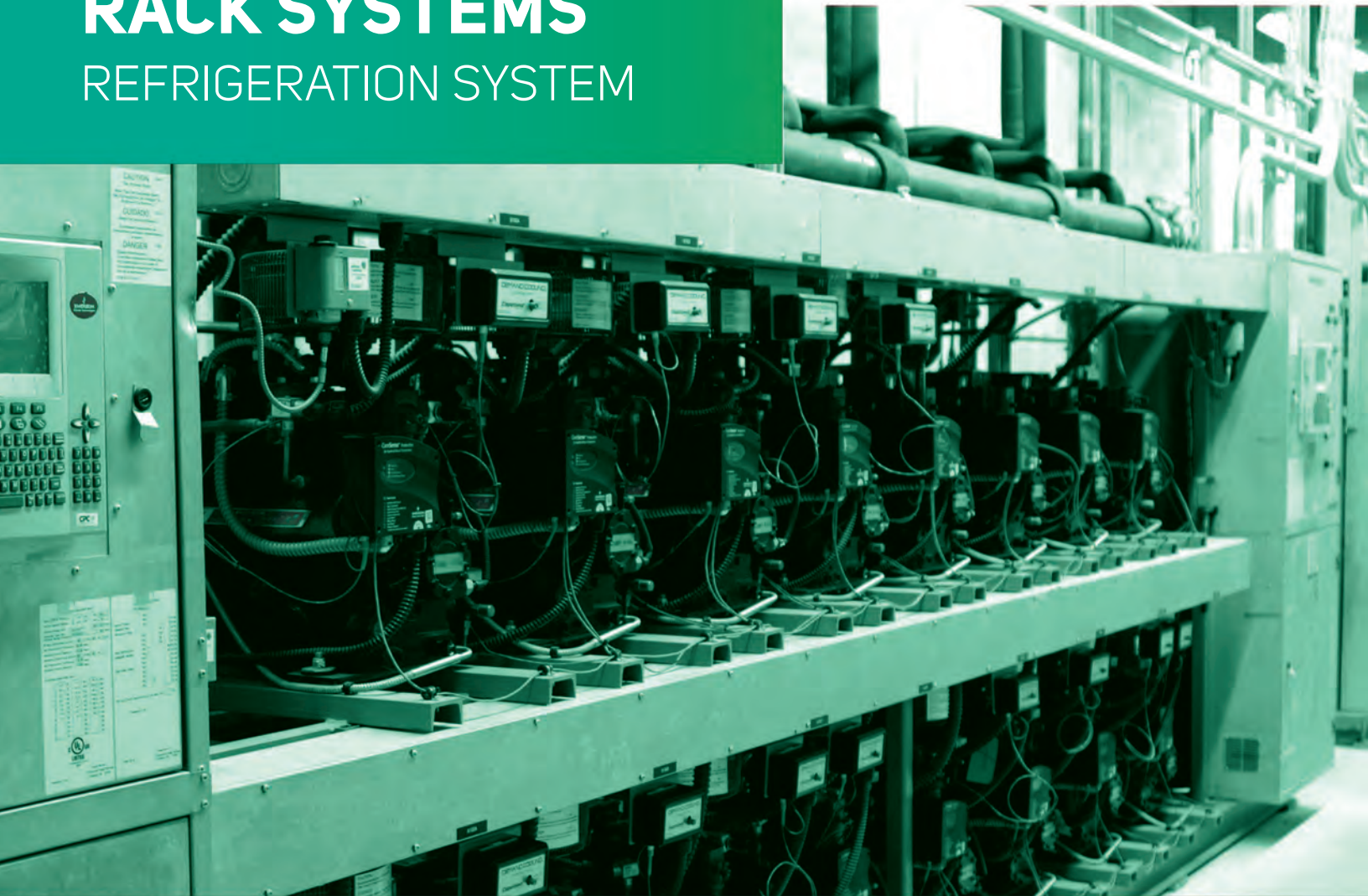




INDOOR PARALLEL RACK SYSTEMS

REFRIGERATION SYSTEM



KYSOR WARREN

SERVICE. TECHNOLOGY. SUSTAINABILITY

A Lennox International Company 

ABOUT KYSOR WARREN

Kysor Warren is a leading manufacturer of refrigerated display cases and refrigeration systems, partnering with customers to bring complete commercial refrigeration solutions to supermarkets, grocers and other retailers across North America.

Warren Refrigeration was founded in 1882, providing refrigeration solutions to food retailers. Warren Refrigeration later joined with Sherer Brothers Company which was the first to patent counters featuring glass panels in order to feature and display merchandise. They continued innovating by adding cold-air flow to the cases, so that perishable foods could be showcased in retailer shops. You can trust that our highly experienced personnel will provide you with the customer, engineering and technical support services that you need.

