

Precision Cooling
For Business-Critical Continuity

Liebert Himod™
A Quiet, Efficient Solution For Medium-Sized Electronic Heat Loads



Creating The Right Environment For Today's Productivity

Today's businesses require an ever-increasing amount of electronic computing and communications equipment to stay competitive.

In many cases, however, you'll find these systems generating high amounts of heat in spaces where size restrictions require efficient use of every square foot. Often this equipment is adjacent to offices, conference rooms and other public areas that are sensitive to any noise generated by air conditioning systems.

So not only do you need an environmental control system to maintain precise temperature, humidity and filtration — you need it to operate quietly as well.

The Problems You Face Are Many

It Must Be Quiet

"The computer room is right next to our offices. We need an air conditioning system that is quiet."

It Has To Be Precise

"I need a system that can respond quickly to changing temperature and humidity loads and maintain a stable environment"

It's Got To Fit

"We don't have much space in here to be adding more cooling equipment. And to make things even tougher, the computer room is way up here on the 20th floor."

It Needs To Be Efficient

"I just don't have an unlimited budget to spend on buying and operating the cooling system for our network center. I need something that can save me money."

It Should Offer Choice

"No two of our sites are alike. I need a climate control system that will do different things at different locations — but I want to specify one unit that will do it all."

Meet The Solution

The Liebert Himod is designed to be the quietest system of its kind. Direct drive, backward inclined fans, combined with a specially designed larger air chamber, provide lower noise characteristics demanded in today's applications. The Liebert Himod also utilizes insulated, double skin panels to cut down on noise output.

The Liebert Himod is specifically designed to handle the heat loads generated by electronic equipment. Its fast-response microprocessor control system adjusts quickly to changing conditions within the room, while providing you with complete supervision of the environment at all times. It features a high sensible heat ratio to match the cooling requirements of electronic systems.

Featuring total front/top access for installation and service — so there's usually no need to keep the back or sides clear — the Liebert Himod fits easily into cramped spaces, leaving more room for critical electronic equipment. And, the unit is small enough to fit in most standard elevators, making it easy to install in existing facilities. There are even "high-rise" condenser and drycooler options.

The combination of a high-efficiency scroll compressor and motorized impeller fans gives the Liebert Himod unrivalled energy efficiency. Air cooled and glycol cooled models are available, as well as ultra energy efficient GLYCOOL and Dual Cool configurations.

The Liebert Himod provides a complete environmental control package and system configurations including both upflow and downflow models. You also have a choice of refrigerants, including the new "green" R407C, as well as R22.

The Liebert Himod. Precision Cooling In A Highly Efficient, Flexible Package.



Here is the one system that can do so much. The Liebert Himod is a self-contained precision environmental system that provides the high level of temperature regulation, humidity control, reheat and air filtration required by facilities housing sophisticated electronic equipment.

Ideal For Critical Electronics Systems

The Liebert Himod provides precision environmental control in high-tech environments such as:

- Computer rooms and data centers.
- Telecommunications switchgear and cellular communications facilities.
- Industrial control rooms and process plant areas.
- UPS and battery rooms.
- Medical applications, including high-sensitivity patient areas and diagnostic equipment suites.

Flexibility Is The Key

- The Liebert Himod fits easily into cramped spaces thanks to its total front/top access, while its low noise levels make it a very user-friendly solution.
- Available in 8, 10 and 12 ton capacities.
- Air cooled, glycol cooled, GLYCOOL™ and Dual Cool configurations available.
- For maximum application versatility, both upflow and downflow models are offered.

Whatever your heat removal problem, there's a good chance that the Liebert Himod can help provide a solution.



The Liebert Himod design and manufacturing processes have been optimized to operate with “green” refrigerant R407C (Zero Ozone Depletion Potential). This is Liebert's first product optimized in this manner well before the clean air act requirement of Jan 1, 2010. (Other Liebert units have “green” options.) The Liebert Himod is also available with R22 for customers whose existing installation has not yet converted to the green refrigerant.



