

# C M E

Custom Mechanical Equipment LLC



SRU

Single Room Units

2101 Hall Blvd.  
Ponca City, OK 74601

Toll Free: 866-687-9803  
Fax: 580-762-4117

# Single Room Unit (SRU)

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**Manufacturer:** Custom Mechanical Equipment  
2101 Hall Blvd.  
Ponca City, OK 74601  
Toll Free: 866-687-9803  
Fax: (580) 762-4117  
[www.cmemultizone.com](http://www.cmemultizone.com)

**Warranty Agent:** Lennox™ Industries  
2100 Lake Park Blvd.  
Richardson, TX 75080-2254  
Telephone: (972) 497-5000

**Product Description:** *Application:* Heating, Ventilation, and Air-conditioning Appliance  
*Type:* Year-round Exterior Mounted Unit  
*Electrical:* 208-230  
*Weight:* 650 lbs.

## Configuration:

Single Room Units are custom designed to match your specific needs. The SRU has either a Lennox gas fired two-stage furnace or a Lennox electric element appliance for maximum efficiency and reliable performance. Each is equipped with an economizer and a condenser with a high efficiency evaporator coil. This results in maximum **energy savings** along with **comfort** and **control**.



## SRU Advantages

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Each Single Room Unit manufactured by Custom Mechanical Equipment contains Lennox High Performance Equipment. We have developed an outstanding relationship with Lennox Industries over the years, and continue to trust and utilize the performance and reliability of Lennox products. Lennox equipment is warranted by Lennox Industries.

### Independent, Highly Effective Systems

- 94.3% AFUE Two-Stage Gas Heating
- 13.5 SEER Condensing Units
- Modulating Economizer
- Energy management options
- T7300 Night Set-back

### Simple Maintenance

- Lennox Dimension Furnace
- Direct Expansion Cooling
- Readily available parts and components
- Easy equipment access

### Ventilation Codes

- Meets ASHRE 62-1996 ventilation requirements with proper application

### Options

*Heating Sources:* Natural Gas  
Electric

*Cooling Sources:* Direct Expansion  
Future Cooling

*Economizer Control:* Enthalpy  
Dry Bulb

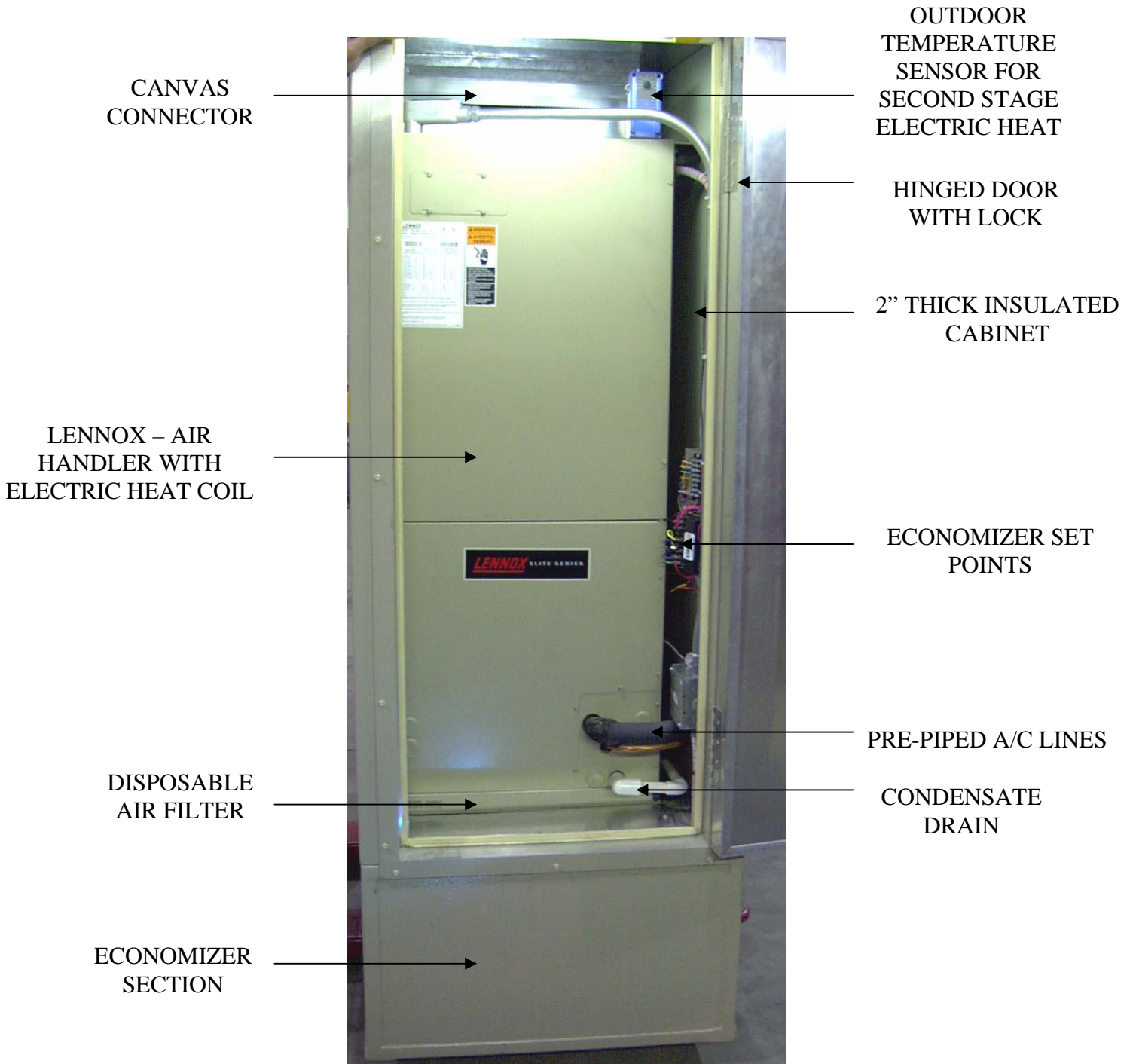
*Ventilation Control:* Economizer Ventilation Control  
Dual minimum position settings per AHU  
CO2 Demand Ventilation  
Space Occupancy Sensors

