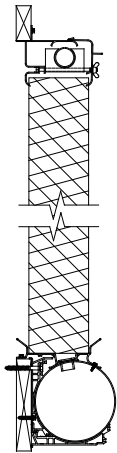
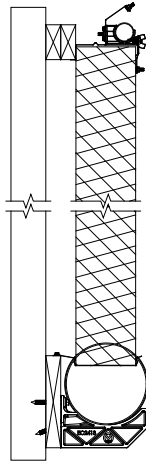


Munters Evaporative Cooling Systems



'CT' System
Aluminum Header
PVC Self-Contained Reservoir



'CB' System
Stainless Steel Header
PVC Self-contained Reservoir

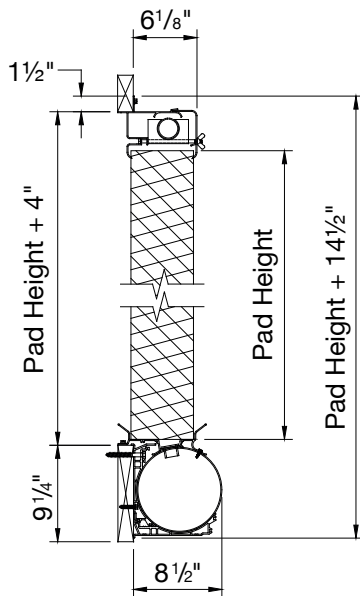
Technical Specifications

- 'CT' Extruded Aluminum headers (standard or open) and 'CB' Stainless Steel headers are lightweight and resist corrosion.
- Spray deflector and large pipe with precision drilled holes ensure even pad wetting. Stainless steel bolt with wing nut permits easy removal of pad.
- Cooling pads simply lift out for easy inspection and periodic cleaning.
- 'CT' PVC drip collectors and 'CB' Stainless Steel drip collectors are specially engineered to be sturdy and corrosion resistant giving superior support to cooling pad.
- Removable Pad Retainers with Wing Nuts make it easy to remove for maintenance.

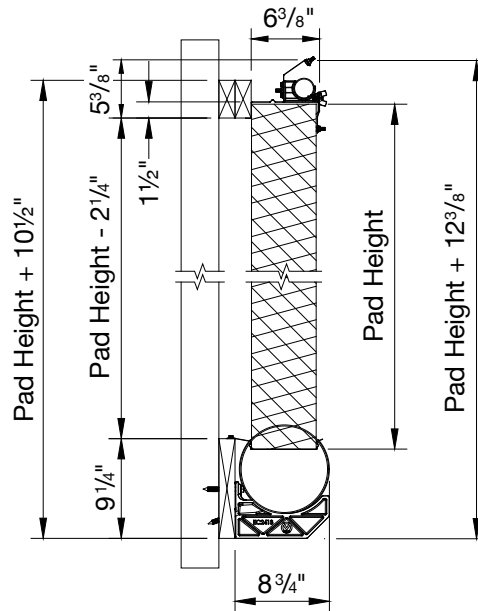
Dimensional Data: Framed Wall Openings (shown for I.D.)

CT	all System Lengths	Pad Length + 1/2"	Pad Height + 4"
CB	all System Lengths	Pad Length	Pad Height - 2 1/4"

'CT' System



'CB' System



Technical Specifications

Cooling Pad Comparison

Pad Specifications			
Type of Pad	6" Pad		
Water Delivery	Drip		
Flute Angle	45/15		
Efficiency	71%		
Design Velocity (FPM)	350/375		
Design Pressure Drop (in W.C.)	0.04/0.05"		
Square foot of Pad required (assume fan capacity is 20,000 cfm)	57/53.3 ft ²		
Outside Conditions			Expected Pad Exit Temperature (°F)
Dry Bulb(°F)	Wet Bulb(°F)	RH	
105	75	25%	87
105	70	16	84
100	75	32	85
100	70	22	82
95	75	40	83
95	70	28	80
90	75	50	81
90	70	38	78
85	75	62	79
85	70	48	76

Bleed Off/Water flow requirements

Start with 1 gallon/hour (GPH) for each linear foot of cooling system and adjust as needed.

