5.4 Liebert® XD Flex Pipe support panel attachment



5.4 Attaching Upper Vertiv™ Liebert® XDCF Module

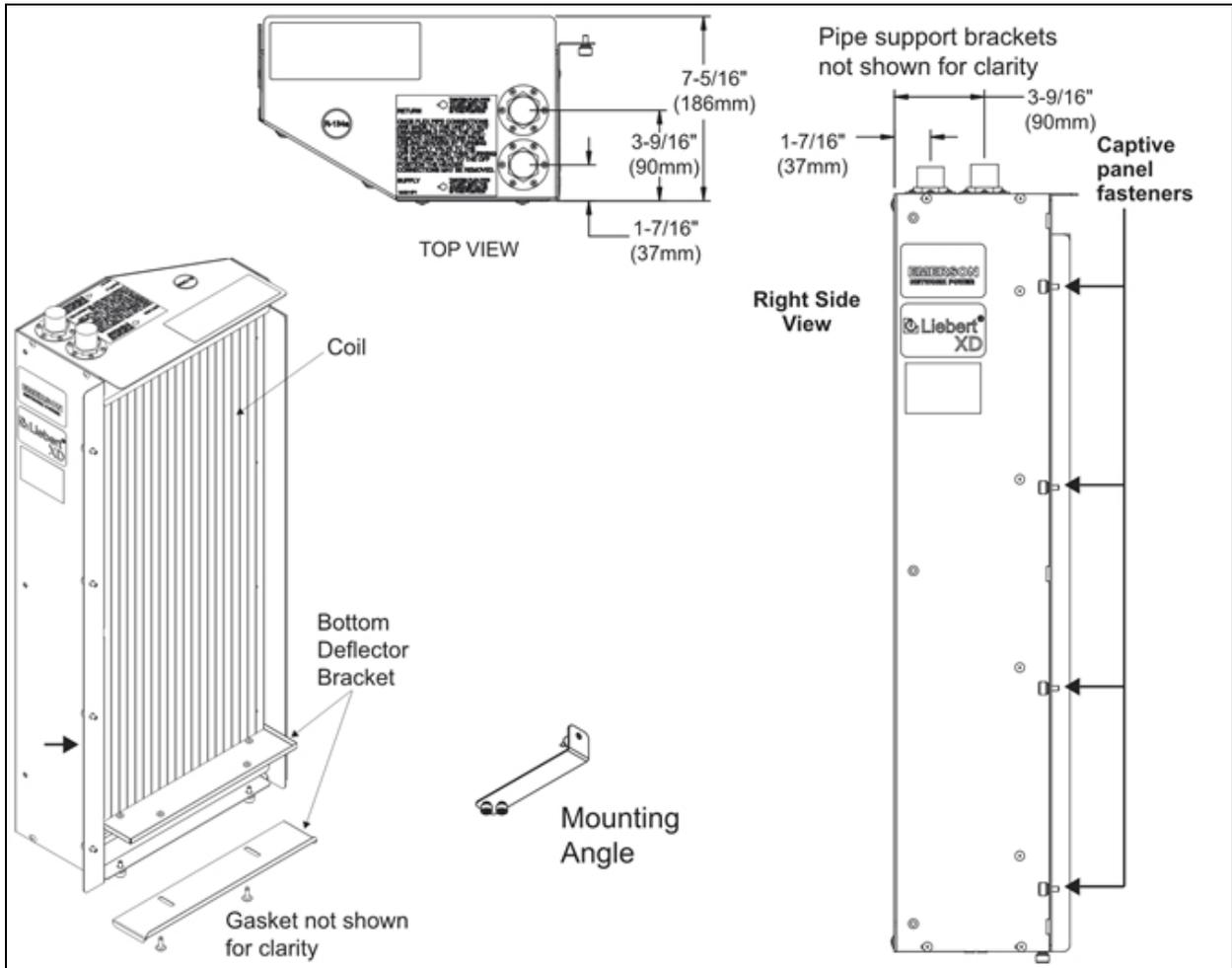
The upper Liebert® XDCF module attaches to the Egenera BladeFrame cabinet with a mounting angle and four bolts.

