Horizontal Liquid Receiver Unit HLR

Perfect fit for high-efficiency, capacity modulation and limited space demand

The Best Choice for Remote Condenser Refrigeration System Solution

Copeland Scroll Digital™ Receiver Units HLR are an innovative offering by Emerson Climate Technologies for food service, retail and hospitality businesses. Their compact design and the power of Digital Scroll™ continuous capacity modulation allow for optimized environmental integration at highest system efficiency.

Flexibility for Optimum Building Integration

HLR Digital Receiver Units combine the concepts of remote condenser and digital modulation for maximized installation flexibility:

- Remote condensers can be selected to meet environmental constraints related to space, noise and energy efficiency
- Copeland Scroll Digital technology offers continuous capacity modulation for precise temperature control in small multi-evaporator systems
- Multi refrigerant approvals for wide choice of refrigerants including R134a, R404A, R448A/R449A.

Choice of Condenser Selection for Environmental Conditions

The Digital Receiver Unit can be combined with various third party condenser solutions:

- Condenser outdoor installation reducing indoor noise levels and maximizing indoor vending space
- Selection of low speed and low noise condenser fans to comply with outdoor noise regulations
- Generous condenser sizing for high system efficiency
- Use of water-cooled condensers for heat recovery systems

Energy Saving

The latest Copeland Scroll Digital compressor technology offers significantly higher efficiency than traditional piston compressors in the target application. Digital Scroll continuous capacity modulation optimizes system operation under varying load conditions. The resulting precise suction pressure control raises overall system efficiency.

Simple System Design and Installation

HLR Digital Receiver Units are fully equipped for quick installation and maintenance, saving time and costs. The delivery scope includes:

- Electronic control and protection devices
- Complete liquid line with filter dryer and sight glass
- Free standing concept and clear unit design
- Convenient access to all components

The wide Digital Scroll continuous capacity modulation range avoids the need for multiple condensing units, keeping overall system design simple.

High Reliability

The HLR indoor installation concept reliably protects the heart of the cooling system. Carefully chosen and approved quality components and the built-in electronic overload protection guarantee long-term reliability.

Features

1. High-efficiency Copeland Scroll Digital™ compressor with continuous capacity modulation
2. Easy accessible connections for discharge line and liquid line
3. Control unit with EC2-552 Controller and Overload Protector
4. HP and LP Safety pressure switch
5. Sight glasses
6. Filter drier
7. High-capacity horizontal receiver
8. Robust control box
9. On freezer models, digital compressor is with EVI technology enabled

Technical Data - 50Hz

	Low Temperature Application					Medium Temperature Application			
Model	HLR31-ZFDT-26KV4E-TFD	HLR31-ZFDT-28KV4E-TFD	HLR31-ZFDT-33KV4E-TFD	HLR31-ZFDT-36KV4E-TFD	HLR31-ZFDT-43KV4E-TFD	HLR31-ZBDT-60KCE-TFD	HLR31-ZBDT-90KCE-TFD	HLR31-ZBDT-116KCE-TFD	HLR31-ZBDT-152KCE-TFD
Voltage (V)	TFD (380-420/3~ 50Hz)					TFD (380-420/3~ 50Hz)			
Receiver with Sight Glass, Volume (l)	31					31			
Suction Line Ø (inch) with Rotalock	1 3/8					1 3/8	1 3/8	1 5/8	1 5/8
Discharge Line Ø (inch) with Rotalock	7/8					7/8	7/8	1 1/8	1 3/8
Liquid Receiver Inlet Ø (inch)	5/8					5/8	5/8	7/8	7/8
Liquid Receiver Outlet Ø (inch) with Rotalock	5/8					5/8	5/8	7/8	7/8
Height x Depth x Width (mm)	917 x 956 x 577					917 x 956 x 577		945 x 956 x 577	
Weight (kg)	155					122	125	171	180
Crank Case Heater	✓	✓	✓	✓	✓	✓	✓	✓	✓
Electrical Box with: Overload Protection, Contactor and Fuse	✓	✓	✓	✓	✓	✓	✓	✓	✓
Liquid Line equipped with: Filter Drier and Sight Glass	✓	✓	✓	✓	✓	✓	✓	✓	✓
EC2-552 Controller, Continuous Suction Pressure, Control and Continuous Condensing Pressure Control	✓	✓	✓	✓	✓	✓	✓	✓	✓
HP/LP Switch	PS1 + 2 x PS3	PS1 + 2 x PS3	PS1 + 2 x PS3	PS1 + 2 x PS3	PS1 + 2 x PS3	PS1 + 2 x PS3	PS1 + 2 x PS3	PS1 + 2 x PS3	PS1 + 2 x PS3
Oil Separator	✓	✓	✓	✓	✓	✓	✓	✓	✓
Heat Exchanger	✓	✓	✓	✓	✓				
EVI Circuit	✓	✓	✓	✓	✓				
DTC valve for liquid injection	✓	✓	✓	✓	✓				