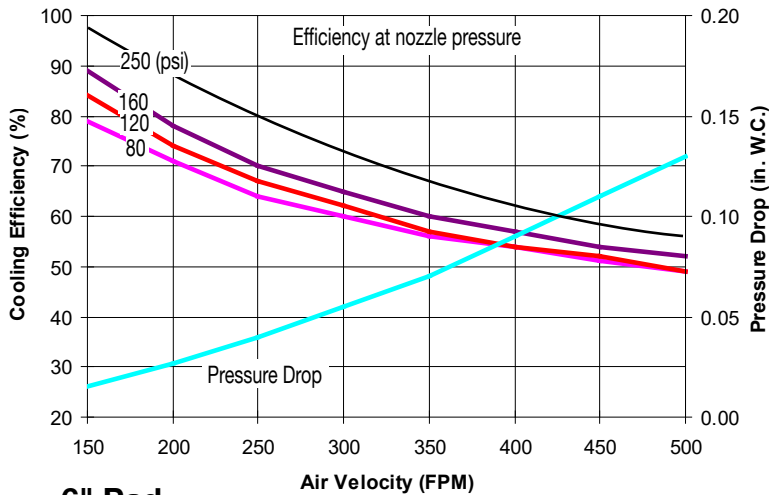
The following formula and table will calculate your bleed off rate:

$$\frac{60 \text{ min.}}{\text{GPH needed}} \times 5 \text{ gal.} = \text{time to fill bucket (in minutes)}$$

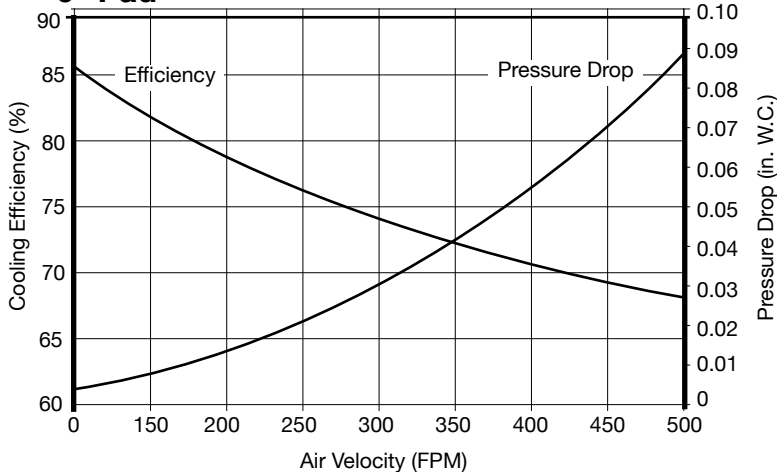
Cooling Length	Bleed Off Flow in GPH	Minutes to fill 5-gallon bucket
10 ft.	10	30
20 ft.	20	15
30 ft.	30	10
40 ft.	40	7½
50 ft.	50	6
60 ft.	60	5
70 ft.	70	4¼

$$\text{Example of 30' system: } \frac{60}{30} \times 5 = 10 \text{ (minutes)}$$

2" Pad



6" Pad



Pad Size Requirements

To determine the size of the ExpressCool™ panelized system or the spray-on fogging pad needed for your building:

- Determine airflow in CFM (cubic feet per minute). Add up the capacity of all the fans in the building.
- Decide on your desired pad height. Pads are available in heights of 2 to 6 feet. Allow an additional 16 inches for CT Cooling Systems, and 13 inches for CB Cooling Systems.
- Determine the length of pad required for your CFM. Divide your CFM requirement by the following number for your selected pad height:

- 6-inch pad x 12-inch wide
 - 700-750 for 2 foot high pads
 - 1,050-1,125 for 3 foot high pads
 - 1,400-1,500 for 4 foot high pads
 - 1,750-1,875 for 5 foot high pads
 - 2,100-2,250 for 6 foot high pads
- Fogger pads x 24-inch wide
 - 2,400-2,600 for 4 foot pads
 - 3,000-3,250 for 5 foot high pads
 - 3,600-3,900 for 6 foot high pads

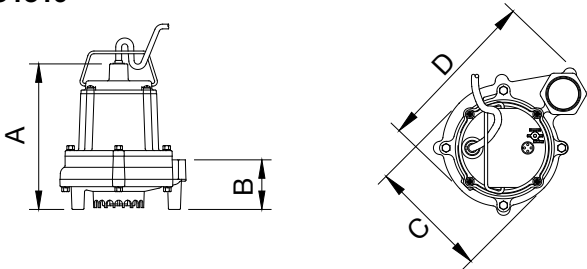
Evaporative Cooling Pumps

Submersible Pumps

Technical Specifications

- Completely Submersible.
- Oil filled motor for maximum heat dissipation.

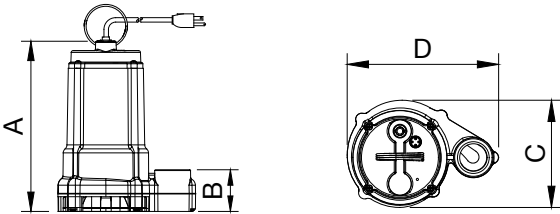
EC1319



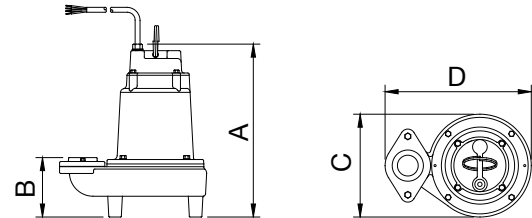
Dimensional Data:

Cat. No.	A	B	C	D
EC1319	9 ⁷ / ₈ "	3 ³ / ₈ "	6 ⁷ / ₈ "	9 ¹ / ₂ "
EC1122	11"	2 ³ / ₄ "	8.4"	8.9"
EC1123	11"	2 ³ / ₄ "	8.4"	8.9"
EC1269-3	16 ¹ / ₈ "	5 ³ / ₄ "	10"	14 ¹ / ₈ "
EC1270-3	16 ¹ / ₈ "	5 ³ / ₄ "	10"	14 ¹ / ₈ "

EC1122 & EC1124



EC1269-3 & EC1270-3



Technical Data: 60 Hz shown (Contact office for information about 50 Hz pumps.)

Cat. No.	*Mfr. Model No.	HP ¹	Phase	Voltage	Amps	Thermally Protected	Power Cord Length	Outlet Size
EC1319	6EN-CIM (506610)	1/3	1	115	6.0	yes	10' w/plug	1 1/2" NPT
EC1122	9EC-CIM (509805)	4/10	1	115	7.5	yes	20' w/plug	1 1/2" NPT
EC1124	9EC-CIM (509807)	4/10	1	230	4.0	yes	20' w/plug	1 1/2" NPT
EC1269-3	16EH-CIM (514530)	1	3	208-230	6.6	yes	20' No plug	2" NPT
EC1270-3	16EH-CIM(514540)	1	3	460	3.2	yes	20' No plug	2" NPT

Performance Data:

Cat. No.	*Mfr. Model No.	Max. Pad Length ³	Capacities in Gallons Per Minute (GPM) at various feet of Head Pressure						
			5'	10'	15'	20'	25'	30'	40'
EC1319	6EN-CIM (506610)	40'	50	42	30	N/R ²	N/R ²	N/R ²	N/R ²
EC1122	9EC-CIM (509805)	80'	70	65	55	50	40	26	N/R ²
EC1124	9EC-CIM (509807)	70'	70	63	55	45	35	22	N/R ²
EC1269-3	16EH-CIM (514530)	120'	N/R ²	N/R ²	N/R ²	N/R ²	N/R ²	90	70
EC1270-3	16EH-CIM (514540)	120'	N/R ²	N/R ²	N/R ²	N/R ²	N/R ²	90	70

¹ nominal

² N/R - Not Recommended at this head pressure.

