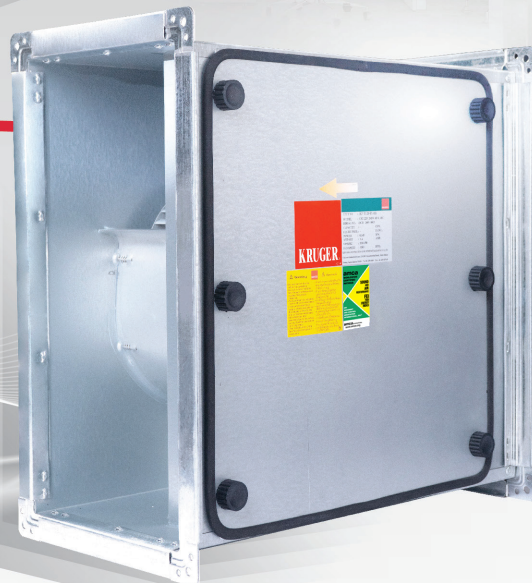
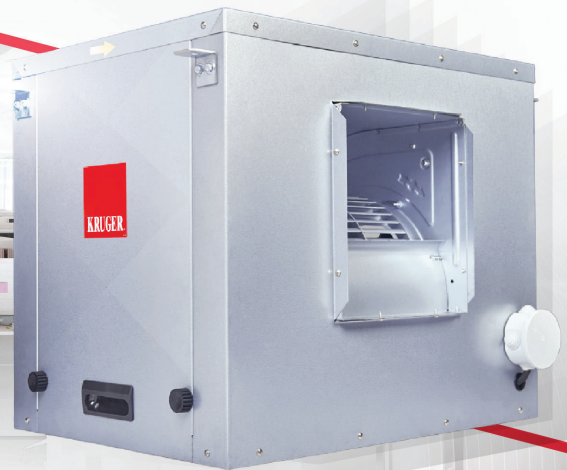
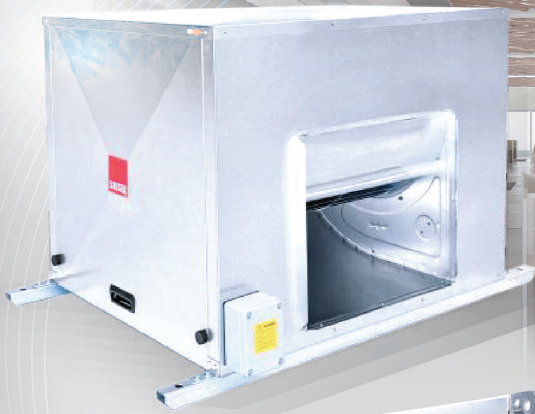


# eCCE & eCSD ECOWATT

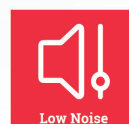
**EC Cabinet Fan** Inline Centrifugal Cabinet Fan



Energy Efficient



Smart Control



Low Noise



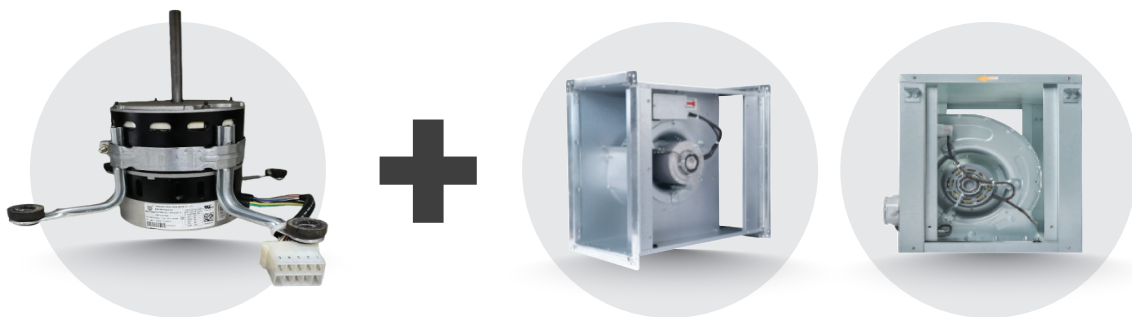
Compact

# Why KRUGER ?

KRUGER has been a leading innovator and manufacturer of residential, commercial and industrial fan application solutions across Asia since 1985. Today with a direct presence in over 18 regions throughout Asia; world class R&D and manufacturing facilities; KRUGER are able to offer their customers unparalleled service and support at a local level. Our customers place their trust in KRUGER.

## What is an EC motor?

**EC (Electronically Commutated)** motors integrate advanced electronics directly into the motor, enabling precise speed control, superior efficiency, and intelligent operation. The eCSD & eCCE Series combine this cutting-edge EC motor technology with KRUGER's proven single- and double-inlet centrifugal inline fan design.



## Why use KRUGER eCCE and eCSD?



### High-Efficiency EC motor ▶ Low Input Power ▶ Energy Saving

- High-efficiency EC motor delivers superior performance at both full- and part-load conditions, achieving motor efficiency of up to **85%**.
- Lower input power with up to **20% more energy** savings compared to conventional AC fans.



### Smart Control ▶ Demand Control Ventilation ▶ Optimized Performance

- Speed and airflow can be precisely controlled via analog 0-10 V signal or digital interface (Modbus RTU communication via RS-485).
- Compatible with modern BMS (Building Management System) platforms for seamless integration and monitoring.



