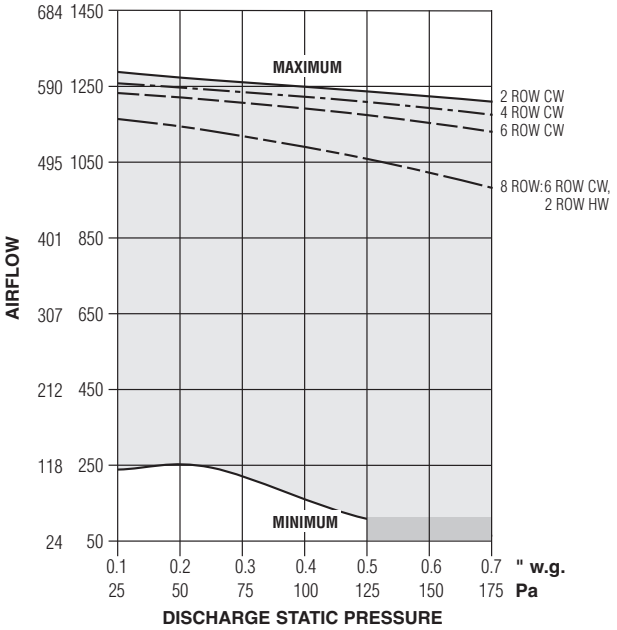
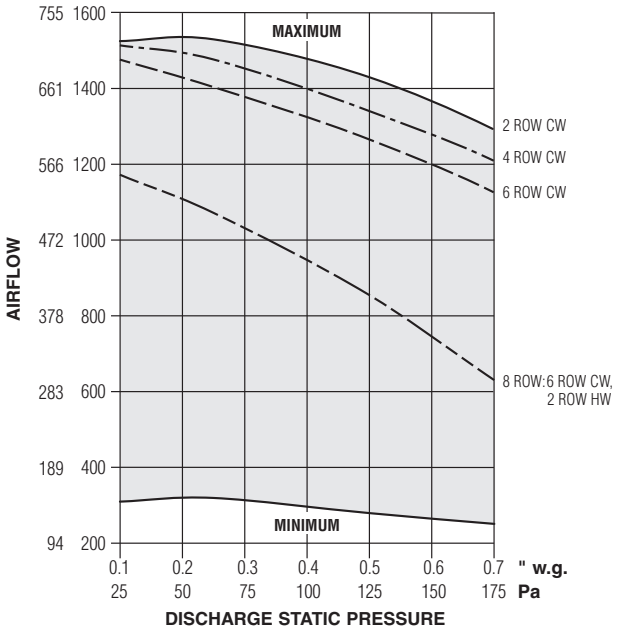
Performance Data

ECM Fan Curves – Airflow vs. Downstream Static Pressure
33SZ Series • FPCWT (DOAS) • EPIC Fan Technology®

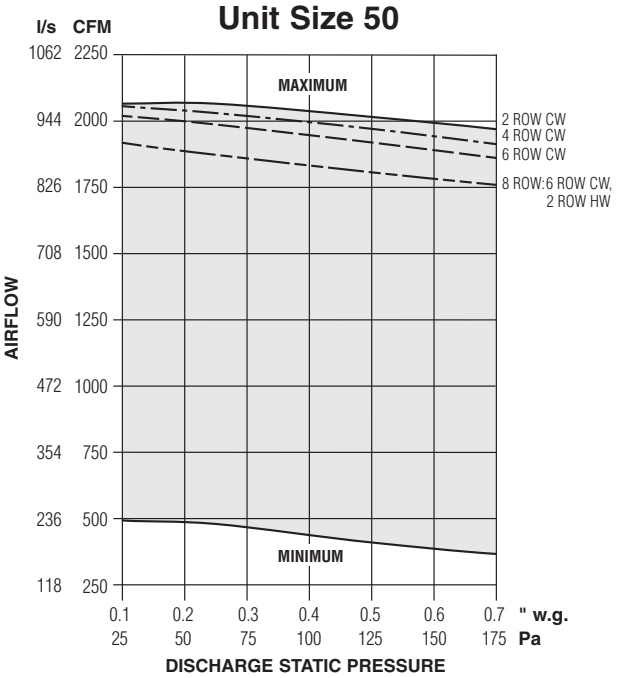
Unit Size 30



Unit Size 40



Unit Size 50



Electrical Data

Unit Size	Motor H. P.	ECM FLA†			
		120/1/60	208/1/60	240/1/60	277/1/60
30	*	7.5	5.0	5.0	4.9
40	*	6.5	4.2	4.2	4.2
50	*	9.5	6.4	6.2	6.0

* The ECM is a variable horsepower motor. Refer to Selectworks Schedule.
FLA = Full load amperage
† EON motor series

NOTES:

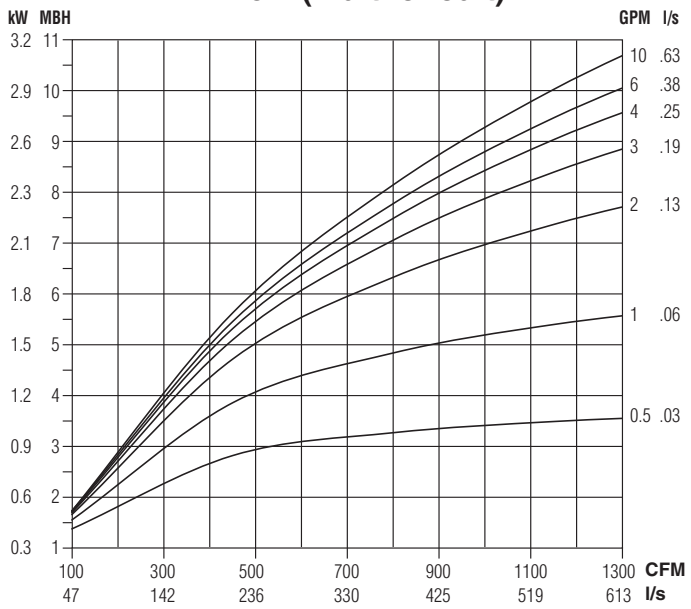
- The fan curves for the ECM are unlike those for traditional PSC motors. The ECM is pressure independent and constant volume in operation at factory or field set point within the shaded area. When the setpoint is on, or below, the respective maximum curve, airflow does not vary with changing static pressure conditions. The motor compensates for any changes in external static pressure or induced air conditions such as filter loading.
- The maximum indicated discharge static pressure is representative of typical design conditions. Refer to Selectworks for enhanced performance capabilities and selection.
- Fan curves shown are applicable to 120, 208, 240 and 277 volt, single phase ECM's. ECM's, although DC in operation, include a built-in inverter.
- Minimum operation within the dark shaded area is not predictable.

Performance Data • Sensible Chilled Water Coil

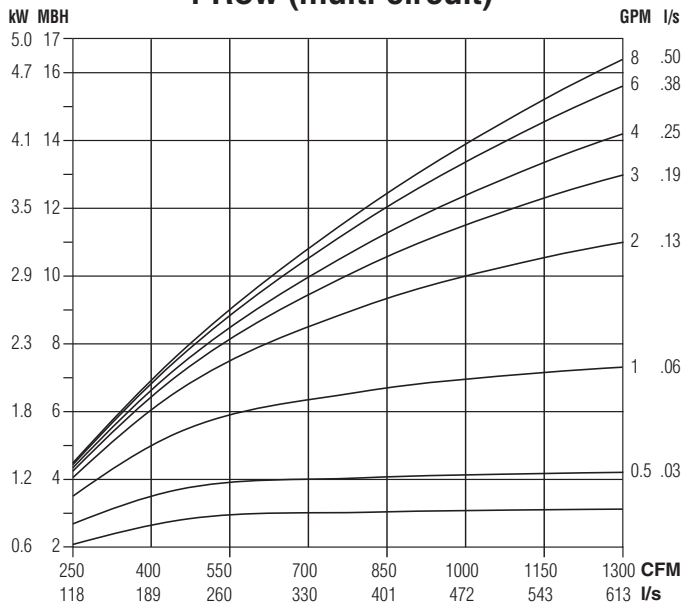
Models: 33SZ, 33SZE, 33SZW • FPCWT (DOAS) • Series Flow

Unit Size 30

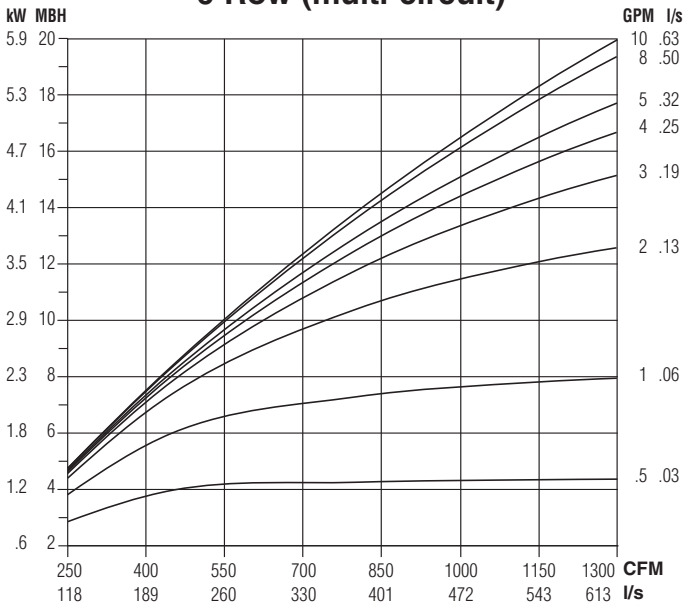
2 Row (multi-circuit)



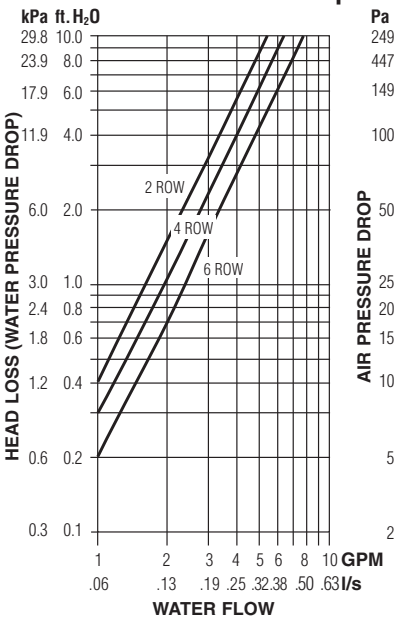
4 Row (multi-circuit)



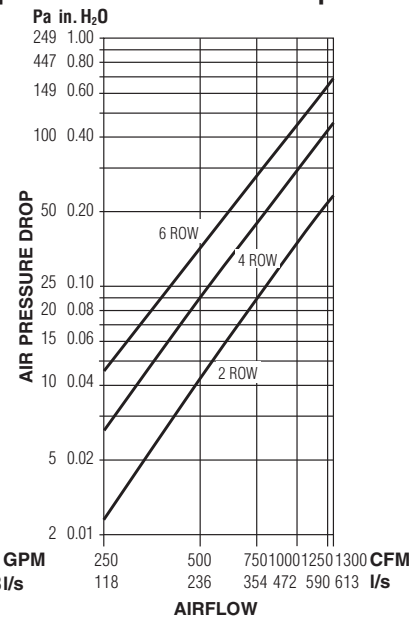
6 Row (multi-circuit)