Technical Data - 60Hz

	Low Temperature Application					Medium Temperature Application				
Model	HLR31-ZFDT-26KV4E-TF7/TFC	HLR31-ZFDT-28KV4E-TF7/TFC	HLR31-ZFDT-33KV4E-TF7/TFC	HLR31-ZFDT-36KV4E-TF7/TFC	HLR31-ZFDT-43KV4E-TF7	HLR31-ZBDT-60KCE-TF7/TFC	HLR31-ZBDT-76KCE-TF7/TFC	HLR31-ZBDT-90KCE-TF7/TFC	HLR31-ZBDT-93KCE-TF7/TFC	HLR31-ZBDT-114KCE-TF7
Voltage (V)	TF7 (380V/3~ 60Hz), TFC (220/230V/3~ 60Hz)				TF7 (380V/3~ 60Hz)	TF7 (380V/3~ 60Hz), TFC (220/230V/3~ 60Hz)				TF7 (380V/3~ 60Hz)
Receiver with Sight Glass, Volume (l)	31					31				
Suction Line Ø (inch) with Rotalock	1 3/8					1 3/8	1 3/8	1 3/8	1 3/8	1 5/8
Discharge Line Ø (inch) with Rotalock	7/8					7/8	7/8	1 1/8	1 1/8	1 3/8
Liquid Receiver Inlet Ø (inch)	5/8					5/8	5/8	7/8	7/8	7/8
Liquid Receiver Outlet Ø (inch) with Rotalock	5/8					5/8	5/8	7/8	7/8	7/8
Height x Depth x Width (mm)	917 x 956 x 577					917 x 956 x 577				
Weight (kg)	155					122	125	125	125	130
Crank Case Heater	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Electrical Box with: Overload Protection, Contactor and Fuse	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Liquid Line equipped with: Filter Drier and Sight Glass	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
EC2-552 Controller, Continuous Suction Pressure, Control and Continuous Condensing Pressure Control	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
HP/LP Switch	PS1 + 2 x PS3	PS1 + 2 x PS3	PS1 + 2 x PS3	PS1 + 2 x PS3	PS1 + 2 x PS3	PS1 + 2 x PS3	PS1 + 2 x PS3	PS1 + 2 x PS3	PS1 + 2 x PS3	PS1 + 2 x PS3
Oil Separator	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Heat Exchanger	✓	✓	✓	✓	✓					
EVI Circuit	✓	✓	✓	✓	✓					
DTC valve for liquid injection	✓	✓	✓	✓	✓					

Performance Data - R404a

50 Hz	Medium Temperature Application		[1] Performance data at Water cooled Conditions			(2) Performance data at Air cooled Conditions		
	Model Name	HP	Capacity (kW)	Power(kW)	COP	Capacity (kW)	Power(kW)	COP
	HLR31-ZBDT60KCE-TFD	8	20.8	5.0	4.1	13.4	8.1	1.7
	HLR31-ZBDT90KCE-TFD	12	30.7	7.1	4.3	19.7	11.7	1.7
	HLR31-ZBDT116KCE-TFD	16	40.4	9.3	4.3	25.8	15.9	1.6
	HLR31-ZBDT152KCE-TFD	20	53.5	12.2	4.4	34.5	20.4	1.7

50 Hz	Low Temperature Application		[1] Performance data at Water cooled Conditions			[2] Performance data at Air cooled Conditions		
	Model Name	HP	Capacity (kW)	Power(kW)	COP	Capacity (kW)	Power(kW)	COP
	HLR31-ZFDT26KV4E-TFD	7	10.9	4.5	2.4	8.0	7.6	1.1
	HLR31-ZFDT28KV4E-TFD	8	12.0	5.0	2.4	8.6	8.4	1.0
	HLR31-ZFDT33KV4E-TFD	9	14.8	6.3	2.3	11.3	10.4	1.1
	HLR31-ZFDT36KV4E-TFD	10	15.8	6.9	2.3	12.1	11.0	1.1
	HLR31-ZFDT43KV4E-TFD	12	18.3	7.6	2.4	14.1	12.1	1.2

60 Hz	Medium Temperature Application		[1] Performance data at Water cooled Conditions			[2] Performance data at Air cooled Conditions		
	Model Name	HP	Capacity (kW)	Power(kW)	COP	Capacity (kW)	Power(kW)	COP
	HLR31-ZBDT60KCE-TF7/TFC	8	25.2	6.1	4.1	16.5	9.8	1.7
	HLR31-ZBDT76KCE-TF7/TFC	10	31.2	7.6	4.1	20.5	12.2	1.7
	HLR31-ZBDT90KCE-TF7/TFC	12	37.2	8.9	4.2	24.2	14.2	1.7
	HLR31-ZBDT93KCE-TF7/TFC	13	39.1	9.3	4.2	25.6	14.9	1.7
	HLR31-ZBDT114KCE-TF7	16	46.6	11.4	4.1	30.8	17.9	1.7