Liebert Himod: Features That Make The Difference

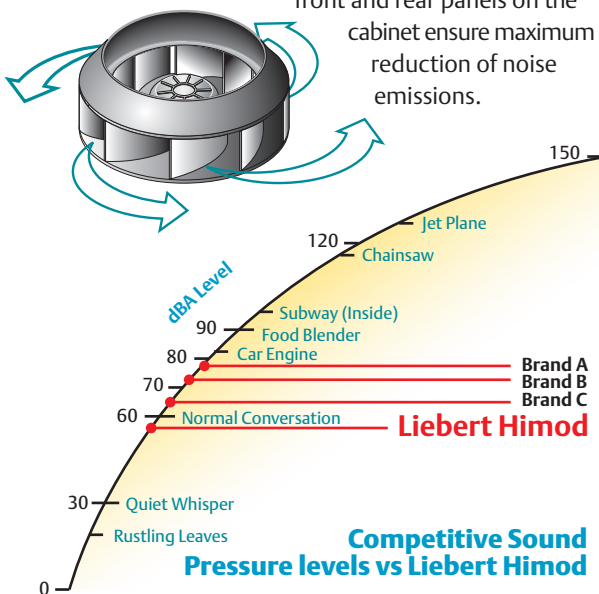
It is the unique features and innovative design of the Liebert Himod that enable it to manage the critical areas of operation for precision environmental control.

Seen But Not Heard

Liebert Himod units have been specially designed to counteract sound and vibration problems while providing the highest possible ventilation efficiency. The Liebert Himod features ultra-quiet fan assemblies with single inlet, backwardly curved, centrifugal-type blowers. The motors are direct drive and have a standard operating speed plus a low speed for dehumidification. The fans are mounted on vibration absorbing rubber supports to reduce vibration. A field adjustable autotransformer allows for fine-tuning of motor operating speeds. Additionally, the use of insulated, double skin

front and rear panels on the cabinet ensure maximum reduction of noise emissions.

Fan delivers the necessary air volume at a fraction of the noise level produced by competitive units.



Ready To Take The Heat

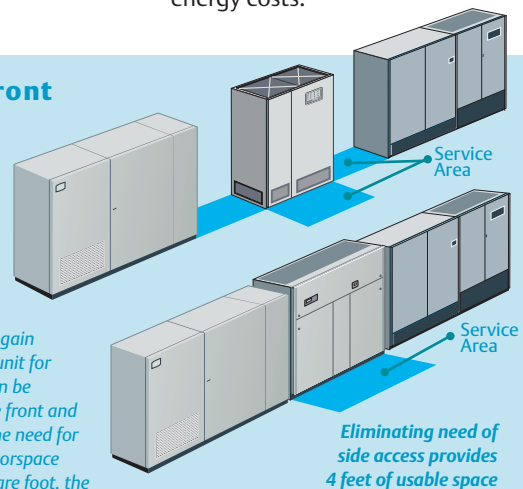
The Liebert Himod is a precision air conditioning system built to handle the unique cooling needs of computers and other sensitive electronic equipment that generate dry (sensible) heat, but not humidity. Only about 60-70% of a standard comfort air conditioning system's total capacity is dedicated to the removal of sensible heat, while 30-40% is for dehumidification. Precision systems typically have a higher ratio of sensible-to-total cooling capacity in order to remove heat from the air — while controlling humidification to avoid static electricity discharges during dry seasons and prevent condensation within electronic equipment during wet periods.

Unparalleled Efficiency

- The Liebert Himod has been designed from the ground up to be a better value.
- The refrigeration system utilizes a high-efficiency **scroll compressor** for maximum energy efficiency and reliability.
- **Microprocessor controls** minimize short cycling and other wasteful operating patterns.
- A **draw-through airflow design** that provides uniform air distribution and minimal air-side pressure drop across the coil.
- For even greater efficiency, Liebert offers energy efficient alternatives such as its **GLYCOOL™** and **Dual Cool** options which provide compressorless operation, where climate permits, to substantially reduce energy costs.