### Quiet EC motor ▶ Low RPM Forward Curved Fan ▶ Low Noise Operation Performance

- Good efficiency EC motor and smooth speed ramping eliminates startup spikes



### Compact, Reliable Design

- The eCCE & eCSD Series retain the high air volume, compact footprint and ease of installation of our popular AC models

## General Fan Specifications

- **Airflow Range** : eCSD up to 3400 CMH  
eCCE up to 5100 CMH
- **Static Pressure Range** : eCSD up to 800 Pa  
eCCE up to 700 Pa
- **Operating Temperature** : Clean air standard ventilation application -20°C to +40°C.
- **Cabinet Material** : With high gloss surface finished manufactured from ZERO spangle galvanized steel.
- **Wheel Material** : Wheel manufactured in high gloss surface finished manufactured from ZERO spangle galvanized steel. All wheels are statically and dynamically balanced to G2.5 in accordance with ISO 21940.

### Certifications



Kruger Ventilation Industries Asia Co., Ltd. certifies that the eCCE and eCSD series shown herein are licensed to bear the AMCA Seal.

The ratings shown are based on tests and procedures performed in accordance with AMCA publication 211 and AMCA publication 311 and comply with requirements of the AMCA Certified Ratings Program.

## EC Motor Technical Specifications

General		Specific			
Motor Technology	EC	Motor Model	MU220SC10VBSBL0 A1000	MU230SC10VBSBL0 A1000	MU260SC10VBSBL0 A1000
Electrical Characteristic	1 Phase / 220-240V	eCCE Model	eCCE 9-7	eCCE 9-9 eCCE 10-8	eCCE 10-10 eCCE 12-9 eCCE 12-12
Frequency	50 / 60 Hz				
Ingress Protection	IP 20	eCSD Model	eCSD 250	eCSD 280	eCSD 315
Insulation Class	Class B				
Speed Control	0-10 V (VSP)	Nominal Efficiency at Max Speed (%)	83	85	85
	Modbus RTU (RS485)				
	5-Speed Tab (Optional)	Motor Range (RPM)	300-1400		
Operating Amb Temp (°C)	-25 to 40	Weight (kg)	5	5.5	6
Rotor	External				

## eCCE Technical Data

Model	Max Q (CMS)	Max Ps (Pa)	Maximum Motor Input power (W)	Maximum Input Current (A)	Lp (A) at 3m free discharge (db (A))*	Nominal Speed (RPM)
eCCE 9-7	0.755	457	540	3.8	55	1170
eCCE 9-9	0.977	473	738	5.4	60	1290
eCCE 10-8	1.021	616	775	5.4	57	1105
eCCE 10-10	1.316	721	1094	7.0	59	1160
eCCE 12-9	1.283	790	1053	7.0	56	1040
eCCE 12-12	1.41	844	1054	7.0	55	1035

## eCSD Technical Data

Model	Max Q (CMS)	Max Ps (Pa)	Maximum Motor Input power (W)	Maximum Input Current (A)	Lp (A) at 3m free discharge (db (A))*	Nominal Speed (RPM)
eCSD 250	0.486	478	538	3.8	60	1320
eCSD 280	0.719	557	774	5.4	61	1240
eCSD 315	0.934	733	1053	7.0	61	1140

- Performance certified is for installation type D - Ducted inlet, Duct outlet.
- Performance ratings do not include the effects of appurtenances (accessories).
- Speed (RPM) shown is nominal. Performance is based on actual speed of test.
- Lp(A) at 3m free discharge dB(A) levels are not licensed by AMCA International.

# Electrical & Controls Wiring Diagram

## Power and Control Wiring

This section illustrates the terminal layouts and wiring procedures for the eCCE and eCSD Ecowatt plug fans.

The eCCE and eCSD fans support multiple speed control functions:

- 1. Manual Speed Control via Potentiometer:** Analog signal 0–10 VDC.
- 2. Automatic Speed Control via DCV or BMS:** Using analog signals (0–10 VDC) or Modbus RTU communication.

For detailed training on the eCCE and eCSD Modbus RTU interface PC program and configuration methods, please contact Kruger.



AIRSENs



REB-Ecowatt



TPI-PI



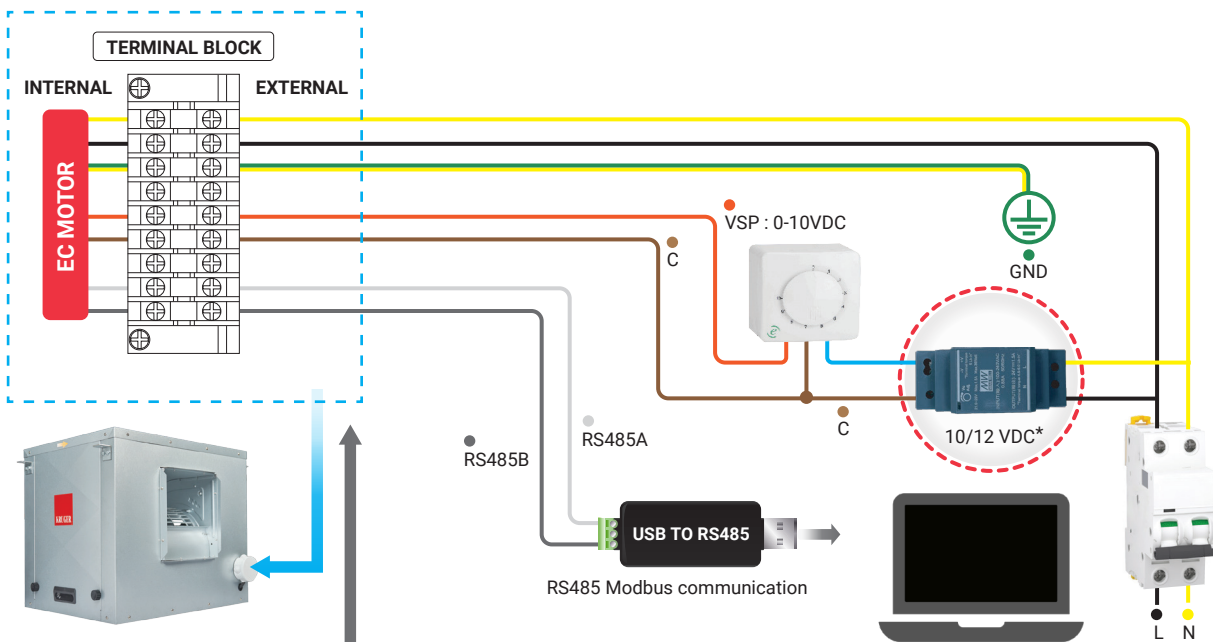
## Power Wiring

- Select the cable size according to the motor's input current (A) for each model.
- Shielded cables are not required for power connections.
- When multiple fans are installed in a single AHU, each fan must have an individual circuit breaker.