Before the Liebert® XDCF is mounted, the mounting angle and a two-piece deflector panel must be attached to the bottom of the Liebert® XDCF and insulation must be applied to the left side.

5.4.1 Preparing the Upper Module for Attachment

1. Position the mounting angle over the two mounting holes. The holes are near the center of the bottom of the Liebert® XDCF module (see **Figure 5.2** on page 12).
2. Use two captive panel fasteners to attach the mounting angle to the bottom of the Liebert® XDCF module. Tighten the fasteners securely, using a screwdriver, either a blade-type or Phillips.
3. Position the bottom deflector over the two mounting holes along the front edge of the bottom of the upper Liebert® XDCF module (see **Figure 5.5** on the next page). The flanges along the edge should be on the top side.
4. Use two captive panel fasteners to attach the bottom deflector to the bottom of the upper Liebert® XDCF module. Tighten the fasteners securely with a screwdriver, either a Phillips or a blade-type.
5. Position the second piece of the bottom deflector along the front edge of the deflector piece attached in steps 3 and 4, matching the mounting slots in the two pieces. The flanges along the edge should be on the top side.
6. Use two captive panel fasteners to connect the deflector pieces. Tighten the fasteners finger-tight, leaving them loose enough to slide for good contact with the Egenera BladeFrame cabinet.

Figure 5.5 Upper Vertiv™ Liebert® XDCF attachment



5.4.2 Attaching Upper Liebert® XDCF Module

The upper Liebert® XDCF module mounts on the rear of the Egenera BladeFrame cabinet, above the lower Liebert® XDCF module. The cabinet and Liebert® XDCF have prefabricated mounting holes and studs to ease mounting.

1. Attach the mounting angle to the bottom of the Egenera BladeFrame cabinet with a 10-32 nut that fits onto the stud on the back of the cabinet, see **Figure 5.1** on page 11).
2. Hang the upper Liebert® XDCF module on the top of the Egenera BladeFrame cabinet, using the overhanging front edge of the Liebert® XDCF. The bottom should rest on the mounting angle attached in step 1.
3. Hold the Liebert® XDCF against the Egenera cabinet.
4. Insert a panel fastener into the mounting angle and screw it into the captive panel nut in the rear of the Egenera BladeFrame cabinet. Tighten the fasteners securely with a screwdriver, either a Phillips or a blade-type.
5. Secure the Liebert® XDCF to the cabinet four captive panel fasteners along the right side of the Liebert® XDCF. For the hole locations, see **Figure 5.1** on page 11.
6. Press the front section of the bottom deflector against the Egenera cabinet and tighten the panel fasteners joining the two-piece deflector.