*Dehumidification:* Humidity control with fan speed control  
Return plenum dehumidification system



# SRU Easy Access Interior

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## SRU Technical Specifications – HS26-042

Nominal Tonnage (kW)		3.5 (12.3)	
Liquid line – in. (mm) o.d. connection (sweat)		3/8 (9.5)	
Suction line – in. (mm) o.d. connection (sweat)		7/8 (22.2)	
* Refrigerant charge furnished (HCFC-22)		5 lbs. 10 oz. (2.55 kg)	
Condenser Coil	Net face area – sq. ft. (m <sup>2</sup> )	Outer coil	15.11 (1.40)
		Inner coil	5.40 (0.50)
	Tube diameter – in. (mm) & no. of rows		5/16 (7.9) – 1.37
	Fins per inch (m)		18 (748)
Condenser Fan	Diameter – in. (mm) & no. of blades		18 (457) – 4
	Motor hp (W)		1/6 (124)
	Cfm (L/s)		2610 (1232)
	Rpm		1105
	Watts		200

\* Refrigerant charge sufficient for 20 ft. (6.0 m) length of refrigerant lines.

ELECTRICAL DATA		
Line voltage data – 60 hz		208/230v 1ph
Rec. maximum fuse or circuit breaker size (amps)		40
* Minimum circuit ampacity		26.5
Compressor	Rated local amps	20.3
	Power factor	0.84
	Locked rotor amps	127.0
Condenser Coil Fan Motor	Full load amps	1.1
	Locked rotor amps	1.9

\* Refer to National or Canadian Electrical Code manual to determine wire, fuse and disconnect size requirements.

NOTE – Extremes of operating range are plus 10% and minus 5% of line voltage.

ARI RATING							
Unit Size & Model No. Sound Rating Number (db)	ARI Total Cooling Capacity		SEER	EER *	Total Unit Watts	Evaporator Coil	Expansion Valve Kit
	Btuh	kW					
3.5 Ton HS29-042 (78)	41,500	12.2	11.00	9.80	4235	CB30U- 41/46	Factory Installed

\* Rated in accordance with ARI standard 210/240; 95° F (35° C) outdoor air temperature, 80° F (27° C) DB/67° F (19° C) WB entering evaporator air with 25 ft. (7.6m) of connecting refrigerant lines

## SRU Technical Specifications – HP29-042

Nominal Tonnage (kW)		3.5 (11.7)	
Liquid line – in. (mm) o.d. connection (sweat)		3/8 (9.5)	
Suction line – in. (mm) o.d. connection (sweat)		7/8 (22.2)	
* Refrigerant charge furnished (HCFC-22)		8 lbs. 8 oz. (3.86 kg)	
Condenser Coil	Net face area – sq. ft. (m <sup>2</sup> )	Outer coil	15.21 (1.41)
		Inner coil	14.5 (1.35)
	Tube diameter – in. (mm) & no. of rows		5/16 (7.9) – 2
	Fins per inch (m)		18 (709)
Condenser Fan	Diameter – in. (mm) & no. of blades		18 (457) – 4
	Motor hp (W)		1/3 (249)
	Cfm (L/s)		2975 (1405)
	Rpm		1130
	Watts		310

\* Refrigerant charge sufficient for 20 ft. (6.0 m) length of refrigerant lines.