## Control Wiring

- Ensure all control cables (RS485A, RS485B, VSP, and C) for each fan are accessible at an external location, away from single-phase power supply connections.
- When using Modbus over RS485, appropriate shielded cables must be used.

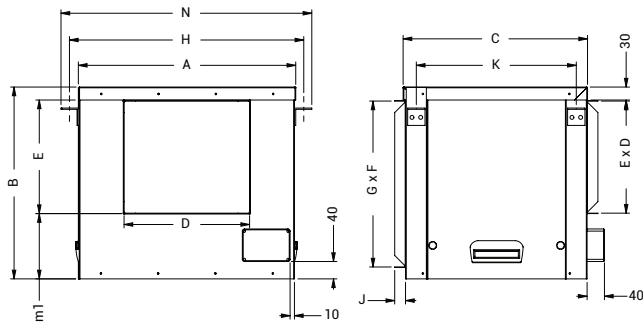
# Wiring Diagram



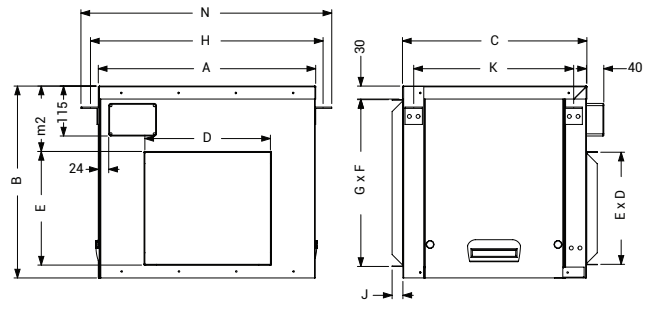
No.	Mark	Function	Color
1	[N]	[208-230VAC 50Hz/60Hz]	Yellow
2	[L]	[208-230VAC 50Hz/60Hz]	Black
3	[GND]	GND	Yellow/Green
4	[/]	[/]	[/]
5	[VSP]	[Variable Supply Power, 0-10VDC]	Orange
6	[C]	[Low Voltage Common]	Brown
7	[/]	[/]	[/]
8	[485A]	[Communication VIA Modbus Protocol]	White
9	[485B]	[Communication VIA Modbus Protocol]	Gray

## eCCE Dimension

90° Orientation



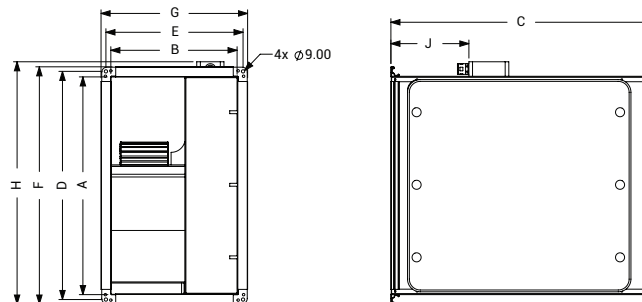
270° Orientation



Model	A	B	C	D	E	F	G	H	J	K	L	m1	m2	N	Wt (kg)
eCCE 9-7	573	451	442	236	266	348	382	619	25	378	9	143	159	670	19.0
eCCE 9-9	573	451	442	302	266	348	382	619	25	378	9	143	159	670	20.0
eCCE 10-8	652	561	502	269	293	410	462	699	25	431	9	171	217	749	26.0
eCCE 10-10	652	561	502	335	293	410	462	699	25	431	9	171	217	749	28.0
eCCE 12-9	743	631	572	313	345	510	547	790	25	526	9	185	254	840	34.0
eCCE 12-12	743	631	572	399	345	510	547	790	25	526	9	185	254	840	36.0

All dimension in mm.