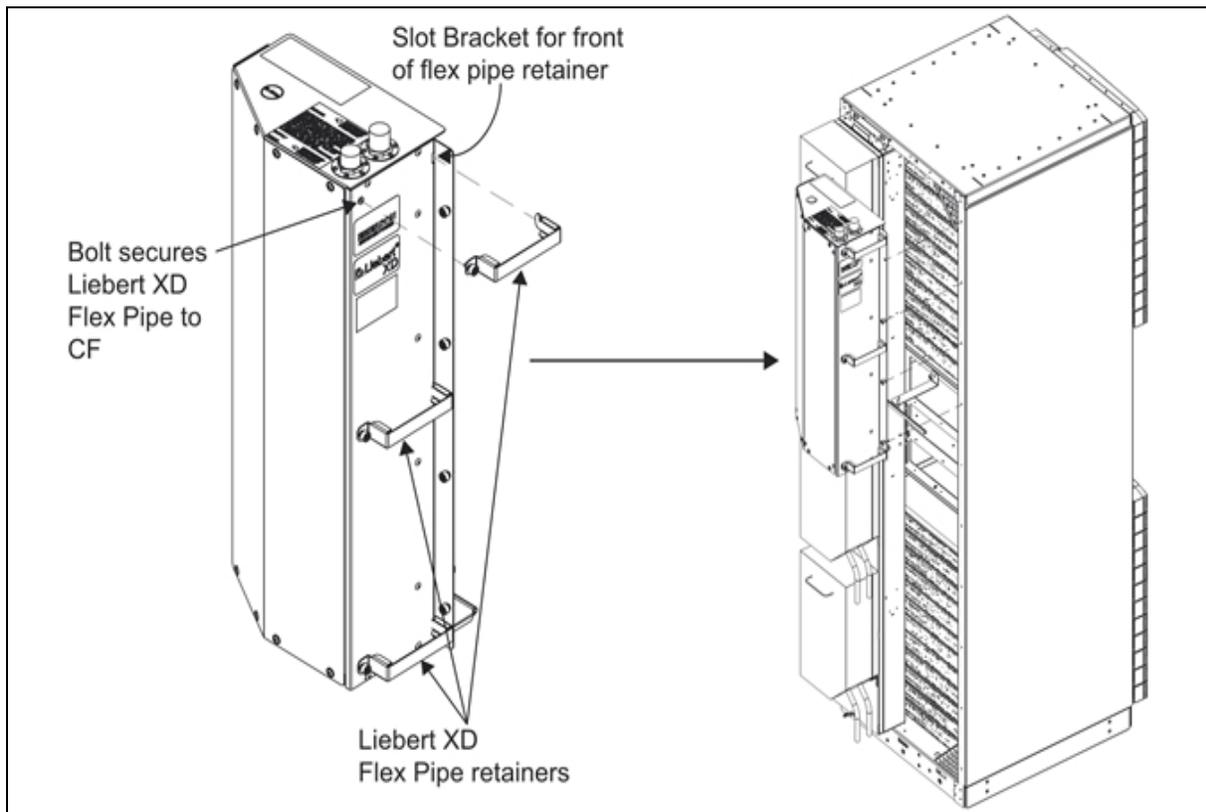
Attaching Vertiv™ Liebert® XD Flex Pipe Retainers to Upper Vertiv™ Liebert® XDCF Module

Liebert® XD Flex Pipe retainers must be attached to the upper Liebert® XDCF module to keep the refrigerant pipes positioned behind the Egenera cabinet.

To attach the three retainers to the upper Liebert® XDCF module:

1. Slip the front end of a Liebert® XD Flex Pipe retainer into a slot on the right side of the Liebert® XDCF.
2. Insert a panel fastener into the retainer and thread it into the captive panel nut.
3. Tighten the fastener securely with a screwdriver, either Phillips or a blade-type.
4. Repeat steps 1 and 3 for the remaining retainers

Figure 5.6 Attaching Liebert® XD Flex Pipe retainers



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6 Piping Connections and Piping Access Points

Refer to site specific drawings for general locations of the piping connections. For Vertiv™ Liebert® XDCF connection locations, refer also to **Figure 6.1** on the next page .

6.1 European Union Fluorinated Greenhouse Gas Requirements

Stationary air conditioning, refrigeration, heat pump equipments and stationary fire protection systems in the European Community market and operating with fluorinated greenhouse gases (f-gas), such as R407C, R134a, R410A, must comply with the F-Gas Regulation: (EC) No. 842/2006 (F-gas). The regulation prohibits, among other actions, venting fluorinated greenhouse gases to the atmosphere.

The F-Gas Regulation requires operators to use all measures that are technically feasible and do not entail disproportionate cost to prevent leakage of these gases, to test for leakage regularly and to recover f-gas before disposing of equipment, as well as during service and maintenance.

Refer to the full regulation for additional details.

6.2 Connection Methods and Points

The assembly and connection means used for piping in the Liebert® XD system are the same as those used in conventional refrigeration systems. Observe all standard practices during installation and startup to prevent damage and contamination.

Supply piping connection is 1/2" OD copper pipe, and return piping connection is 5/8" OD copper. Both supply and return fittings are one-shot connections. These fittings contain pressurized R-134a refrigerant inside the Liebert® XDCF.



CAUTION: Risk of sudden refrigerant discharge! Can cause loss of charge and minor injury!