Our case and system solutions are known for their durability, efficiency, and quality in design. Our firsthand experience and knowledge of refrigeration system operations are unparalleled, getting you the exact results you are looking for.

Kysor Warren is a Lennox International company headquartered in Columbus, Georgia.



INDOOR PARALLEL RACK SYSTEMS REFRIGERATION SYSTEM

Kysor Warren Indoor Parallel Rack Systems are designed to be a complete refrigeration system—significantly simplifying the installation process and providing improved total cost of ownership.

Kysor Warren Indoor Parallel Rack Systems provide significant benefits to food retail customers:

- Optimizes floor space with narrow design
- Reduces the risk of leaks with less vibration throughout the system with its welded construction - some frames are huck bolt
- Energy savings
- Ease of installation, serviceability and maintenance

Our indoor product portfolio contains three market leading platforms:

- Narrow Horizontal SlimLine (NHS)
- Narrow Horizontal 2nd Generation (NH2)
- Dual Vertical Rack (DBV)



Narrow Horizontal SlimLine

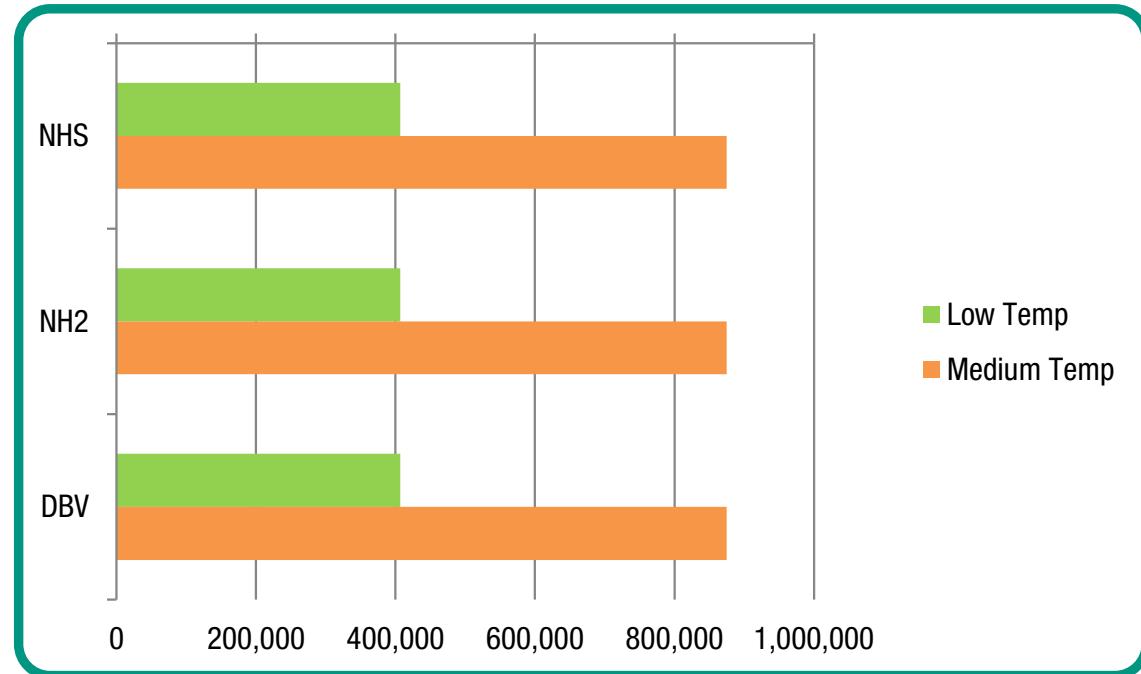


Narrow Horizontal 2nd Generation



Dual Vertical Rack

INDOOR PARALLEL RACK SYSTEMS CAPACITY RANGES



	NHS		NH2		DBV	
	LOW END OF CAPACITY	TOP END OF CAPACITY	LOW END OF CAPACITY	TOP END OF CAPACITY	LOW END OF CAPACITY	TOP END OF CAPACITY
LOW TEMPERATURE	44,000 BTUH	407,000 BTUH	44,000 BTUH	407,000 BTUH	44,000 BTUH	407,000 BTUH
MEDIUM TEMPERATURE	47,000 BTUH	875,000 BTUH	47,000 BTUH	875,000 BTUH	47,000 BTUH	875,000 BTUH

ASSUMPTIONS:
 -LOW TEMPERATURE: 100°F AMBIENT/110 SCT/-20 SST/50°F SUBCOOLING (LT LOW END IS NON-SUBCOOLED)
 -MEDIUM TEMPERATURE: 100°F AMBIENT/115 SCT/20 SST/ NON-SUBCOOLED

Typical Applications

SYSTEM TYPE			
	NARROW HORIZONTAL SLIMLINE (NHS)	NARROW HORIZONTAL 2ND GENERATION (NH2)	DOUBLE VERTICAL RACK
Common Applications	<ul style="list-style-type: none"> indoor, existing machine rooms machine houses 	<ul style="list-style-type: none"> indoor, existing machine rooms machine houses 	<ul style="list-style-type: none"> indoor, existing machine rooms machine houses

NARROW HORIZONTAL SLIMLINE REFRIGERATION SYSTEM & SPECIFICATIONS

Reduced Refrigerant Charge. Ease of Installation. Accessibility.