Water Pressure Drop



Air Pressure Drop



NOTES:

1. Capacities are in MBH (kW), *thousands of Btu per hour (kilo Watts).*
2. MBH (kW) values are based on: 57°F (32°C) Entering Water Temperature (EWT). 75°F (42°C) Entering Air Temperature (EAT). Entering water temperature must be above return air dew point to prevent condensation.
3. Air Temperature Rise.
   $ATR\ (°F) = 927 \times \frac{MBH}{cfm}$, $ATR\ (°C) = 829 \times \frac{kW}{l/s}$
4. Water Temp. Drop.
   $WTD\ (°F) = 2.04 \times \frac{MBH}{GPM}$, $WTD\ (°C) = .224 \times \frac{kW}{l/s}$
5. Connections: 2, 4 & 6 Row: 7/8" (22) O.D. male solder.

Altitude Correction Factors:

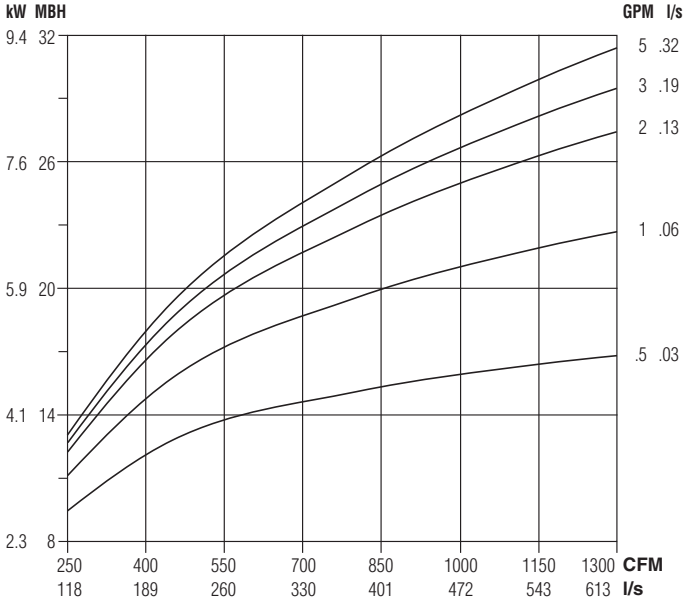
Attitude (ft.)	0	1000	2000	3000	4000	5000	6000	7000
Air Density (lb./cu.ft.)	0.075	0.072	0.070	0.067	0.065	0.063	0.060	0.058
Sensible Capacity	1000	0.960	0.930	0.900	0.860	0.830	0.800	0.700

Performance Data • Hot Water Coil

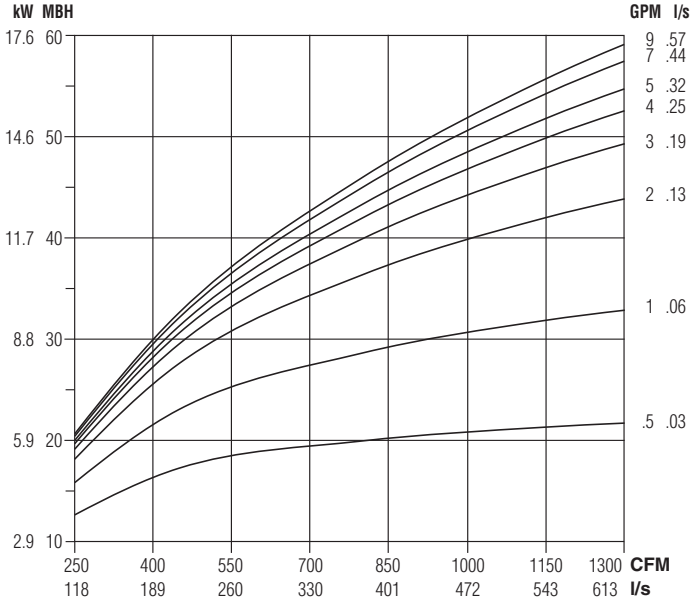
Model: 33SZW • FPCWT (DOAS) • Series Flow

Unit Size 30

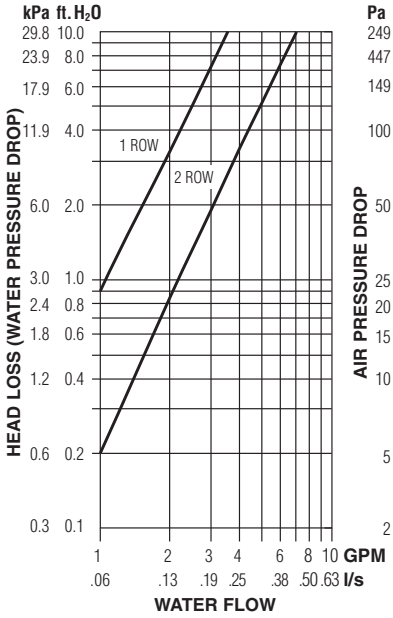
1 Row (single-circuit)



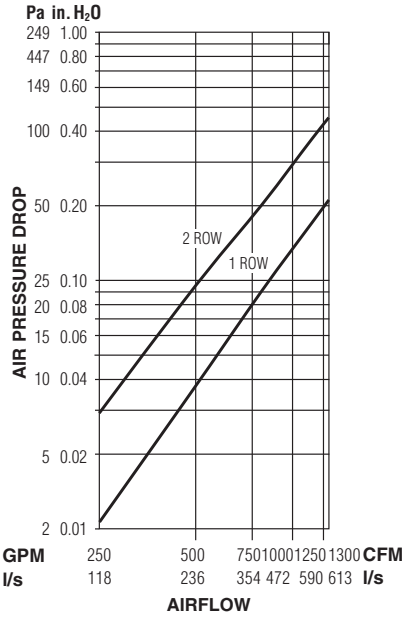
2 Row (multi-circuit)