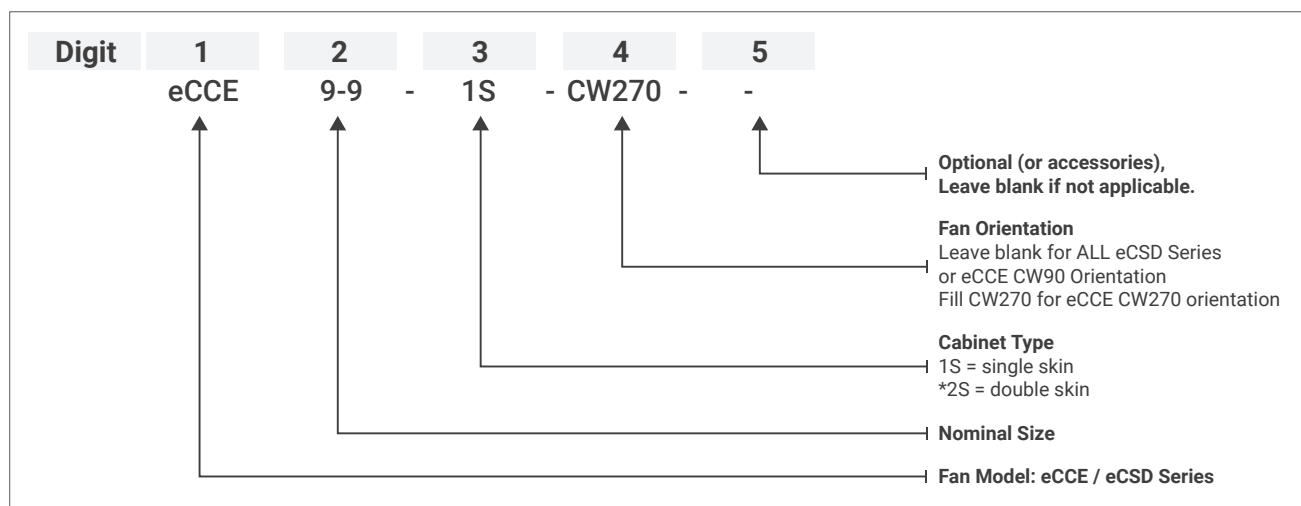
## eCSD Dimension



Model	A	B	C	D	E	F	G	H	J	Wt (kg)
eCSD 250	500	300	562	531	332	559	360	573	250	20.1
eCSD 280	600	300	682	631	322	659	360	673	215	25.9
eCSD 315	600	350	717	631	382	659	410	673	215	39.0

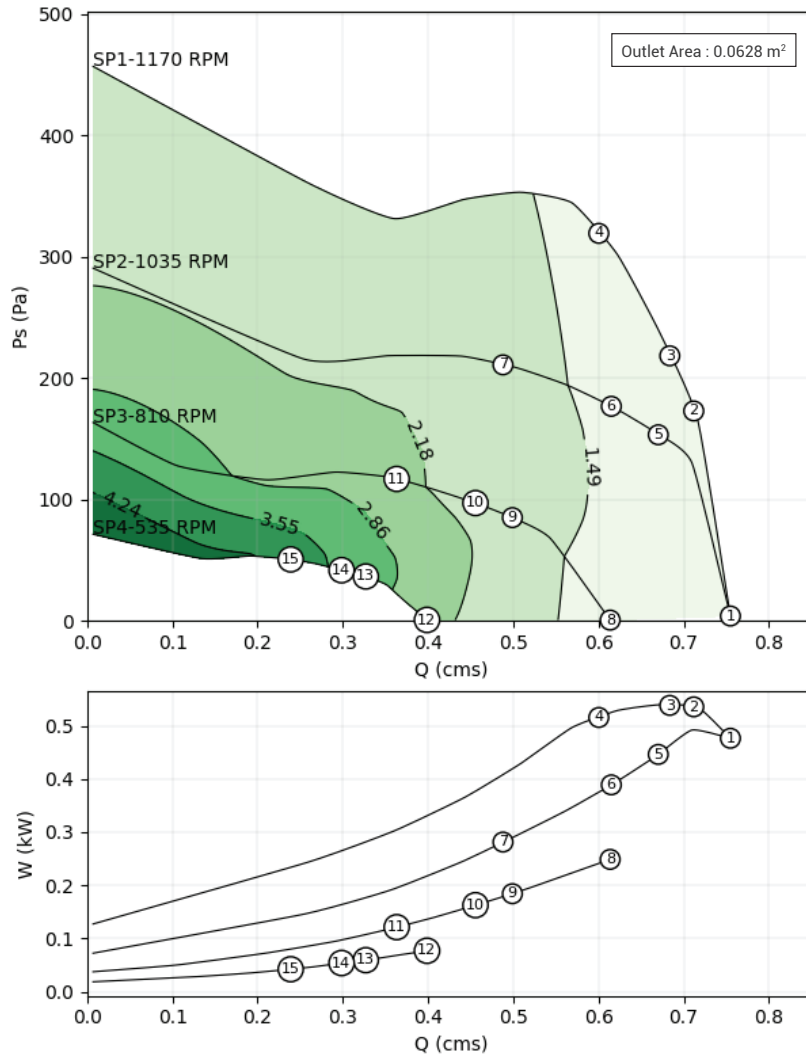
All dimension in mm.