The NHS (Narrow Horizontal Slimline) rack is designed to meet specific customer needs for floor space. The NHS has a 36" front to back depth compared to our standard narrow rack of 42" front to back depth. The NHS design saves floor space for our customers.

Features

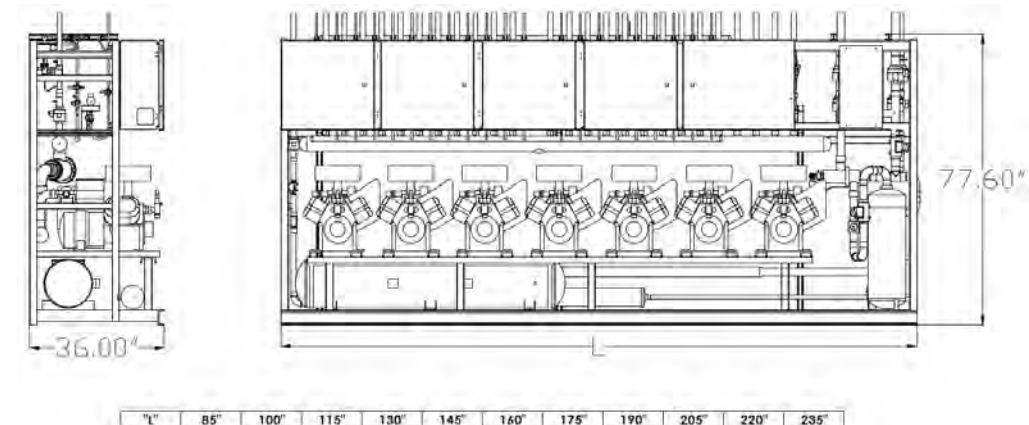
- Designed to minimize footprint and maximize useable floor space
- 36" depth vs 42" depth for standard narrow rack
- Can be mounted in most existing machine rooms with adequate space remaining



STANDARD	
Design and Construction	<ul style="list-style-type: none"> Single point electrical connection available in 280V, 460V, or 575V power input (dependent upon compressor availability)
Compressors and Piping	<ul style="list-style-type: none"> Available with single or split suction groups Loop or circuit piping Hot gas, electric or off-cycle defrost Economized vapor injected compressors available for low temperature Up to 12 large scroll or 9 semi-hermetic compressors

OPTIONS	
Compressors and Piping	<ul style="list-style-type: none"> Copeland, Carlyle and Bitzer compressors available Sub-cooled liquid Heat reclaim Split condenser valve
Electrical Components	<ul style="list-style-type: none"> Emerson Climate Technologies Novar Danfoss Micro-Thermo RDM

NHS Dimensional Diagrams



NARROW HORIZONTAL 2ND GENERATION REFRIGERATION SYSTEM & SPECIFICATIONS

Ease of Installation. Accessibility. Maximized Merchandising Space.

The NH2 Narrow Rack is the second generation Narrow Horizontal parallel compressor system and has long been recognized for its operational advantages. The simplicity and compactness of the design makes the addition of split suctions, sub-cooling, hot gas defrost, heat reclaim and/or split condenser valves simple and economical features.



Sustainable

- Use of pre-bent tubing to reduce brazed joints - significantly reducing leak potential
- Elimination of fabrication welding and painting in the factory significantly reduces harmful emissions and environmental impact

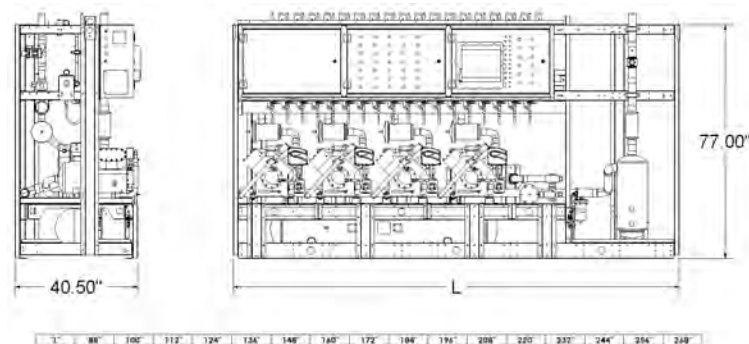
Flexible

- Configurable to meet a wide range of customer requirements
- Ease of Installation and Service
- Narrow design enables this system to be installed in a wide variety of applications - including many preexisting facilities