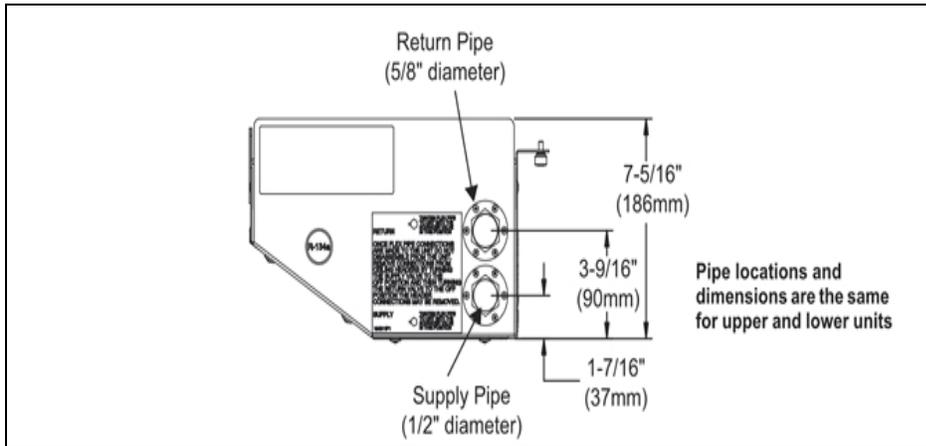
Do not disconnect one-shot connections after they have been connected. Disconnection will release pressurized R-134a refrigerant from the Liebert® XDCF.

The Liebert® XDCF has supply and return piping access on the top of each module.

6.2.1 Header System

The Liebert® XDCF module system requires use of the Liebert® XD prefabricated piping assembly. The prefabricated piping is compatible with the Liebert® XD Flex Pipe required to attach to the Liebert® XDCF modules.

Figure 6.1 Vertiv™ Liebert® XDCF supply and return piping access points



For additional information, refer to the Vertiv™ Liebert® Xtreme Density System Design Manual, SL-16655.

6.3 Recommended Piping Size

Connect the main pipes between the Liebert® XDCF branch piping and the Vertiv™ Liebert® XDP or Vertiv™ Liebert® XDC according to the table below. Elbows and restrictions must be minimized to get good fluid flow.

Connect the branch pipes between the main piping and the Liebert® XDCF according to the table below.

Table 6.1 Branch piping sizes for refrigerant loop

Pipe Function	Size / Equivalent Pipe Length
Liebert® XDP/Liebert® XDC supply line, from Liebert® XDP/Liebert® XDC supply to farthest Liebert® XDCF	1-1/8" OD (1.025" ID) for lengths up to 60 feet (18m)
	1-3/8" OD (1.265" ID) for lengths over 60 but less than 175 feet (18 to 53m)
Liebert® XDP/Liebert® XDC return line, from farthest Liebert® XDCF to Liebert® XDP/Liebert® XDC return	2-1/8" OD (1.985" ID) for lengths up to 60 feet (18m)
	2-5/8" OD (2.465" ID) for lengths over 60 but less than 175 feet (18 to 53m)
From Liebert® XDCF supply to supply line of Liebert® XDP/Liebert® XDC	1/2" OD (0.430" ID) for lengths up to 6 feet (1.8m)
	5/8" OD (0.545" ID) for lengths over 6 feet but less than 35 feet (1.8-10.6m)
From Liebert® XDCF return to return line of Liebert® XDP/Liebert® XDC	5/8" OD (0.545" ID) for lengths up to 6 feet (1.8m)
	7/8" OD (0.785" ID) for lengths over 6 feet but less than 35 feet (1.8-10.6m)

6.4 Connecting Liebert® XD Flex Pipes to Liebert® XDCF Modules

1. Remove the caps on the supply and return lines on the top of the Liebert® XDCF.
2. Lubricate the threads, diaphragm and O-ring with one or two drops of mineral oil.
3. Connect the line-set coupling finger-tight.
4. Make sure the Schrader valve is properly oriented; refer to the label on the top of the Liebert® XDCF.
5. Hold the backup hex nut with a wrench while tightening the swivel nut.
6. Tighten the swivel nut on the female coupling until it is seated or a definite resistance is felt.
7. Once a definite bottoming resistance is felt (as in metal to metal), place a mark lengthwise from the swivel nut to the backup hex and tighten the swivel nut on the female coupling an additional 1/4 turn.
8. Tighten both the supply fittings and the return fittings to 35-45 ft/lb (47-61Nm).