Water Pressure Drop



Air Pressure Drop



NOTES:

1. Capacities are in MBH (kW), *thousands of Btu per hour (kilo Watts)*.
2. MBH (kW) values are based on a Δt (temperature difference) of 120°F (67°C) between entering air and entering water. For other Δt's; multiply the MBH (kW) values by the factors below.
3. Air Temperature Rise.
   ATR (°F) = 927 x $\frac{MBH}{cfm}$, ATR (°C) = 829 x $\frac{kW}{l/s}$
4. Water Temp. Drop.
   WTD (°F) = 2.04 x $\frac{MBH}{GPM}$, WTD (°C) = .224 x $\frac{kW}{l/s}$
5. Connections: 1 Row 1/2" (13) and 2 Row 5/8" (16); O.D. male solder.

Altitude Correction Factors:

Altitude ft. (m)	Sensible Heat Factor
0 (0)	1.00
2000 (610)	0.94
3000 (914)	0.90
4000 (1219)	0.87
5000 (1524)	0.84
6000 (1829)	0.81
7000 (2134)	0.78

Correction factors at other entering conditions:

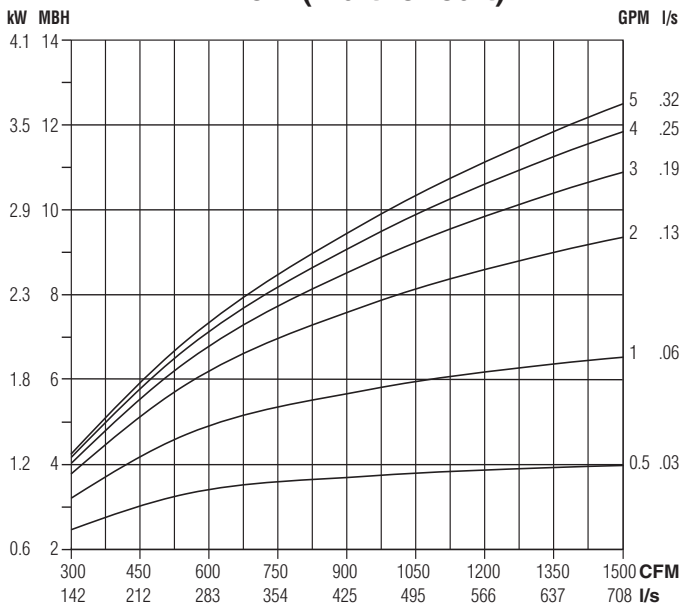
Δt °F (°C)	50 (28)	60 (33)	70 (39)	80 (44)	90 (50)	100 (56)	110 (61)	120 (67)	130 (72)	140 (78)	150 (83)
Factor	.417 (.418)	.500 (.493)	.583 (.582)	.667 (.657)	.750 (.746)	.833 (.836)	.917 (.910)	1.00 (1.00)	1.08 (1.08)	1.17 (1.16)	1.25 (1.24)

Performance Data • Sensible Chilled Water Coil

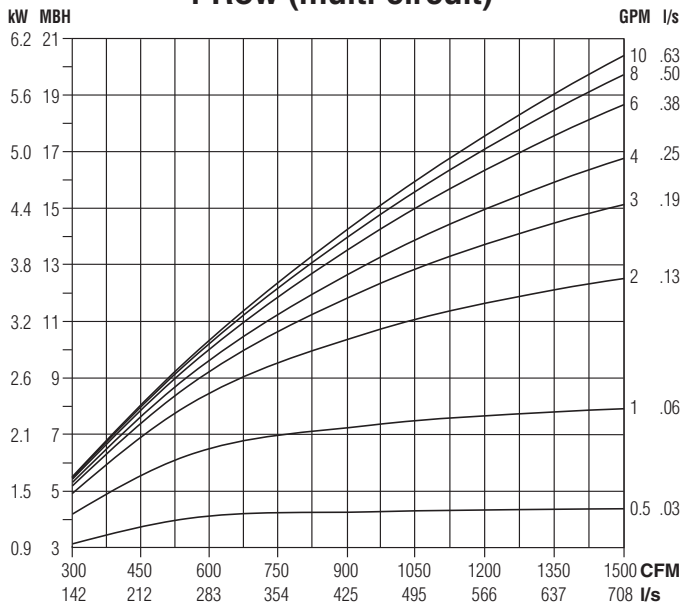
Models: 33SZ, 33SZE, 33SZW • FPCWT (DOAS) • Series Flow

Unit Size 40

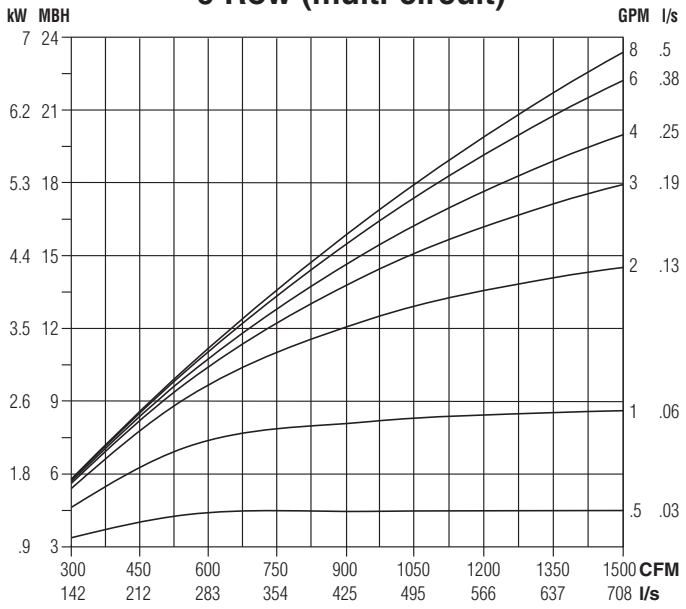
2 Row (multi-circuit)