ELECTRICAL DATA		
Line voltage data – 60 hz		208/230v 1ph
Rec. maximum fuse or circuit breaker size (amps)		40
* Minimum circuit ampacity		26.0
Compressor	Rated local amps	19.3
	Power factor	0.89
	Locked rotor amps	127.0
Condenser Coil Fan Motor	Full load amps	1.9
	Locked rotor amps	4.1

\* Refer to National or Canadian Electrical Code manual to determine wire, fuse and disconnect size requirements.

NOTE – Extremes of operating range are plus 10% and minus 5% of line voltage.

ARI RATING							
Unit Size & Model No. Sound Rating Number (db)	ARI Total Cooling Capacity		SEER	EER *	Total Unit Watts	Evaporator Coil	Expansion Valve Kit
	Btuh	kW					
3.5 Ton HP29-042 (78)	40,000	11.7	11.00	9.40	3805	CB30U- 41/46	Factory Installed

\* Rated in accordance with ARI standard 210/240; 95° F (35° C) outdoor air temperature, 80° F (27° C) DB/67° F (19° C) WB entering evaporator air with 25 ft. (7.6m) of connecting refrigerant lines

## SRU Technical Specifications – CB30M-46

Evaporator Coil	Net face area – ft. <sup>2</sup> (m <sup>2</sup> )	5.0 (0.46)
	Tube outside diameter – in. (mm)	3/8 (9.5)
	Number of rows	3
	Fins per inch (fins per m)	12 (472)
	Suct. (vapor) line conn. – in. (mm) sweat	7/8 (22.2) CBM30M 3/4 (19) CB30U
	Liquid line conn. – in. (mm) sweat	3/8 (9.5)
Condensate drain connection (fpt) – in. (mm)		(2) 3/4 (19)
Nominal cooling capacity – tons (kW)		3.5 (12.3) CB30M 3-3.5 (10.6-12.3) CB30U
Refrigerant		HCFC-22
Blower wheel nominal diameter x width – in. (mm)		11 x 8 (279 x 203)
Blower motor output – hp (W)		1/3 (249)
Number and size of filters	In.	(1) 20 x 20 x 1
	mm.	(1) 508 x 508 x 25
Electrical characteristics (60hz)		208/230v – 1ph
Shipping weight – lbs. (kg) 1 package		181 (82)

Note: The A.F.U.E. (Annual Fuel Utilization Efficiency based on U.S. DOE test procedures and according to FTC labeling regulations) is 100% for each electric heat coil.

ELECTRIC ELEMENT DATA (1 Phase)								
Electric Heat kW, Model Number & Shipping Weight		# of Steps	Volts Input	kW Input	Btuh Input *	Blower Motor Amps **	Minimum Circuit Ampacity	
							Circuit 1	Circuit 2
8 kW	ECB29-8 (28K33) ECB29-8CB (28K34) 5 lbs. (2 kg)	2 steps	208	6.0	20,500	2.4	39	----
			220	6.7	22,900	2.4	41	----
			230	7.3	25,100	2.4	43	----
			240	8.0	27,300	2.4	45	----
9 kW	ECB29-9CB (10L11) ECB29EH-9CB (91K67) 5 lbs. (2 kg)	2 steps	208	6.8	25,600	2.4	43	----
			220	7.6	28,700	2.4	45	----
			230	8.3	31,400	2.4	47	----
			240	9.0	34,100	2.4	49	----
10 kW	ECB29-10 (28K35) ECB29-10CB (28K36) 5 lbs. (2 kg)	2 steps	208	7.5	25,600	2.4	48	----
			220	8.4	28,700	2.4	51	----
			230	9.2	31,400	2.4	53	----
			240	10.0	34,100	2.4	55	----
12.5 kW	ECB29-12.5CB (28K37) ECB29EH-12.5CB (91K68) 10 lbs. (5 kg)	3 steps	208	9.4	32,000	2.4	22	38
			220	10.5	35,800	2.4	23	40
			230	11.5	39,200	2.4	24	42
			240	12.5	42,600	2.4	25	43

\* Electric heater capacity only – does not include additional blower motor heat capacity.