9. Mark the female and male coupler with for future reference.

6.5 Connecting a Vertiv™ Liebert® XDCF with Liebert® XD Flex Pipe to an Operational Liebert® XD System

NOTE: Before connecting the Liebert® XDCF with Liebert® XD Flex Pipe to the prefabricated piping mains, check the entire system for leaks.

Check the Liebert® XDCF to ensure that the unit has no refrigerant leaks.

Read all instructions before beginning installation.

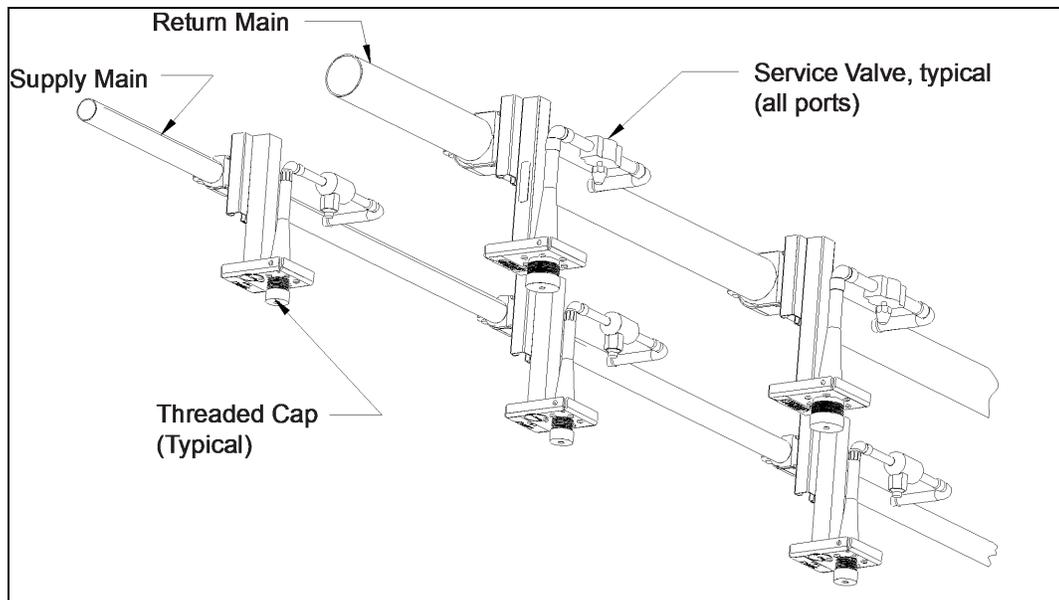
Tools Required

- Two adjustable wrenches, with a maximum adjustment size of 2-1/2 inches
- Screwdriver, Phillips or blade type

NOTE: This operation requires two people.

1. Determine the port location of the supply and return piping overhead
2. Make sure the service valve for each port is closed
3. Remove cap for only the required ports. Do not remove caps from the unused ports.
4. Once step 3 has been completed, remove the pipe plugs that are supplied on the Liebert® XD Flex Pipe.