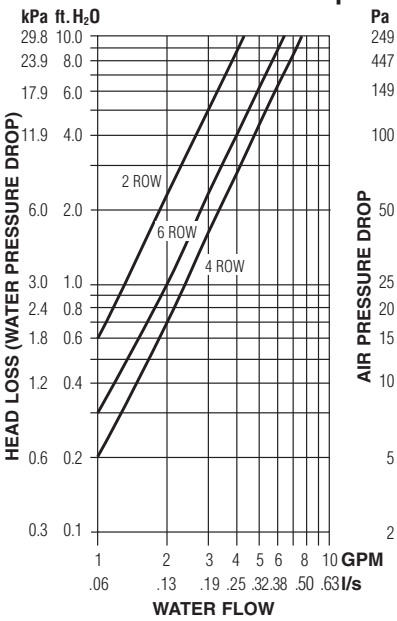
4 Row (multi-circuit)



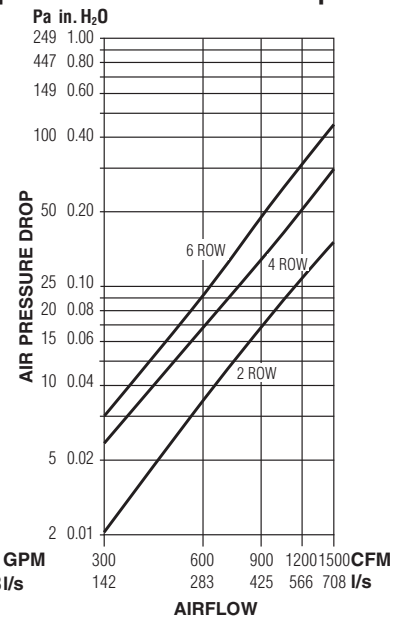
6 Row (multi-circuit)



Water Pressure Drop



Air Pressure Drop



NOTES:

1. Capacities are in MBH (kW), *thousands of Btu per hour (kilo Watts).*
2. MBH (kW) values are based on: 57°F (32°C) Entering Water Temperature (EWT). 75°F (42°C) Entering Air Temperature (EAT). Entering water temperature must be above return air dew point to prevent condensation.
3. Air Temperature Rise.
   $ATR\ (°F) = 927 \times \frac{MBH}{cfm}$, $ATR\ (°C) = 829 \times \frac{kW}{l/s}$
4. Water Temp. Drop.
   $WTD\ (°F) = 2.04 \times \frac{MBH}{GPM}$, $WTD\ (°C) = .224 \times \frac{kW}{l/s}$
5. Connections: 2, 4 & 6 Row: 7/8" (22) O.D. male solder.

Altitude Correction Factors:

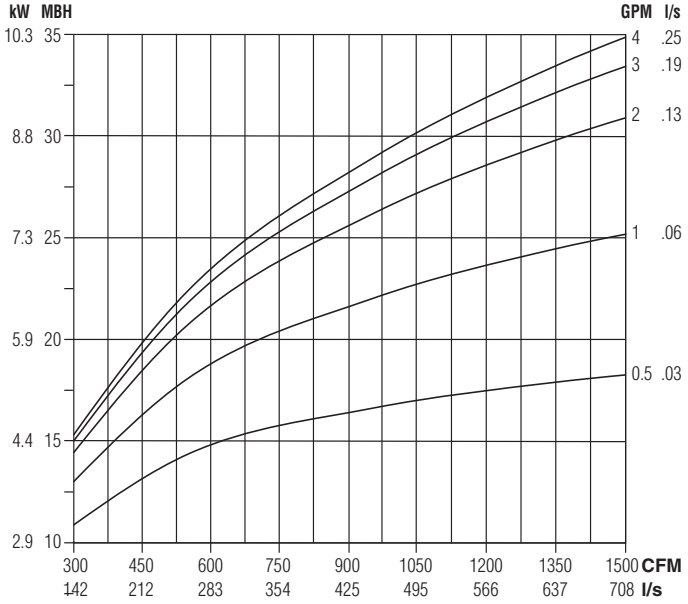
Attitude (ft.)	0	1000	2000	3000	4000	5000	6000	7000
Air Density (lb./cu.ft.)	0.075	0.072	0.070	0.067	0.065	0.063	0.060	0.058
Sensible Capacity	1000	0.960	0.930	0.900	0.860	0.830	0.800	0.700

Performance Data • Hot Water Coil

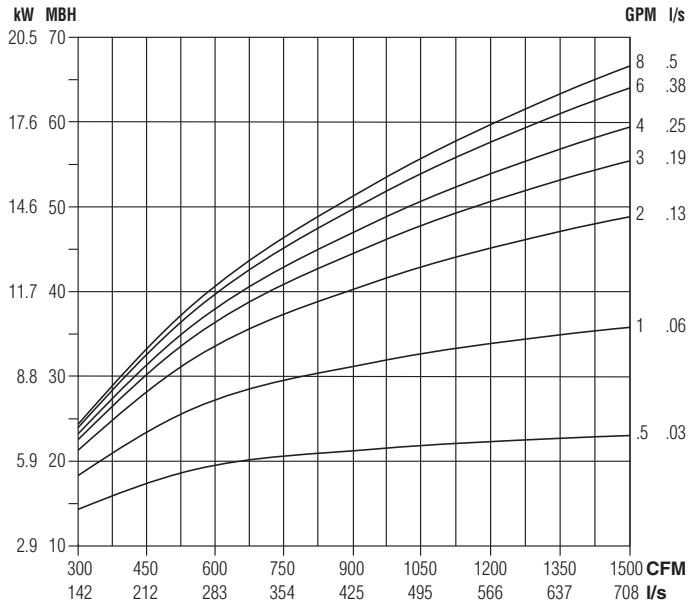
Model: 33SZW • FPCWT (DOAS) • Series Flow