## Fan Nomenclature



# eCCE Performance Data

## eCCE 9-7

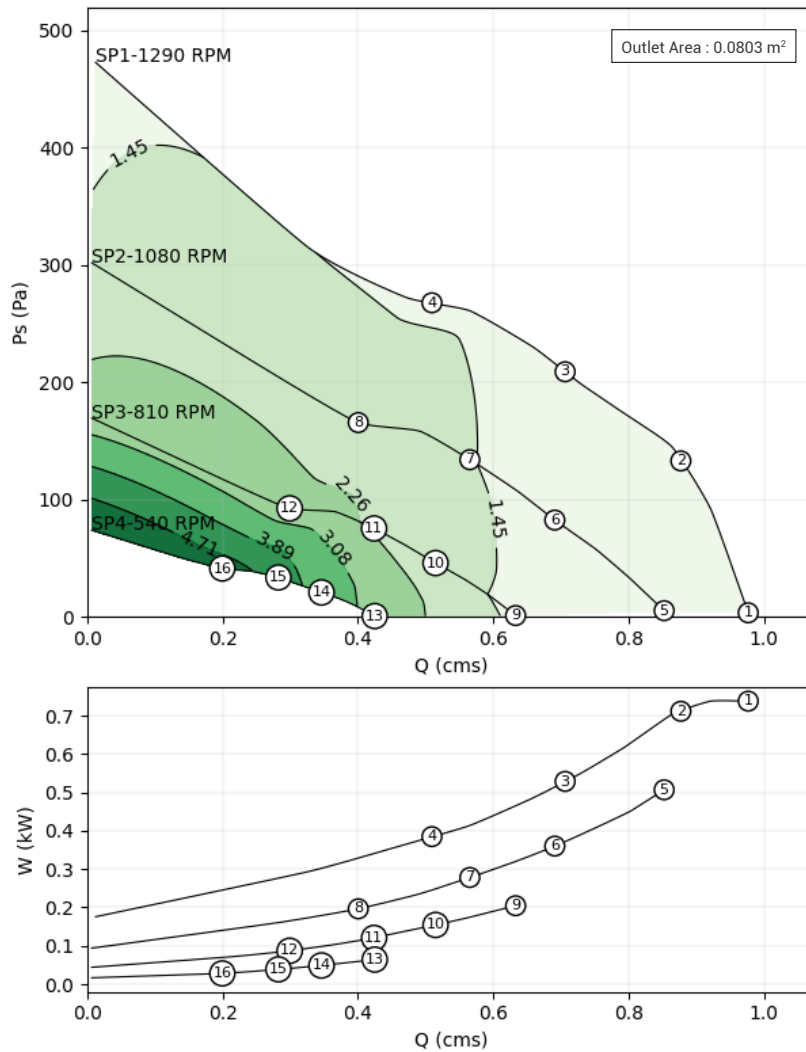


Point	Freq (Hz)	Voltage (V)	Speed (RPM)	Ps (Pa)	Q (cms)	W (kW)	Ht (%)	I (A)	LwA (dB)
1	50/60	240	990	4	0.750	0.48	14.26	2.89	77
2	50/60	240	1138	173	0.710	0.54	33.14	2.86	77
3	50/60	240	1193	218	0.680	0.54	36.69	2.87	76
4	50/60	240	1316	319	0.600	0.52	43.51	2.76	75
5	50/60	240	1081	153	0.670	0.45	33.21	2.70	75
6	50/60	240	1081	177	0.620	0.39	36.99	2.40	74
7	50/60	240	1081	211	0.490	0.28	42.84	1.80	71
8	50/60	240	809	1	0.610	0.25	14.17	1.50	72
9	50/60	240	808	85	0.500	0.18	33.22	1.12	68
10	50/60	240	809	97	0.460	0.16	35.98	1.00	67
11	50/60	240	808	117	0.360	0.12	41.02	0.76	64
12	50/60	240	536	1	0.400	0.08	12.84	0.55	62
13	50/60	240	536	36	0.330	0.06	29.14	0.44	58
14	50/60	240	536	42	0.300	0.05	30.66	0.40	57
15	50/60	240	536	51	0.240	0.04	33.67	0.32	57

- Speed (RPM) shown above fan curves are nominal speeds.
- Performance is based on actual speed of test.
- Ps is static pressure, Q is airflow, W is motor power input measured, Ht is fan total efficiency, I is input current, Lw(A) is A-weight sound power.
- Performance certified is for installation type D-Ducted Inlet, Ducted Outlet.
- Performance ratings do not include the effects of appurtenances (accessories).
- FEI<sub>r</sub> values are calculated in accordance with ANSI/AMCA Standard 208 and are based on wire-to-air measurement, AMCA 211 ratings.
- FEI<sub>r</sub> values for fans with specific motors will vary slightly from those shown.
- The A-weighted sound power ratings shown have been calculated per AMCA International Standard 301.
- Values shown are for inlet LwA sound power levels for installation type D-Ducted Inlet, Ducted Outlet.
- EC Motor Model Number MU220SC10VBSBL0A1000
- Ratings include the effects of duct end correction