Figure 6.2 Liebert® XD prefabricated piping assembly



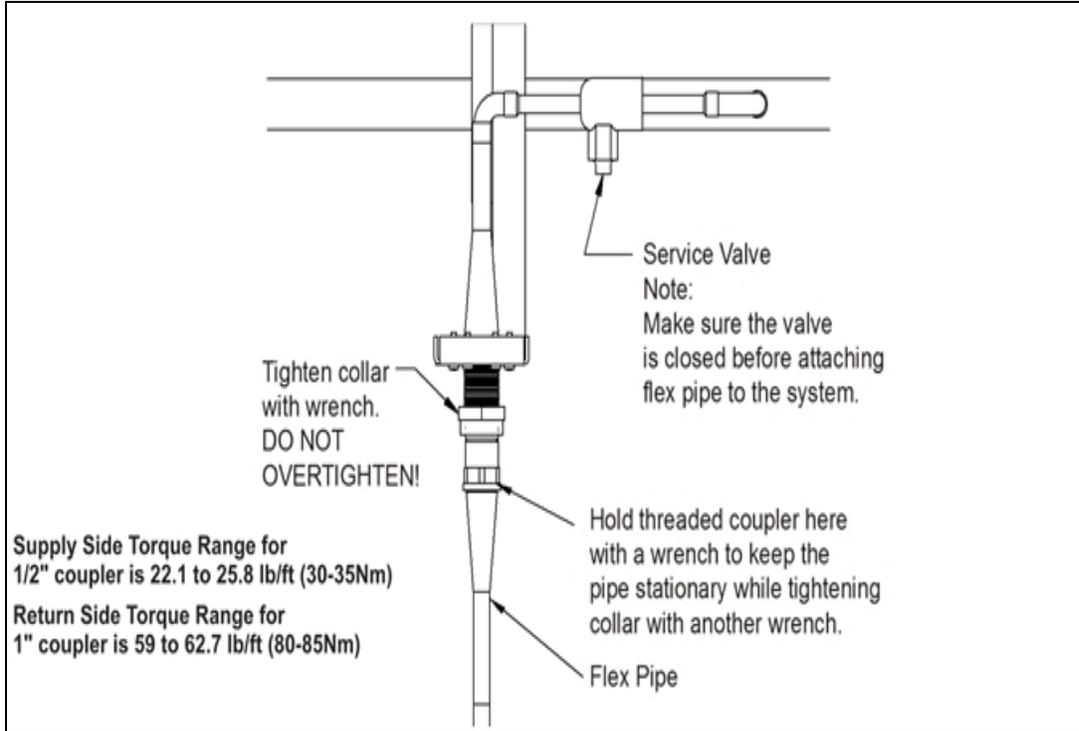
5. Thread the return couplers together, the larger of the two couplers (Liebert® XD Flex Pipe and return main).
6. Use one of the adjustable wrenches to hold the fixed side of the female coupler on the Liebert® XDCF stationary. With the other adjustable wrench, tighten the collar onto the coupler.

Tighten these only until the force required to tighten abruptly increases. See **Figure 6.3** on the next page.

NOTICE

Do not overtighten the couplers. Overtightening of couplers will damage the couplers.

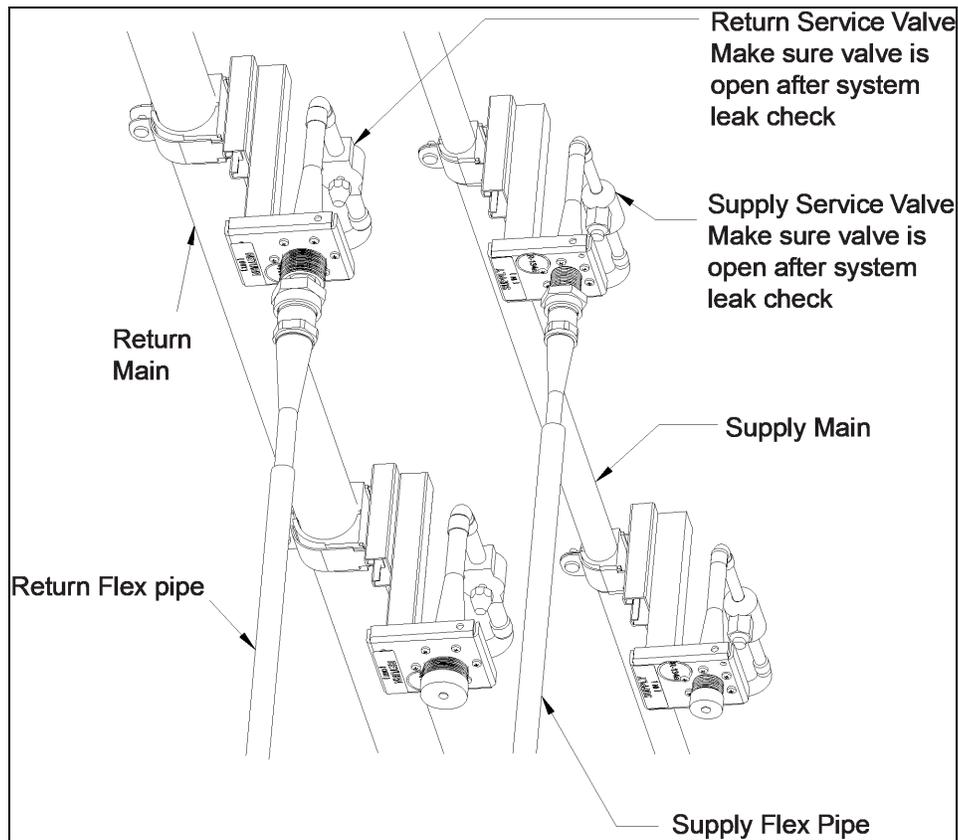
Figure 6.3 Detail view of Vertiv™ Liebert® XD Flex Pipe and prefabricated piping port