Compact Size, Front Accessibility

The Liebert Himod occupies just 17 square feet of floorspace and can be located in areas that are packed with electronic equipment. But when choosing a precision cooling system, you also need to consider the area required to gain entrance to the inside of the unit for service. The Liebert Himod can be completely accessed from the front and top of the unit, eliminating the need for side clearance. With room floorspace valued at a premium per square foot, the small total footprint makes economic sense. The size of the unit also allows easier installation in existing facilities since it will fit in most standard elevators.



Eliminating need of side access provides 4 feet of usable space

Available In Both Upflow And Downflow Configurations

The Complete Package

The Liebert Himod includes all environmental functions — cooling, reheat, dehumidification, humidification and filtration... plus an intelligent control system to make sure every function works in harmony with the others. Upflow and downflow versions are available to accommodate rooms with or without raised floors. And because this is a Liebert environmental system, it is designed to run the same hours as your network — continually, year in and year out...24 hours-a-day.



The Liebert Himod offers faster response to changing cooling demands thanks to more precise and sensitive temperature regulation, including a choice of two levels of microprocessor control and monitoring.

Fans — The use of motorized impeller style fans with direct drive operation, combine efficiency and quiet operation.

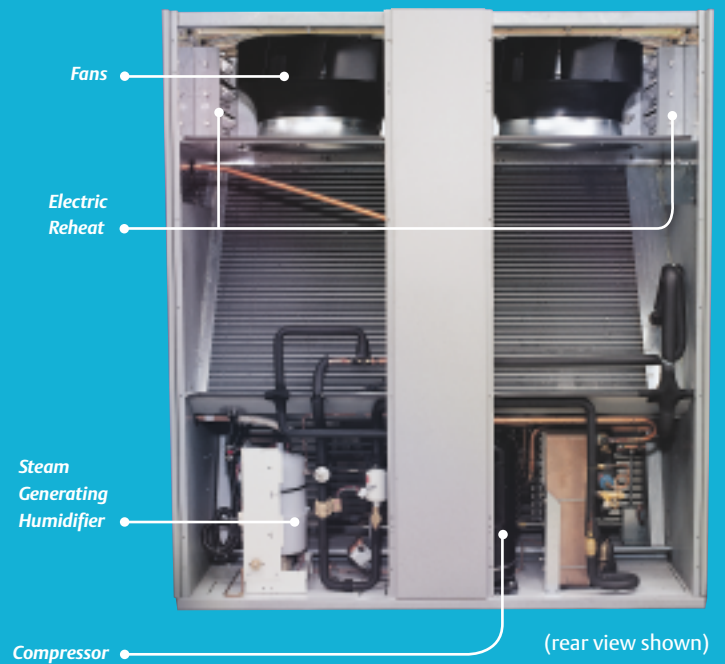
Electric Reheat — Two-stage aluminum reheat elements consist of a finned design for extended life. The low-watt density, sheathed elements are made of aluminum with integral high efficiency fins, reducing sheath temperatures and eliminating ionization.

Steam Generating Humidifier — Clean, pure steam is generated in a disposable canister which is complete with supply and drain valves, electronic controls and steam distributor.

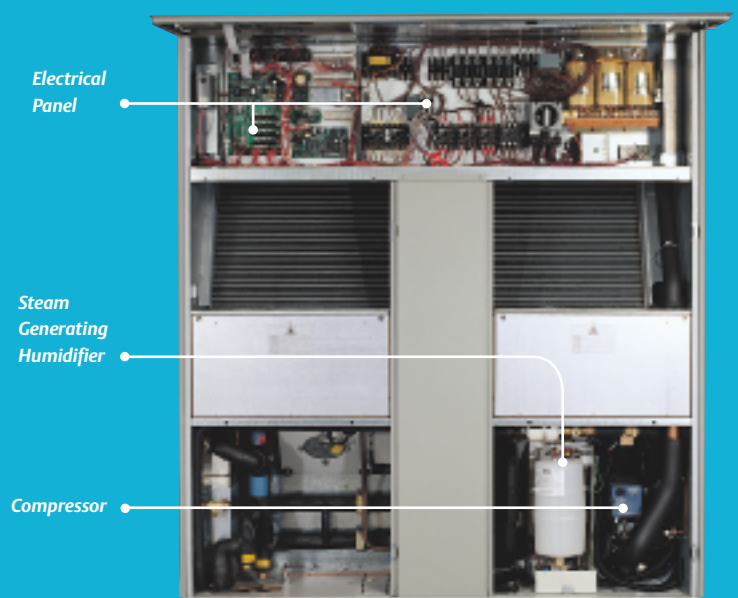
Electrical Panel — The high voltage compartment contains the contactors, transformers, overloads and all other high-voltage components. Each high-voltage component is protected by a separate overcurrent protective device.