Unit Size 40

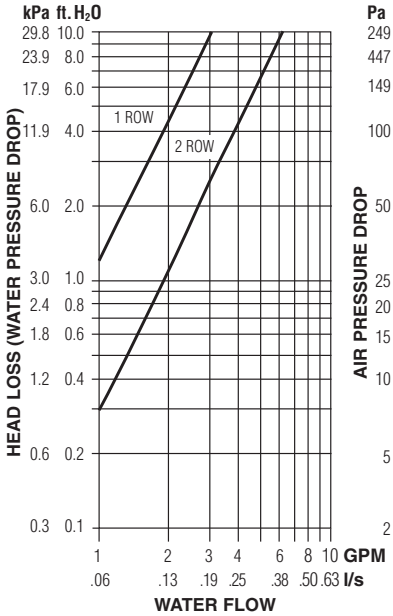
1 Row (single-circuit)



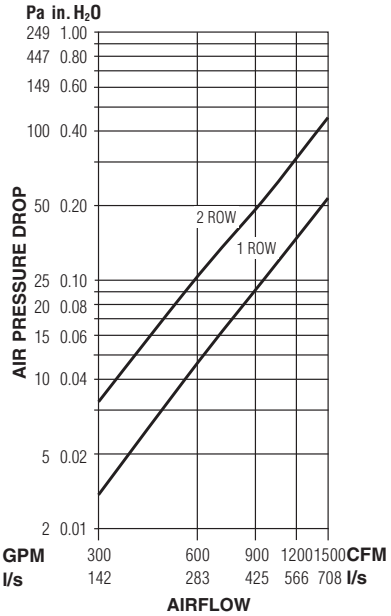
2 Row (multi-circuit)



Water Pressure Drop



Air Pressure Drop



NOTES:

1. Capacities are in MBH (kW), *thousands of Btu per hour (kilo Watts)*.
2. MBH (kW) values are based on a Δt (temperature difference) of 120°F (67°C) between entering air and entering water. For other Δt's; multiply the MBH (kW) values by the factors below.
3. Air Temperature Rise.
   ATR (°F) = 927 x $\frac{MBH}{cfm}$, ATR (°C) = 829 x $\frac{kW}{l/s}$
4. Water Temp. Drop.
   WTD (°F) = 2.04 x $\frac{MBH}{GPM}$, WTD (°C) = .224 x $\frac{kW}{l/s}$
5. Connections: 1 Row 1/2" (13) and 2 Row 7/8" (22); O.D. male solder.

Altitude Correction Factors:

Altitude ft. (m)	Sensible Heat Factor
0 (0)	1.00
2000 (610)	0.94
3000 (914)	0.90
4000 (1219)	0.87
5000 (1524)	0.84
6000 (1829)	0.81
7000 (2134)	0.78

Correction factors at other entering conditions:

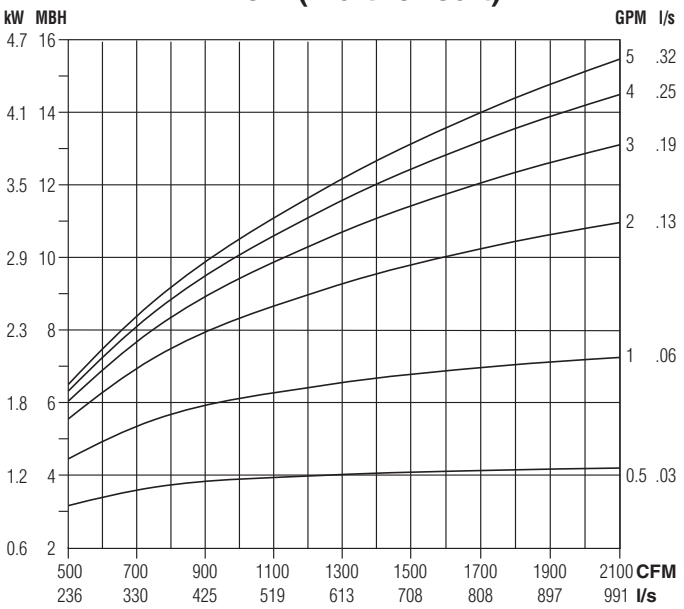
Δt °F (°C)	50 (28)	60 (33)	70 (39)	80 (44)	90 (50)	100 (56)	110 (61)	120 (67)	130 (72)	140 (78)	150 (83)
Factor	.417 (.418)	.500 (.493)	.583 (.582)	.667 (.657)	.750 (.746)	.833 (.836)	.917 (.910)	1.00 (1.00)	1.08 (1.08)	1.17 (1.16)	1.25 (1.24)