60 Hz	Low Temperature Application		[1] Performance data at Water cooled Conditions			[2] Performance data at Air cooled Conditions		
	Model Name	HP	Capacity (kW)	Power(kW)	COP	Capacity (kW)	Power(kW)	COP
	HLR31-ZFDT26KV4E-TF7/TFC	7	13.2	5.6	2.4	10.1	9.1	1.1
	HLR31-ZFDT28KV4E-TF7/TFC	8	14.5	6.1	2.4	10.9	10.0	1.1
	HLR31-ZFDT33KV4E-TF7/TFC	9	18.0	7.7	2.4	13.5	12.4	1.1
	HLR31-ZFDT36KV4E-TF7/TFC	10	19.4	8.3	2.3	14.5	13.0	1.1
	HLR31-ZFDT43KV4E-TF7	12	21.9	9.2	2.4	16.8	14.3	1.2

[1]*R404a @ EN 12900
MT Condition: -5 C / 30 C / 10 K SH / 3K SC,
LT Condition: -25 C / 30 C / 10 K SH / 3k SC

[2]* R404a @ EN 12900
MT Condition: -5 C / 55 C / 10 K SH / 3K SC,
LT Condition: -25 C / 55 C / 10 K SH / 3k SC

Performance Data - R448a/R449a

	Medium Temperature Application		[1] Performance data at Water cooled Conditions			(2) Performance data at Air cooled Conditions		
50 Hz	Model Name	HP	Capacity (kW)	Power(kW)	COP	Capacity (kW)	Power(kW)	COP
	HLR31-ZBDT60KCE-TFD	8	19.9	4.55	4.36	14.4	7.7	1.9
	HLR31-ZBDT90KCE-TFD	12	29.1	6.44	4.52	21.0	11.0	1.9
	HLR31-ZBDT116KCE-TFD	16	38.0	8.17	4.65	26.9	14.9	1.8
	HLR31-ZBDT152KCE-TFD	20	51.0	10.92	4.67	36.8	20.0	1.8

	Low Temperature Application		[1] Performance data at Water cooled Conditions			[2] Performance data at Air cooled Conditions		
50 Hz	Model Name	HP	Capacity (kW)	Power(kW)	COP	Capacity (kW)	Power(kW)	COP
	HLR31-ZFDT26KV4E-TFD	7	9.4	3.89	2.42	7.3	6.8	1.1
	HLR31-ZFDT28KV4E-TFD	8	10.4	4.38	2.38	7.9	7.8	1.0
	HLR31-ZFDT33KV4E-TFD	9	12.8	5.48	2.34	10.2	9.5	1.1
	HLR31-ZFDT36KV4E-TFD	10	14.3	6.29	2.27	11.0	10.1	1.1
	HLR31-ZFDT43KV4E-TFD	12	16.5	6.91	2.39	12.7	11.0	1.1

	Medium Temperature Application		[1] Performance data at Water cooled Conditions			[2] Performance data at Air cooled Conditions		
60 Hz	Model Name	HP	Capacity (kW)	Power(kW)	COP	Capacity (kW)	Power(kW)	COP
	HLR31-ZBDT60KCE-TF7/TFC	8	23.9	5.66	4.21	17.2	9.5	1.8
	HLR31-ZBDT76KCE-TF7/TFC	10	29.4	7.00	4.20	21.2	11.7	1.8
	HLR31-ZBDT90KCE-TF7/TFC	12	35.1	8.16	4.30	25.1	13.7	1.8
	HLR31-ZBDT93KCE-TF7/TFC	13	36.9	8.60	4.29	26.5	14.4	1.8
	HLR31-ZBDT114KCE-TF7	16	43.2	10.06	4.29	31.9	17.1	1.9

	Low Temperature Application		[1] Performance data at Water cooled Conditions			[2] Performance data at Air cooled Conditions		
60 Hz	Model Name	HP	Capacity (kW)	Power(kW)	COP	Capacity (kW)	Power(kW)	COP
	HLR31-ZFDT26KV4E-TF7/TFC	7	11.8	4.96	2.39	9.4	8.7	1.1
	HLR31-ZFDT28KV4E-TF7/TFC	7.5	13.1	5.52	2.37	10.4	9.8	1.1
	HLR31-ZFDT33KV4E-TF7/TFC	9	16.1	6.76	2.38	12.7	11.8	1.1
	HLR31-ZFDT36KV4E-TF7/TFC	10	17.4	7.40	2.36	13.7	12.5	1.1
	HLR31-ZFDT43KV4E-TF7	12	20.2	8.32	2.43	16.1	13.8	1.2

[1]*R448A/R449A @ EN 12900
MT Condition: , -5 C / 30 C / 10 K SH / 3K SC
LT Condition: -25 C / 30 C / 10 K SH / 3k SC

[2]*R448A/R449A @ EN 12900
MT Condition: -5 C / 55 C / 10 K SH / 3K SC,
LT Condition: -25 C / 55 C / 10 K SH / 3k SC