Compressor — Each unit contains a high efficiency scroll compressor. The compressor has internal vibration isolating mountings, pressure safety controls and built-in overload protection.

Upflow Configuration

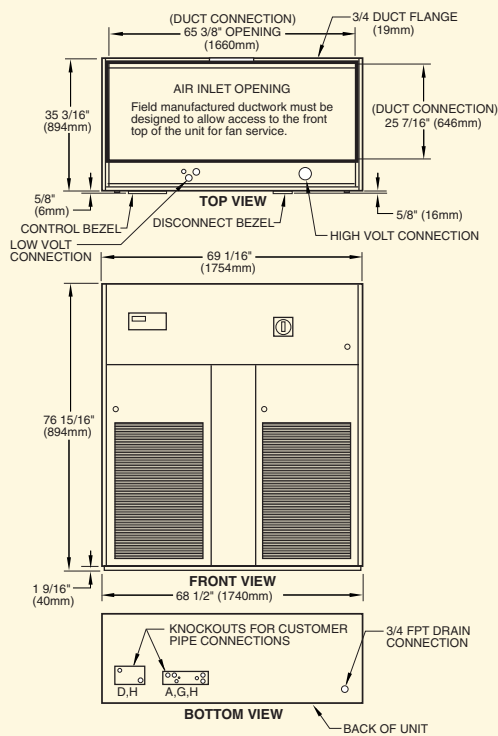


Downflow Configuration

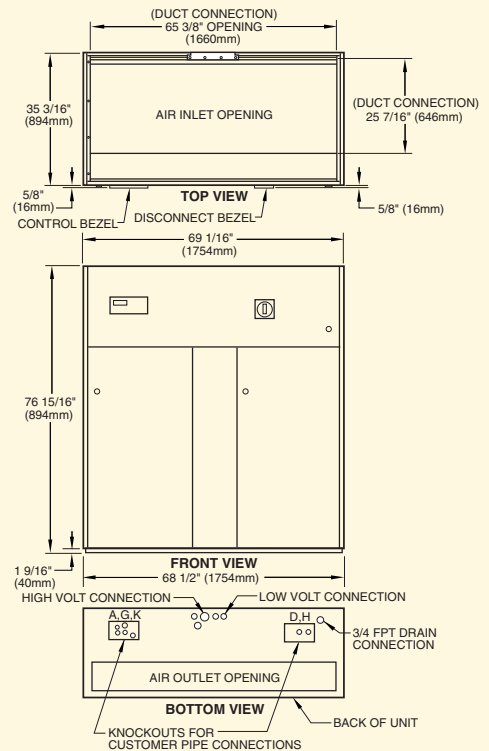


Dimensional Data And Specifications

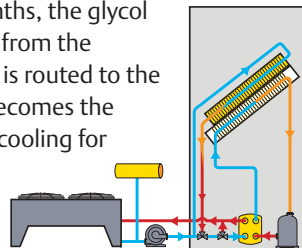
Upflow System



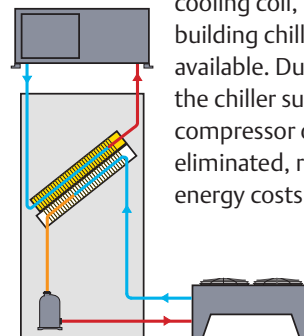
Downflow System



GLYCOOL System — The Liebert Himod glycol-cooled design is enhanced with the addition of a second cooling coil, which allows the system to take advantage of cooler outdoor temperatures to reduce or eliminate compressor runtime. During colder months, the glycol solution returning from the outdoor drycooler is routed to the second coil, and becomes the primary source of cooling for the room.