7. Repeat steps 5 and 6 for the smaller coupler (supply line).
8. Once the supply and return connections are completed, open the return service valve, then open the supply service valve.

With the equipment running, cool air is discharged from the back of the Liebert® XDCF.

Figure 6.4 Vertiv™ Liebert® XD system with prefabricated piping assembly and Vertiv™ Liebert® XD Flex Pipe



6.6 Disconnecting a Vertiv™ Liebert® XDCF with Liebert® XD Flex Pipe from a Liebert® XD System

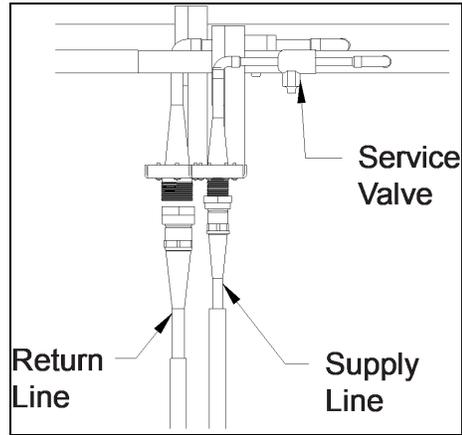
NOTE: Before uninstalling a Liebert® XDCF with Liebert® XD Flex Pipe from the prefabricated piping mains: Close the supply service valve, wait approximately two minutes, then close the return service valve.

Read all instructions before beginning.

Tools Required

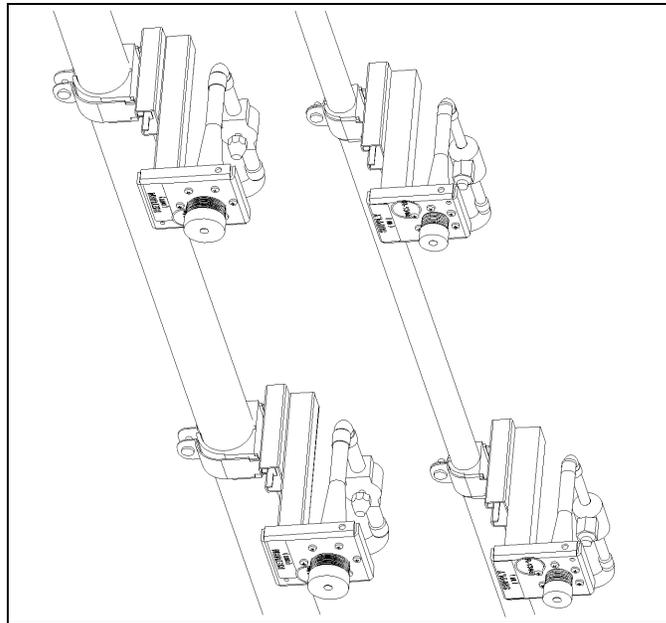
- Two adjustable wrenches, maximum adjustment size of 2-1/2 inches
 - Phillips head #2 screwdriver
1. Close the service valve in the supply line to the Liebert® XDCF (smaller coupler).
 2. Close the service valve in the return line to the Liebert® XDCF (larger coupler).
 3. Locate and have at the ready the caps and plugs for both ends of the supply and return couplers.
 4. Loosen the female supply coupler from the male supply coupler (smaller coupler). This requires two adjustable wrenches. Refer to **Figure 6.3** on the previous page .
 5. The Liebert® XDCF side of the female coupler must be held stationary while the collar on the coupler is being loosened. Refer to **Figure 6.3** on the previous page .
 6. Disconnect the coupler.