\*\* Minimum circuit ampacity for blower motor only.

## SRU Technical Specifications – CB30M-46

CB30M-46 BLOWER PERFORMANCE (208/230v)										
External Static Pressure		Air Volume and Motor Watts at Specific Blower Taps								
		High			Medium			Low		
In. w.g.	Pa	cfm	L/s	Watts	cfm	L/s	Watts	cfm	L/s	Watts
.00	0	1825	860	565	1600	755	455	1325	625	370
.05	10	1790	845	555	1585	750	455	1335	630	370
.10	25	1750	825	540	1565	740	450	1335	630	370
.15	35	1710	805	530	1540	725	440	1330	630	365
.20	50	1660	785	520	1505	710	435	1320	620	360
.25	60	1610	760	505	1470	695	425	1300	615	355
.30	75	1555	735	495	1425	675	415	1270	600	350
.40	100	1430	675	465	1320	625	390	1195	565	330
.50	125	1290	610	440	1195	565	365	1090	515	310
.60	150	1135	535	415	1050	495	335	955	450	285
.70	175	965	455	385	875	415	310	795	375	260
.75	185	875	415	370	780	370	295	700	330	250

NOTE – All air data is measured external to unit with air filter in place.  
Electric heaters have no appreciable air resistance.

# SRU Ratings

## HS29-042 -- CB30M-46 - CB30U-41/46 COOLING CAPACITY

Entering Wet Bulb Temp.	Total Air Volume		Outdoor Air Temperature Entering Outdoor Coil																							
			85° F (29° C)						95° F (35° C)						105° F (41° C)						115° F (46° C)					
	Total Cooling Capacity		Comp Motor kW Input	Sensible to Total Ratio (S/T)			Total Cooling Capacity		Comp Motor kW Input	Sensible to Total Ratio (S/T)			Total Cooling Capacity		Comp Motor kW Input	Sensible to Total Ratio (S/T)			Total Cooling Capacity		Comp Motor kW Input	Sensible to Total Ratio (S/T)				
				Dry Bulb						Dry Bulb						Dry Bulb						Dry Bulb				
	cfm	L/s	kBtu/h	kW	75° F 24° C	80° F 27° C	85° F 29° C	kBtu/h	kW	Input	75° F 24° C	80° F 27° C	85° F 29° C	kBtu/h	kW	Input	75° F 24° C	80° F 27° C	85° F 29° C	kBtu/h	kW	Input	75° F 24° C	80° F 27° C	85° F 29° C	
63° F (17° C)	1250	590	41.2	12.1	3.17	0.73	0.87	0.98	39.8	11.7	3.54	0.74	0.88	0.99	38.3	11.2	3.95	0.75	0.90	1.00	36.7	10.8	4.41	0.77	0.92	1.00
	1400	660	42.0	12.3	3.19	0.76	0.90	1.00	40.5	11.9	3.56	0.77	0.92	1.00	39.0	11.4	3.96	0.78	0.94	1.00	37.4	11.0	4.43	0.80	0.95	1.00
	1550	730	42.7	12.5	3.21	0.78	0.93	1.00	41.2	12.1	3.57	0.80	0.95	1.00	39.7	11.6	3.98	0.81	0.96	1.00	38.0	11.1	4.45	0.83	0.98	1.00
67° F (19° C)	1250	590	43.8	12.8	3.23	0.57	0.71	0.84	42.2	12.4	3.59	0.58	0.72	0.85	40.6	11.9	4.01	0.59	0.73	0.86	38.9	11.4	4.48	0.60	0.75	0.89
	1400	660	44.5	13.0	3.24	0.59	0.73	0.87	42.9	12.6	3.61	0.59	0.75	0.89	41.2	12.1	4.02	0.60	0.76	0.89	39.4	11.5	4.49	0.61	0.78	0.93
	1550	730	45.0	12.2	3.26	0.60	0.76	0.91	43.4	12.7	3.62	0.61	0.77	0.92	41.7	12.2	4.03	0.62	0.79	0.93	39.9	11.7	4.57	0.63	0.81	0.96
71° F (22° C)	1250	590	46.6	13.7	3.29	0.43	0.56	0.68	45.0	13.2	3.65	0.43	0.56	0.69	43.3	12.7	4.08	0.43	0.57	0.70	41.4	12.1	4.55	0.43	0.54	0.72
	1400	660	47.3	13.9	3.30	0.43	0.57	0.71	45.6	13.4	3.67	0.44	0.58	0.72	43.9	12.9	4.09	0.44	0.59	0.73	42.0	12.3	4.56	0.44	0.60	0.75
	1550	730	47.9	14.0	3.31	0.44	0.59	0.74	46.1	13.5	3.69	0.44	0.60	0.75	44.3	13.0	4.10	0.44	0.61	0.76	42.4	12.4	4.58	0.45	0.62	0.79