# eCCE Performance Data

## eCCE 9-9

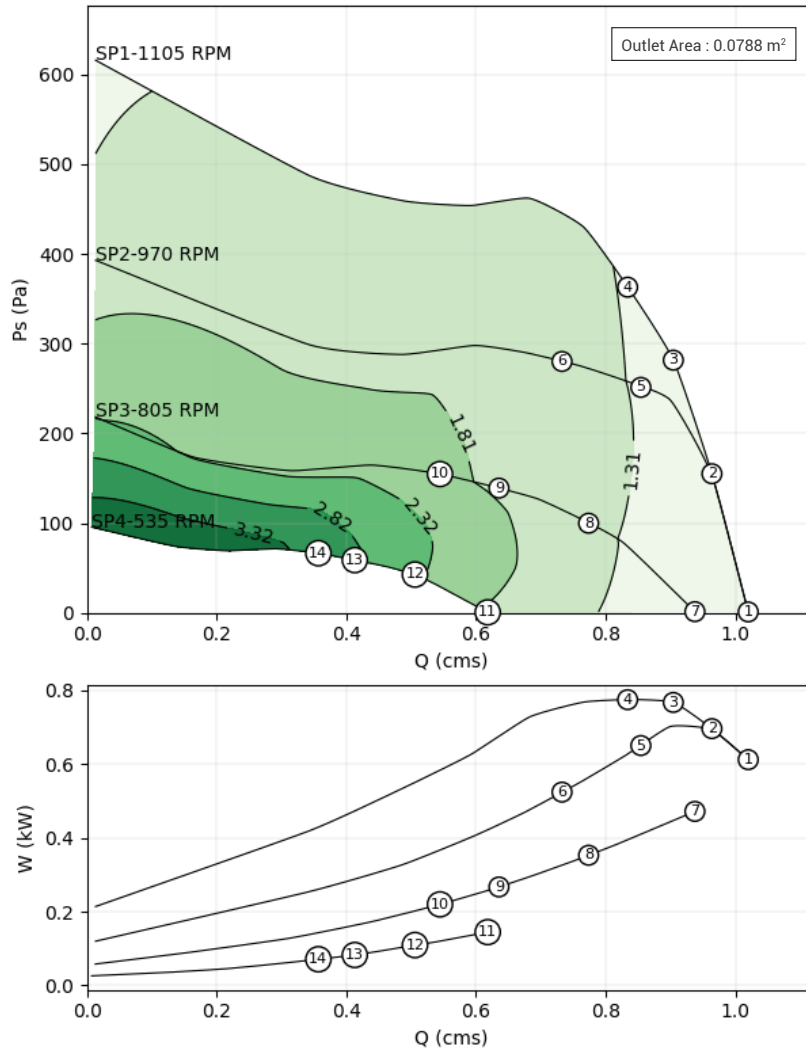


Point	Freq (Hz)	Voltage (V)	Speed (RPM)	Ps (Pa)	Q (cms)	W (kW)	Ht (%)	I (A)	LwA (dB)
1	50/60	240	1230	3	0.980	0.74	12.26	4.40	82
2	50/60	240	1342	133	0.880	0.71	25.25	4.25	81
3	50/60	240	1352	209	0.710	0.53	34.15	3.27	78
4	50/60	240	1352	268	0.510	0.38	38.69	2.44	77
5	50/60	240	1080	5	0.850	0.51	12.30	3.04	79
6	50/60	240	1080	82	0.690	0.36	24.40	2.21	75
7	50/60	240	1080	134	0.570	0.28	33.31	1.74	72
8	50/60	240	1079	166	0.400	0.20	36.84	1.27	70
9	50/60	240	811	1	0.630	0.20	11.92	1.44	72
10	50/60	240	811	46	0.510	0.15	23.54	1.15	69
11	50/60	240	811	75	0.420	0.12	32.37	0.93	67
12	50/60	240	812	92	0.300	0.09	34.72	0.70	64
13	50/60	240	539	1	0.420	0.06	11.57	0.54	62
14	50/60	240	539	21	0.350	0.05	22.74	0.44	59
15	50/60	240	539	33	0.280	0.04	30.01	0.36	56
16	50/60	240	539	41	0.200	0.03	32.05	0.29	54

- Speed (RPM) shown above fan curves are nominal speeds.
- Performance is based on actual speed of test.
- Ps is static pressure, Q is airflow, W is motor power input measured, Ht is fan total efficiency, I is input current, Lw(A) is A-weight sound power.
- Performance certified is for installation type D-Ducted Inlet, Ducted Outlet.
- Performance ratings do not include the effects of appurtenances (accessories).
- FEI<sub>r</sub> values are calculated in accordance with ANSI/AMCA Standard 208 and are based on wire-to-air measurement, AMCA 211 ratings.
- FEI<sub>r</sub> values for fans with specific motors will vary slightly from those shown.
- The A-weighted sound power ratings shown have been calculated per AMCA International Standard 301.
- Values shown are for inlet Lw(A) sound power levels for installation type D-Ducted Inlet, Ducted Outlet.
- EC Motor Model Number MU230SC10VBSBL0A1000
- Ratings include the effects of duct end correction

# eCCE Performance Data

## eCCE 10-8

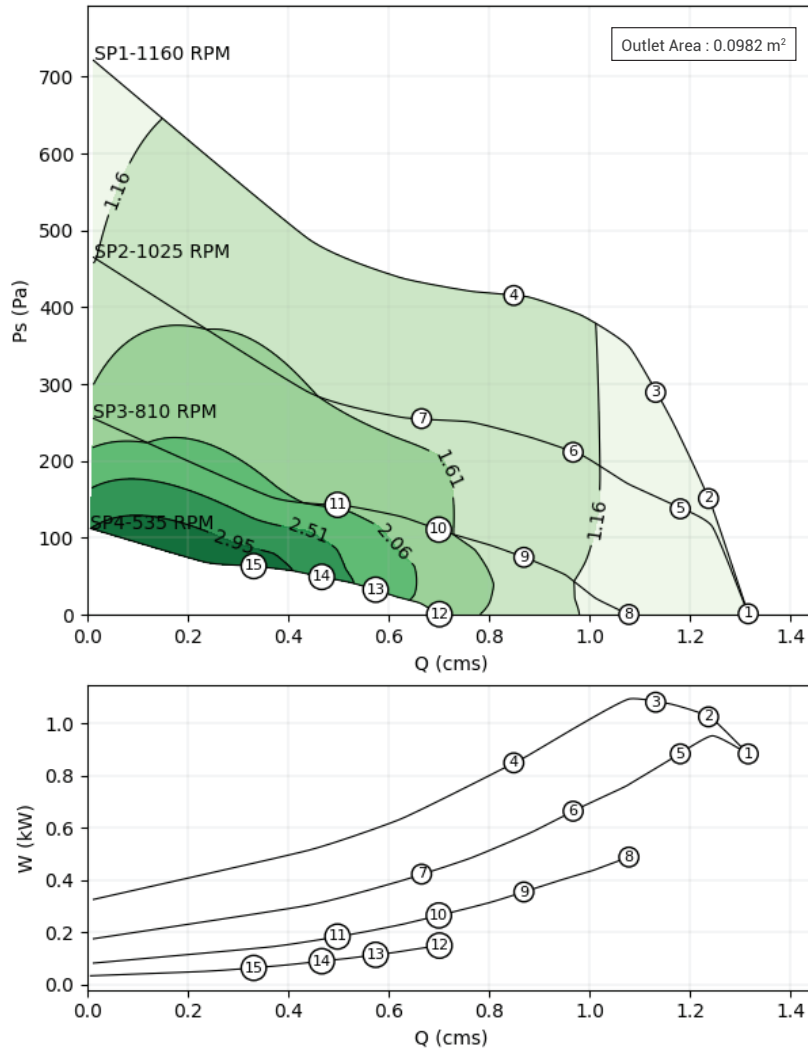


Point	Freq (Hz)	Voltage (V)	Speed (RPM)	Ps (Pa)	Q (cms)	W (kW)	Ht (%)	I (A)	LwA (dB)
1	50/60	240	862	1	1.020	0.61	16.33	3.22	77
2	50/60	240	995	155	0.960	0.70	33.38	3.62	76
3	50/60	240	1129	282	0.900	0.77	42.16	3.95	76
4	50/60	240	1216	363	0.830	0.78	46.00	3.99	77
5	50/60	240	1077	251	0.850	0.65	41.89	3.38	77
6	50/60	240	1077	280	0.730	0.52	46.14	2.77	75
7	50/60	240	807	1	0.940	0.47	16.46	2.52	77
8	50/60	240	805	100	0.770	0.35	34.06	1.94	73
9	50/60	240	806	139	0.640	0.27	41.97	1.50	70
10	50/60	240	806	155	0.540	0.22	45.11	1.25	68
11	50/60	240	537	1	0.620	0.15	15.35	0.85	67
12	50/60	240	537	43	0.510	0.11	30.63	0.65	63
13	50/60	240	538	59	0.410	0.08	37.22	0.51	61
14	50/60	240	537	66	0.360	0.07	39.25	0.44	60