Dual Cool — A conventional air-cooled Liebert Himod is enhanced with a second cooling coil, using a central building chiller supply when available. During times when the chiller supply is available, compressor operation is eliminated, reducing energy costs.



Air Cooled R407C Shown - R22 Available³

System Type	8Ton				10 Ton				12 Ton			
	Downflow		Upflow		Downflow		Upflow		Downflow		Upflow	
Indoor Unit												
Model	HMF28A1		HMU28A1		HMF34A1		HMU34A1		HMF40A1		HMU40A1	
^{1,2} Net Capacity Data-Standard Air Volume	BTU/H	KW	BTU/H	KW	BTU/H	KW	BTU/H	KW	BTU/H	KW	BTU/H	KW
75°F DB, 62.5°F WB (23.9°C DB, 16.9°C WB) 50% RH												
Total	98,000	28.7	97,100	28.5	118,100	34.6	116,600	34.2	141,200	41.4	139,800	41.0
Sensible	98,000	28.7	97,100	28.5	108,700	31.8	106,100	31.1	141,200	41.4	139,800	41.0
Sound pressure level ² dB (A)	56.4		57.8		57.5		60.0		59.0		61.6	

Dual Cool with Air Cooled R407C Shown - R22 Available³

System Type	8Ton				10 Ton				12 Ton			
	Downflow		Upflow		Downflow		Upflow		Downflow		Upflow	
Indoor Unit												
Model	HMF28D1		HMU28D1		HMF34D1		HMU34D1		HMF40D1		HMU40D1	
^{1,3} Net Capacity Data-Standard Air Volume	BTU/H	KW	BTU/H	KW	BTU/H	KW	BTU/H	KW	BTU/H	KW	BTU/H	KW
75°F DB, 62.5°F WB (23.9°C DB, 16.9°C WB) 50% RH												
Total	98,000	28.7	97,300	28.5	118,100	34.6	115,900	34.0	137,800	40.4	135,600	39.7
Sensible	98,000	28.7	97,300	28.5	108,300	31.7	104,200	30.5	137,800	40.4	128,200	37.6
Sound pressure level ² dB (A)	55.8		57.8		57.6		58.1		59.1		61.6	
Econ-O-Coil Performance												
75°F DB, 62.5°F WB (23.9°C DB, 16.9°C WB) 50% RH												
Total	173,700	50.9	172,400	50.5	214,100	63.7	206,900	60.6	221,100	64.8	220,400	64.6
Sensible	141,200	41.4	140,100	41.0	168,000	49.2	162,000	47.5	174,000	51.0	173,300	50.8
Sound pressure level ² dB (A)	55.5		57.4		57.3		57.6		57.6		61.1	

Glycol Cooled R407C Shown - R22 Available³

System Type	8Ton				10 Ton				12 Ton			
	Downflow		Upflow		Downflow		Upflow		Downflow		Upflow	
Indoor Unit												
Model	HMF28G1		HMU28G1		HMF34G1		HMU34G1		HMF40G1		HMU40G1	
^{1,3,4} Net Capacity Data-Standard Air Volume	BTU/H	KW	BTU/H	KW	BTU/H	KW	BTU/H	KW	BTU/H	KW	BTU/H	KW
75°F DB, 62.5°F WB (23.9°C DB, 16.9°C WB) 50% RH												
Total	89,000	26.1	88,100	25.8	108,500	31.8	106,700	31.3	131,600	38.6	130,200	38.1
Sensible	89,000	26.1	88,100	25.8	108,500	31.8	106,700	31.3	131,600	38.6	130,200	38.1
Sound pressure level ² dB (A)	56.4		57.8		57.5		60.0		59.0		61.6	