STANDARD	
Design and Construction	<ul style="list-style-type: none"> Single point electrical connection available in 280V, 460V, or 575V power input (dependent upon compressor availability)
Compressors and Piping	<ul style="list-style-type: none"> Available with single or split suction groups Loop or circuit piping Hot gas, electric or off-cycle defrost Economized vapor injected compressors available for low temperature Up to 12 large scroll or 9 semi-hermetic compressors

OPTIONS (CONTACT FACTORY)	
Compressors and Piping	<ul style="list-style-type: none"> Copeland, Carlyle and Bitzer compressors available Sub-cooled liquid Heat reclaim
Electrical Components	<ul style="list-style-type: none"> Emerson Climate Technologies Novar Danfoss Micro-Thermo RDM

NH2 Dimensional Diagrams



DUAL VERTICAL RACK REFRIGERATION SYSTEM & SPECIFICATIONS

Ease of Installation. Accessibility. Maximized Merchandising Space.

The Dual Vertical (DBV) rack consists of two independent refrigeration systems on a common frame. This combination yields the minimum footprint while maximizing the refrigeration capacity.



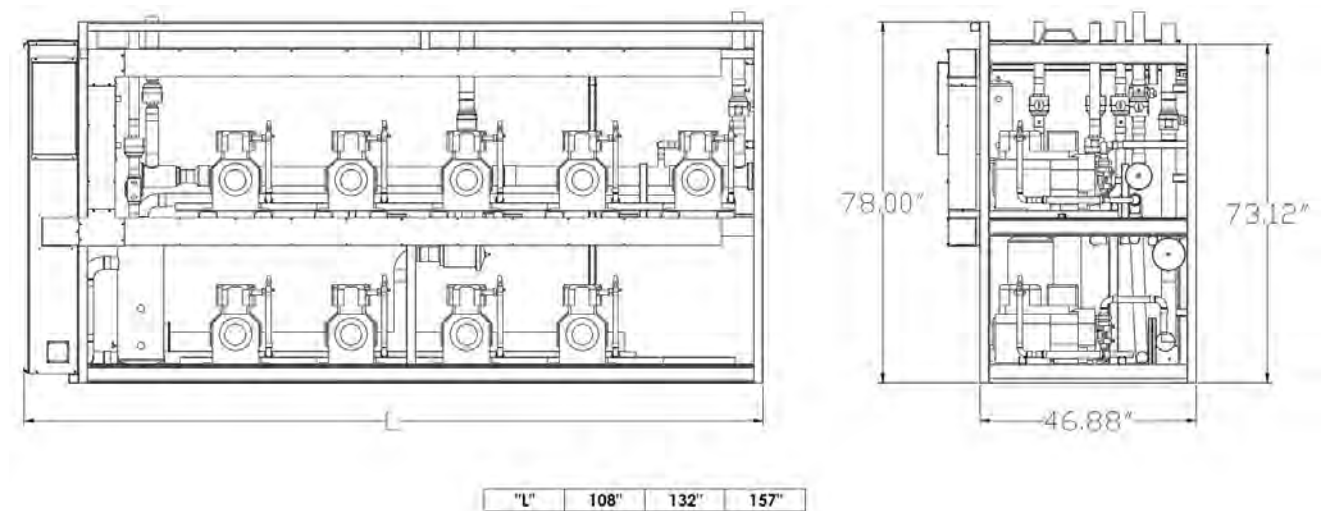
Features

- Consists of two independent conventional systems on a common frame
- Minimizes footprint for applications where space is critical

STANDARD	
Design and Construction	<ul style="list-style-type: none"> Single point electrical connection available in 280V, 460V, or 575V power input (dependent upon compressor availability)
Compressors and Piping	<ul style="list-style-type: none"> Available with single or split suction groups Loop or circuit piping Hot gas, electric or off-cycle defrost Economized vapor injected compressors available for low temperature Up to 12 large scroll or 9 semi-hermetic compressors

OPTIONS (CONTACT FACTORY)	
Compressors and Piping	<ul style="list-style-type: none"> Copeland, Carlyle and Bitzer compressors available Sub-cooled liquid Heat reclaim Split condenser valve
Electrical Components	<ul style="list-style-type: none"> Emerson Climate Technologies Novar Danfoss Micro-Thermo RDM

DBV Dimensional Diagrams





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