# SRU Ratings

## HP29-042 -- CB30M-46 - CB30U-41/46 COOLING CAPACITY

Entering Wet Bulb Temp.	Total Air Volume		Outdoor Air Temperature Entering Outdoor Coil																							
			85° F (29° C)						95° F (35° C)						105° F (41° C)						115° F (46° C)					
	Total Cooling Capacity		Comp Motor kW Input	Sensible to Total Ratio (S/T)			Total Cooling Capacity		Comp Motor kW Input	Sensible to Total Ratio (S/T)			Total Cooling Capacity		Comp Motor kW Input	Sensible to Total Ratio (S/T)			Total Cooling Capacity		Comp Motor kW Input	Sensible to Total Ratio (S/T)				
				Dry Bulb						Dry Bulb						Dry Bulb						Dry Bulb				
	cfm	L/s	kBtuh	kW	75° F 24° C	80° F 27° C	85° F 29° C	kBtuh	kW	75° F 24° C	80° F 27° C	85° F 29° C	kBtuh	kW	75° F 24° C	80° F 27° C	85° F 29° C	kBtuh	kW	75° F 24° C	80° F 27° C	85° F 29° C	kBtuh	kW	75° F 24° C	80° F 27° C
63° F (17°C)	1100	520	39.3	11.5	3.15	0.72	0.85	0.97	37.9	11.1	3.51	0.73	0.87	0.98	36.5	10.7	3.91	0.74	0.88	0.99	34.9	10.2	4.38	0.76	0.91	1.00
	1275	600	40.3	11.8	3.16	0.75	0.90	1.00	38.9	11.4	3.52	0.76	0.92	1.00	37.4	11.0	3.94	0.78	0.93	1.00	35.9	10.5	4.40	0.79	0.95	1.00
	1450	685	41.2	12.1	3.18	0.78	0.94	1.00	39.8	11.7	3.54	0.80	0.95	1.00	38.3	11.2	3.95	0.81	0.97	1.00	36.7	10.8	4.41	0.83	0.99	1.00
67° F (19°C)	1100	520	42.0	12.3	3.19	0.57	0.69	0.82	40.5	11.9	3.55	0.57	0.70	0.83	38.9	11.4	3.96	0.58	0.72	0.85	37.2	10.9	4.43	0.58	0.73	0.87
	1275	600	42.9	12.6	3.20	0.58	0.73	0.87	41.3	12.1	3.57	0.59	0.74	0.88	39.7	11.6	3.97	0.60	0.76	0.90	38.0	11.1	4.44	0.61	0.77	0.92
	1450	685	43.6	12.8	3.21	0.60	0.76	0.91	42.1	12.3	3.58	0.61	0.77	0.92	40.4	11.8	3.99	0.62	0.79	0.94	38.6	11.3	4.45	0.63	0.81	0.96
71° F (22°C)	1100	520	44.9	13.2	3.23	0.43	0.55	0.67	43.3	12.7	3.6	0.43	0.55	0.68	41.7	12.2	4.01	0.43	0.56	0.69	39.9	11.7	4.48	0.43	0.57	0.70
	1275	600	45.8	13.4	3.25	0.43	0.57	0.70	44.2	13.0	3.61	0.43	0.57	0.71	42.5	12.5	4.03	0.44	0.58	0.73	40.6	11.9	4.49	0.44	0.59	0.75
	1450	685	46.6	13.7	3.26	0.44	0.59	0.74	44.9	13.2	3.63	0.44	0.60	0.75	43.1	12.6	4.03	0.45	0.61	0.77	41.2	12.1	4.51	0.45	0.62	0.78

NOTE – All values are gross capacities and do not include evaporator coil blower motor heat deduction.