GLYCOOL R407C Shown - R22 Available³

System Type	8Ton				10 Ton				12 Ton			
	Downflow		Upflow		Downflow		Upflow		Downflow		Upflow	
Indoor Unit												
Model	HMF28K1		HMU28K1		HMF34K1		HMU34K1		HMF40K1		HMU40K1	
^{1,3,5} Net Capacity Data-Standard Air Volume	BTU/H	KW	BTU/H	KW	BTU/H	KW	BTU/H	KW	BTU/H	KW	BTU/H	KW
75°F DB, 62.5°F WB (23.9°C DB, 16.9°C WB) 50% RH												
Total	89,000	26.1	88,300	25.9	108,300	31.7	106,100	31.1	129,100	37.8	127,700	37.4
Sensible	89,000	26.1	88,300	25.9	108,300	31.7	106,100	31.1	129,100	37.8	127,700	37.4
Sound pressure level ² dB (A)	55.8		57.8		57.6		58.1		59.1		61.6	
Econ-O-Coil Performance												
75°F DB, 62.5°F WB (23.9°C DB, 16.9°C WB) 50% RH												
Total	118,200	34.6	117,700	34.5	145,300	42.6	142,300	41.7	161,400	47.3	161,100	47.2
Sensible	112,800	33.1	112,100	32.8	134,800	39.5	131,100	38.4	145,800	42.7	145,400	42.6
Sound pressure level ² dB (A)	55.5		57.4		57.3		57.6		58.7		61.1	

Dual Cool with Glycol R407C Shown - R22 Available³

System Type	8Ton				10 Ton				12 Ton			
	Downflow		Upflow		Downflow		Upflow		Downflow		Upflow	
Indoor Unit												
Model	HMF28K1		HMU28K1		HMF34K1		HMU34K1		HMF40K1		HMU40K1	
^{1,3,6} Net Capacity Data-Standard Air Volume	BTU/H	KW	BTU/H	KW	BTU/H	KW	BTU/H	KW	BTU/H	KW	BTU/H	KW
75°F DB, 62.5°F WB (23.9°C DB, 16.9°C WB) 50% RH												
Total	89,000	26.1	88,300	25.9	108,300	31.7	106,100	31.1	129,100	37.8	127,700	37.4
Sensible	89,000	26.1	88,300	25.9	108,300	31.7	106,100	31.1	129,100	37.8	127,700	37.4
Sound pressure level ² dB (A)	55.8		57.8		57.6		58.1		59.1		61.6	
Econ-O-Coil Performance												
75°F DB, 62.5°F WB (23.9°C DB, 16.9°C WB) 50% RH												
Total	173,700	50.9	172,400	50.5	214,100	62.7	206,900	60.6	221,100	64.8	220,400	64.6
Sensible	141,200	41.4	140,100	41.0	168,000	49.2	162,000	47.5	174,000	51.0	173,300	50.8
Sound pressure level ² dB (A)	55.5		57.4		57.3		57.6		58.7		61.1	

¹The net capacity data has fan motor heat factored in for all ratings and the entering air condition of 72°F (22.2°C) and 50% RH is the standard rating for ASHRAE 127-2001. All capacities are nominal values, actual performance will be ±5%.

²Measured at 3.3 ft (1m) height and 6.6 (2m) front distance, in free field, with working fans and compressor; @ standard airflow and ESP

³Notes: R407C performance is within ±5% of R22 data

⁴All above data is based on system with 2 way valve with bypass, using 40% ethylene glycol solution

⁵All above data is based on system with 3 way regulating valve and 3 way Econ-O-Coil Valve, using 40% ethylene glycol solution

⁶Compressorized data is based on system with 2 way valve with bypass using 40% ethylene glycol solution, Econ-O-Coil data uses 3 way valve and water

Ensuring The High Availability Of Mission-Critical Data And Applications.

Emerson Network Power, the global leader in enabling business-critical continuity, ensures network resiliency and adaptability through a family of technologies – including Liebert power and cooling technologies – that protect and support business-critical systems. Liebert solutions employ an adaptive architecture that responds to changes in criticality, density and capacity. Enterprises benefit from greater IT system availability, operational flexibility, and reduced capital equipment and operating costs.

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