Figure 6.5 Profile view of the Vertiv™ Liebert® XD system



7. Place the protective dust cap and plug back onto both ends of the coupler on the Vertiv™ Liebert® XDCF and the port pipe.

Figure 6.6 Piping mains without Liebert® XDCF and Liebert® XD Flex Pipe



8. Repeat steps 5 through 7 for the return coupler (larger coupler).
9. Carefully lay the Liebert® XD Flex Pipe aside.

NOTICE

Do not fold or bend Liebert® XD Flex Pipe. Kinks in the tubing can cause permanent damage to the Liebert® XD Flex Pipes.

10. Carefully unbolt the Liebert® XDCF from the cabinet.
11. Place the Liebert® XDCF on a stable surface.

6.7 Insulation

To minimize the possibility of condensation, insulate all piping between the Vertiv™ Liebert® XDCF and the Vertiv™ Liebert® XDP or Vertiv™ Liebert® XDC.

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7 Checklist for Proper Installation

1. Vertiv™ Liebert® XDCF modules are securely attached to the cabinet.
2. Piping from Vertiv™ Liebert® XDP or Vertiv™ Liebert® XDC, with isolation valves, properly connected to each Liebert® XDCF module.
3. Flex piping connections to prefabricated header assembly are secure and according to specifications.
4. Check the R-134a refrigerant charge.
5. System checked for leakage.
6. Run system and verify that the Liebert® XDP or Liebert® XDC and the Liebert® XDCF modules operate properly.
7. Piping is insulated.

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8 Maintenance

Minimal maintenance is required to keep the Vertiv™ Liebert® XDCF operating at optimal levels. The unit should be cleaned and checked for damage. Suggested maintenance includes:

- Cooling fins—Clean any dust and debris from the cooling fins, taking care not to bend them.

8.1 Fluorinated Greenhouse Gas Requirements

Stationary air conditioning, refrigeration, heat pump equipments and stationary fire protection systems in the European Community market and operating with fluorinated greenhouse gases (f-gas), such as R407C, R134a, R410A, must comply with the F-Gas Regulation: (EC) No. 842/2006 (F-gas). The regulation prohibits, among other actions, venting fluorinated greenhouse gases to the atmosphere.

The F-Gas Regulation requires operators to use all measures that are technically feasible and do not entail disproportionate cost to prevent leakage of these gases, to test for leakage regularly and to recover F-gas during equipment service and maintenance and before disposing of equipment.

Refer to the full regulation for additional details.

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9 Specifications

Table 9.1 Vertiv™ Liebert® XDCF specifications

Models	XD-CF-10-TPE-0, XD-CF Top EXP XD-CF-10-TP-0, XD-CF Top XD-CF-10-BPE-0, XD-CF BTM EXP XD-CF-10-BP-0, XD-CF BTM
Cooling capacity, maximum	10kWH / 2.8 Tons / 34,000 BTUh
Conditions	55°F (13°C) entering fluid temperature, 50°F (10°C) or lower dew point
Dimensions, inches (mm)	
Height – including pipe connections	31-3/8" (797mm)
Width	13-7/16" (341mm)
Depth	7-5/16" (186mm)
Weight, lb (kg)	
Unit only	18 (8.2)
Shipping	30 (13.6)
Pipe connections	
Refrigerant supply from Liebert® XDP/Liebert® XDC	1/2" threaded one-shot coupling on the unit
Refrigerant return to Liebert® XDP/Liebert® XDC	5/8" threaded one-shot coupling on the unit
Cabinet exterior finish	Gray
Agency	
Safety	CSA, CE Approved

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