Performance Data • Sensible Chilled Water Coil

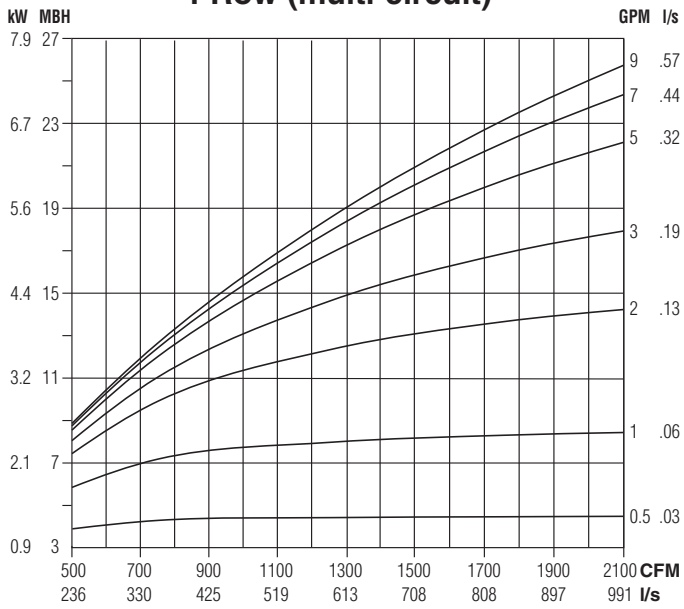
Models: 33SZ, 33SZE, 33SZW • FPCWT (DOAS) • Series Flow

Unit Size 50

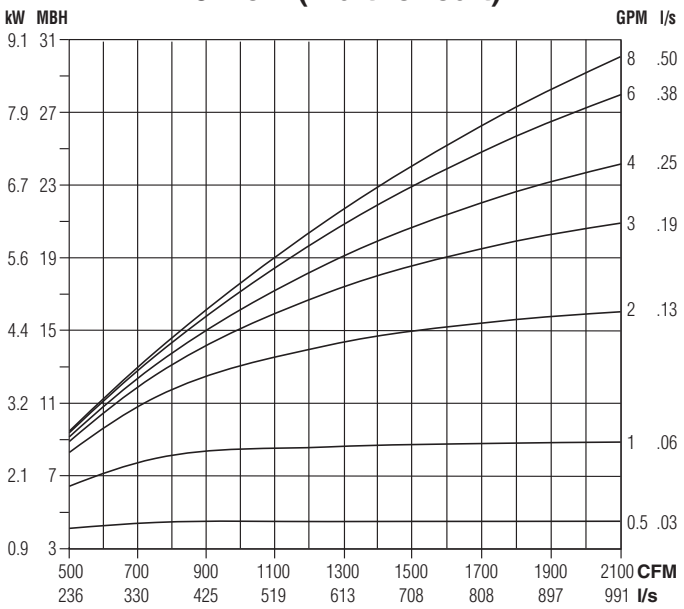
2 Row (multi-circuit)



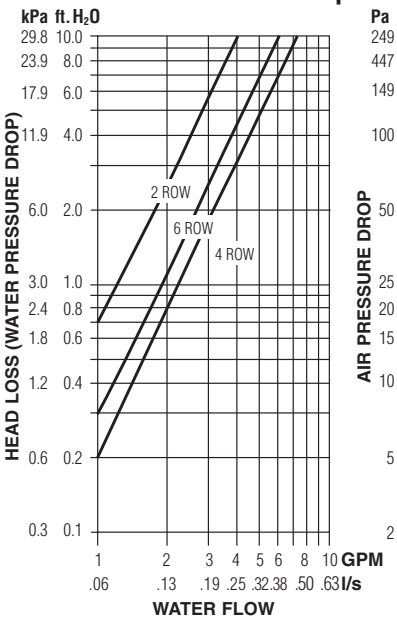
4 Row (multi-circuit)



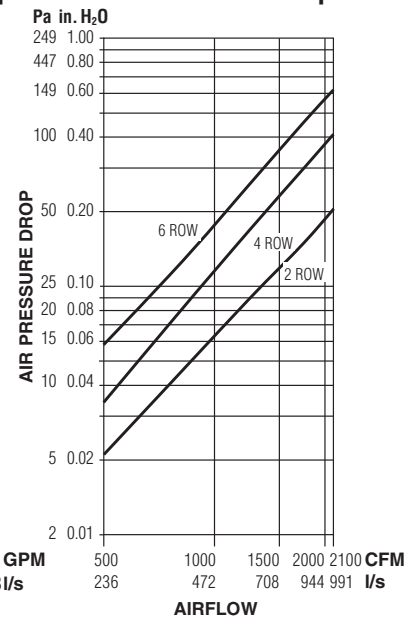
6 Row (multi-circuit)



Water Pressure Drop



Air Pressure Drop



NOTES:

1. Capacities are in MBH (kW), *thousands of Btu per hour (kilo Watts).*
2. MBH (kW) values are based on: 57°F (32°C) Entering Water Temperature (EWT). 75°F (42°C) Entering Air Temperature (EAT). Entering water temperature must be above return air dew point to prevent condensation.
3. Air Temperature Rise.
   ATR (°F) = 927 x $\frac{MBH}{cfm}$, ATR (°C) = 829 x $\frac{kW}{l/s}$
4. Water Temp. Drop.
   WTD (°F) = 2.04 x $\frac{MBH}{GPM}$, WTD (°C) = .224 x $\frac{kW}{l/s}$
5. Connections: 2, 4 & 6 Row: 7/8" (22) O.D. male solder.