- Speed (RPM) shown above fan curves are nominal speeds.
- Performance is based on actual speed of test.
- Ps is static pressure, Q is airflow, W is motor power input measured, Ht is fan total efficiency, I is input current, Lw(A) is A-weight sound power.
- Performance certified is for installation type D-Ducted Inlet, Ducted Outlet.
- Performance ratings do not include the effects of appurtenances (accessories).
- FEI<sub>1</sub> values are calculated in accordance with ANSI/AMCA Standard 208 and are based on wire-to-air measurement, AMCA 211 ratings.
- FEI<sub>2</sub> values for fans with specific motors will vary slightly from those shown.
- The A-weighted sound power ratings shown have been calculated per AMCA International Standard 301.
- Values shown are for inlet Lw(A) sound power levels for installation type D-Ducted Inlet, Ducted Outlet.
- EC Motor Model Number MU230SC10VBSBL0A1000
- Ratings include the effects of duct end correction

# eCCE Performance Data

## eCCE 10-10

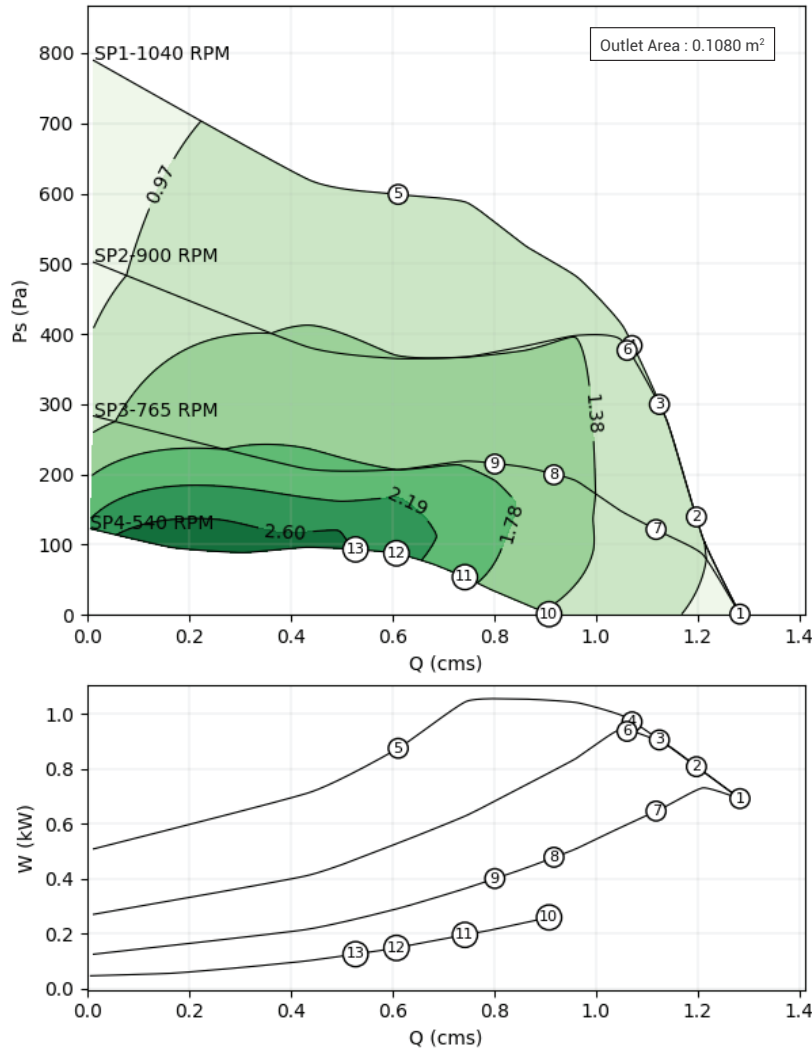


Point	Freq (Hz)	Voltage (V)	Speed (RPM)	Ps (Pa)	Q (cms)	W (kW)	Ht (%)	I (A)	LwA (dB)
1	50/60	240	968	1	1.320	0.88	16.15	4.47	81
2	50/60	240	1137	151	1.240	1.03	29.66	5.13	81
3	50/60	240	1272	289	1.130	1.08	38.59	5.39	80
4	50/60	240	1354	415	0.850	0.85	46.04	4.30	79
5	50/60	240	1081	138	1.180	0.88	29.95	4.46	79
6	50/60	240	1081	211	0.970	0.66	39.25	3.43	77
7	50/60	240	1081	255	0.670	0.42	44.50	2.27	72
8	50/60	240	809	0	1.080	0.49	15.96	2.59	77
9	50/60	240	810	75	0.870	0.36	29.76	1.93	73
10	50/60	240	809	111	0.700	0.27	37.28	1.48	70
11	50/60	240	809	143	0.500	0.18	42.87	1.05	66
12	50/60	240	538	1	0.700	0.15	14.59	0.87	66
13	50/60	240	537	33	0.570	0.11	26.59	0.67	62
14	50/60	240	537	49	0.470	0.09	32.54	0.54	60
15	50/60	240	537	63	0.330	0.06	36.17	0.39	58