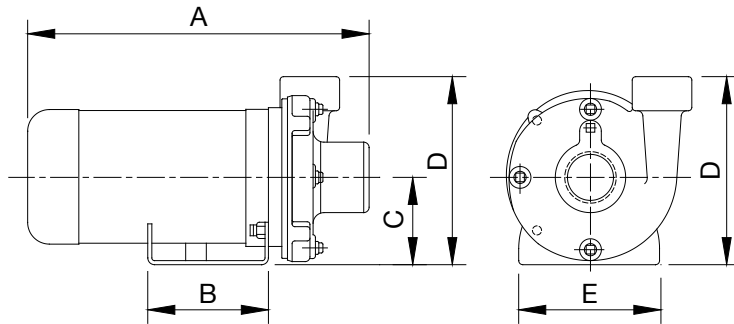
³ Length shown for 6'H system. Contact office for taller systems

* Manufactured by Little Giant

Technical Specifications

Evaporative Cooling Pumps

Non-Submersible Pumps



- Non-Submersible Pumps**
- Frequency: 60 Hertz
 - Insulation Class: B
 - Inlet Size: 1½" NPT
 - Outlet Size: 1¼" NPT
 - Motor Enclosure: Open Drip proof
 - Thermally Protected
- See page 3 for Submersible pumps*

Dimensional Data: Single phase and 3 phase

Cat. No.	A Single Ph.	A 3 Phase	B	C	D	E
EC1155, -3	13 ⁵ / ₈ "	13 ³ / ₈ "	5 ⁵ / ₈ "	4 ¹ / ₈ "	8 ³ / ₄ "	6 ¹ / ₂ "
EC1156, -3	13 ⁵ / ₈ "	13 ⁷ / ₈ "	5 ⁵ / ₈ "	4 ¹ / ₈ "	8 ³ / ₄ "	6 ¹ / ₂ "

Technical Data: Single phase only. Select overloads based on S.F. Amps, 60 Hz shown

Munters Cat. No.	Mfr.	Mfr. Model No.	HP ¹	S.F.	Volts	S.F. Amps	KVA Code	RPM	Inlet	Outlet
EC1155	Sta-Rite	JMDV-57L	³ / ₄	1.27	115/230	12.4/6.2	J	3450	1½"	1¼"
EC1156	Sta-Rite	JMEV-58L	1	1.25	115/230	14.8/7.4	K	3450	1½"	1¼"

3 phase only. Select overloads based on S.F. Amps, 60 Hz shown

Munters Cat. No.	Mfr.	Mfr. Model No.	HP ¹	S.F.	Volts	S.F. Amps	KVA Code	RPM	Inlet	Outlet
EC1155-3	Sta-Rite	JMD3V-57	³ / ₄	1.15	208-230/460	3.1/1.55	H	3450	1½"	1¼"
EC1156-3	Sta-Rite	JME2V-58	1	1.25	208-230/460	3.6/1.8	K	3450	1½"	1¼"

Performance Data: Non-Submersible Pumps (Single phase and 3 phase)

Cat. No.	Mfr. Series	HP ¹	Max. Pad Length	Capacities in Gallons Per Minute (GPM) at various feet of Head Pressure							
				5'	10'	15'	20'	25'	30'	35'	40'
EC1155, -3	JMD	³ / ₄	60'	63	61	59	58	56	52	49	45
EC1156, -3	JME	1	80'	69	68	67	66	65	64	63	62

¹ nominal