Altitude Correction Factors:

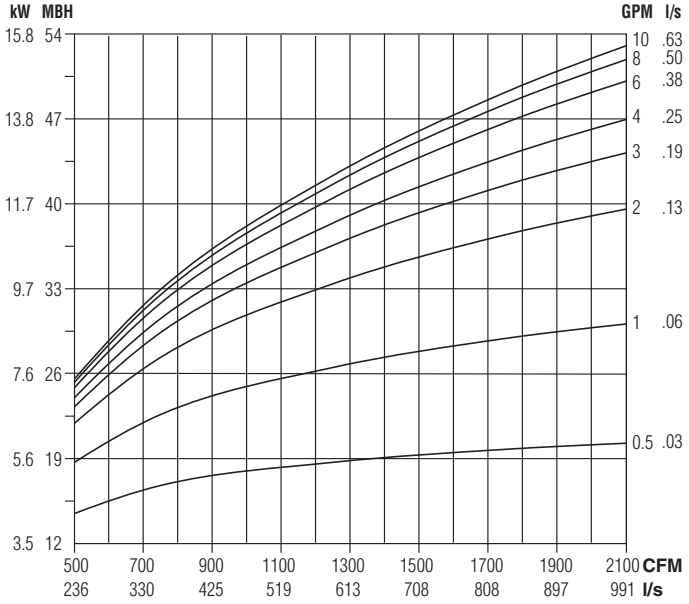
Attitude (ft.)	0	1000	2000	3000	4000	5000	6000	7000
Air Density (lb./cu.ft.)	0.075	0.072	0.070	0.067	0.065	0.063	0.060	0.058
Sensible Capacity	1000	0.960	0.930	0.900	0.860	0.830	0.800	0.700

Performance Data • Hot Water Coil

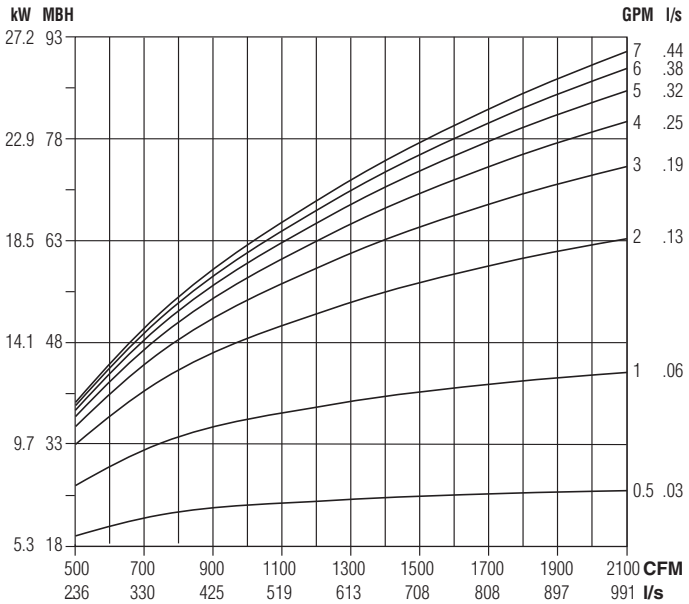
Model: 33SZW • FPCWT (DOAS) • Series Flow

Unit Size 50

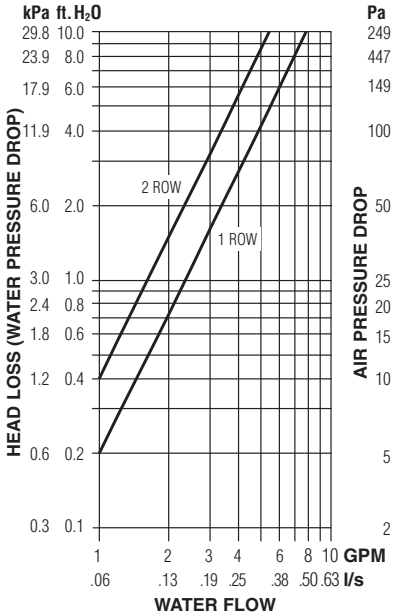
1 Row (multi-circuit)



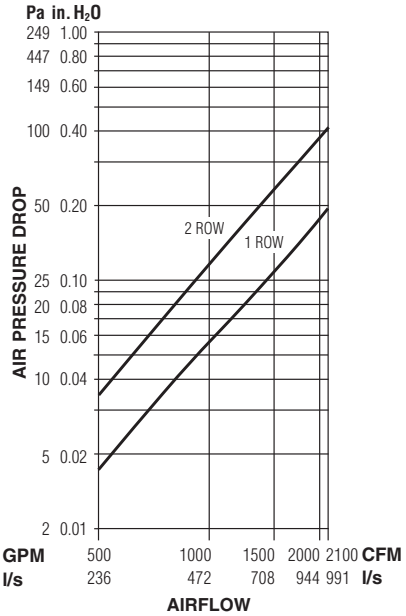
2 Row (multi-circuit)



Water Pressure Drop



Air Pressure Drop



NOTES:

1. Capacities are in MBH (kW), *thousands of Btu per hour (kilo Watts)*.
2. MBH (kW) values are based on a Δt (temperature difference) of 120°F (67°C) between entering air and entering water. For other Δt's; multiply the MBH (kW) values by the factors below.
3. Air Temperature Rise.
   ATR (°F) = 927 x $\frac{MBH}{cfm}$, ATR (°C) = 829 x $\frac{kW}{l/s}$
4. Water Temp. Drop.
   WTD (°F) = 2.04 x $\frac{MBH}{GPM}$, WTD (°C) = .224 x $\frac{kW}{l/s}$
5. Connections: 1 and 2 Row: 7/8" (22); O.D. male solder.

Altitude Correction Factors:

Altitude ft. (m)	Sensible Heat Factor
0 (0)	1.00
2000 (610)	0.94
3000 (914)	0.90
4000 (1219)	0.87
5000 (1524)	0.84
6000 (1829)	0.81
7000 (2134)	0.78

Correction factors at other entering conditions:

Δt °F (°C)	50 (28)	60 (33)	70 (39)	80 (44)	90 (50)	100 (56)	110 (61)	120 (67)	130 (72)	140 (78)	150 (83)
Factor	.417 (.418)	.500 (.493)	.583 (.582)	.667 (.657)	.750 (.746)	.833 (.836)	.917 (.910)	1.00 (1.00)	1.08 (1.08)	1.17 (1.16)	1.25 (1.24)