- Speed (RPM) shown above fan curves are nominal speeds.
- Performance is based on actual speed of test.
- Ps is static pressure, Q is airflow, W is motor power input measured, Ht is fan total efficiency, I is input current, Lw(A) is A-weight sound power.
- Performance certified is for installation type D-Ducted Inlet, Ducted Outlet.
- Performance ratings do not include the effects of appurtenances (accessories).
- FEI<sub>1</sub> values are calculated in accordance with ANSI/AMCA Standard 208 and are based on wire-to-air measurement, AMCA 211 ratings.
- FEI<sub>2</sub> values for fans with specific motors will vary slightly from those shown.
- The A-weighted sound power ratings shown have been calculated per AMCA International Standard 301.
- Values shown are for inlet Lw(A) sound power levels for installation type D-Ducted Inlet, Ducted Outlet.
- EC Motor Model Number MU260SC10VBSBL0A1000
- Ratings include the effects of duct end correction

# eCCE Performance Data

## eCCE 12-9

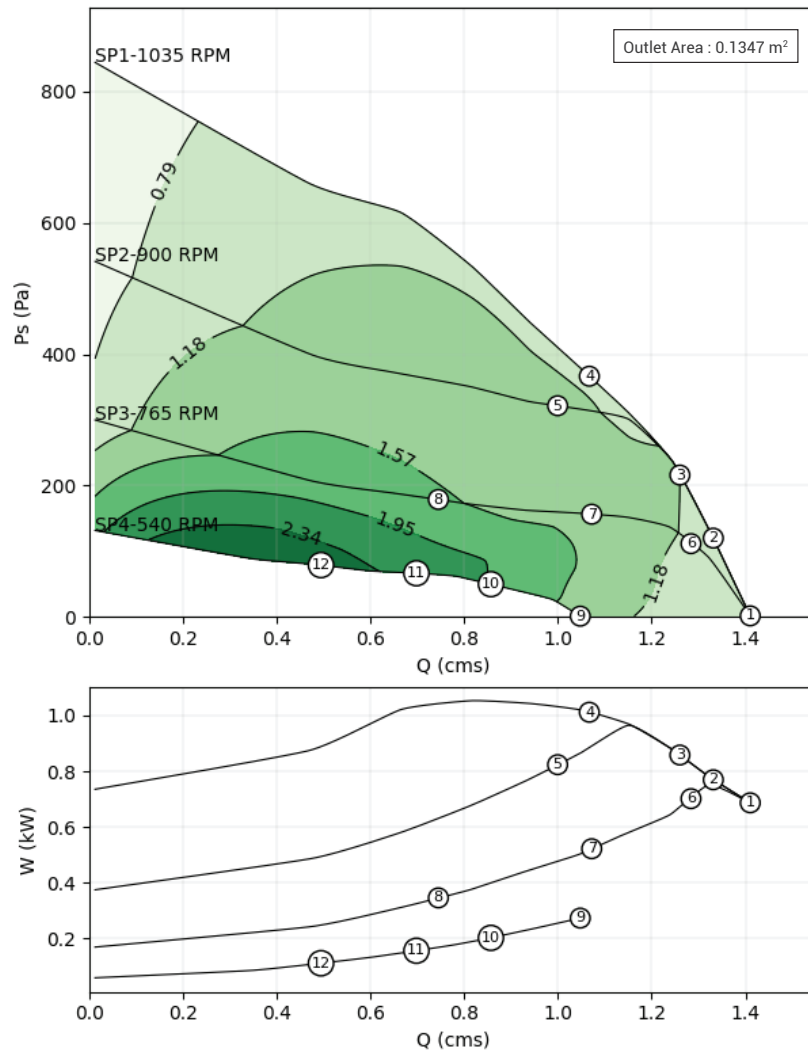


Point	Freq (Hz)	Voltage (V)	Speed (RPM)	Ps (Pa)	Q (cms)	W (kW)	Ht (%)	I (A)	LwA (dB)
1	50/60	240	724	1	1.280	0.69	15.81	3.91	79
2	50/60	240	877	139	1.200	0.81	31.55	4.52	79
3	50/60	240	989	300	1.120	0.90	45.30	5.01	78
4	50/60	240	1071	383	1.070	0.97	48.80	5.37	78
5	50/60	240	1352	599	0.610	0.87	43.23	4.87	83
6	50/60	240	1063	376	1.060	0.94	49.22	5.21	77
7	50/60	240	806	121	1.120	0.65	32.12	3.65	76
8	50/60	240	806	199	0.920	0.48	46.62	2.72	73
9	50/60	240	807	215	0.800	0.40	49.65	2.32	71
10	50/60	240	538	1	0.910	0.26	15.12	1.55	70
11	50/60	240	539	54	0.740	0.19	31.23	1.20	66
12	50/60	240	538	88	0.610	0.15	44.09	0.90	62
13	50/60	240	538	93	0.530	0.12	45.59	0.79	60

- Speed (RPM) shown above fan curves are nominal speeds.
- Performance is based on actual speed of test.
- Ps is static pressure, Q is airflow, W is motor power input measured, Ht is fan total efficiency, I is input current, Lw(A) is A-weight sound power.
- Performance certified is for installation type D-Ducted Inlet, Ducted Outlet.
- Performance ratings do not include the effects of appurtenances (accessories).
- FEI<sub>r</sub> values are calculated in accordance with ANSI/AMCA Standard 208 and are based on wire-to-air measurement, AMCA 211 ratings.
- FEI<sub>r</sub> values for fans with specific motors will vary slightly from those shown.
- The A-weighted sound power ratings shown have been calculated per AMCA International Standard 301.
- Values shown are for inlet Lw(A) sound power levels for installation type D-Ducted Inlet, Ducted Outlet.
- EC Motor Model Number MU260SC10VBSBL0A1000
- Ratings include the effects of duct end correction

# eCCE Performance Data

## eCCE 12-12

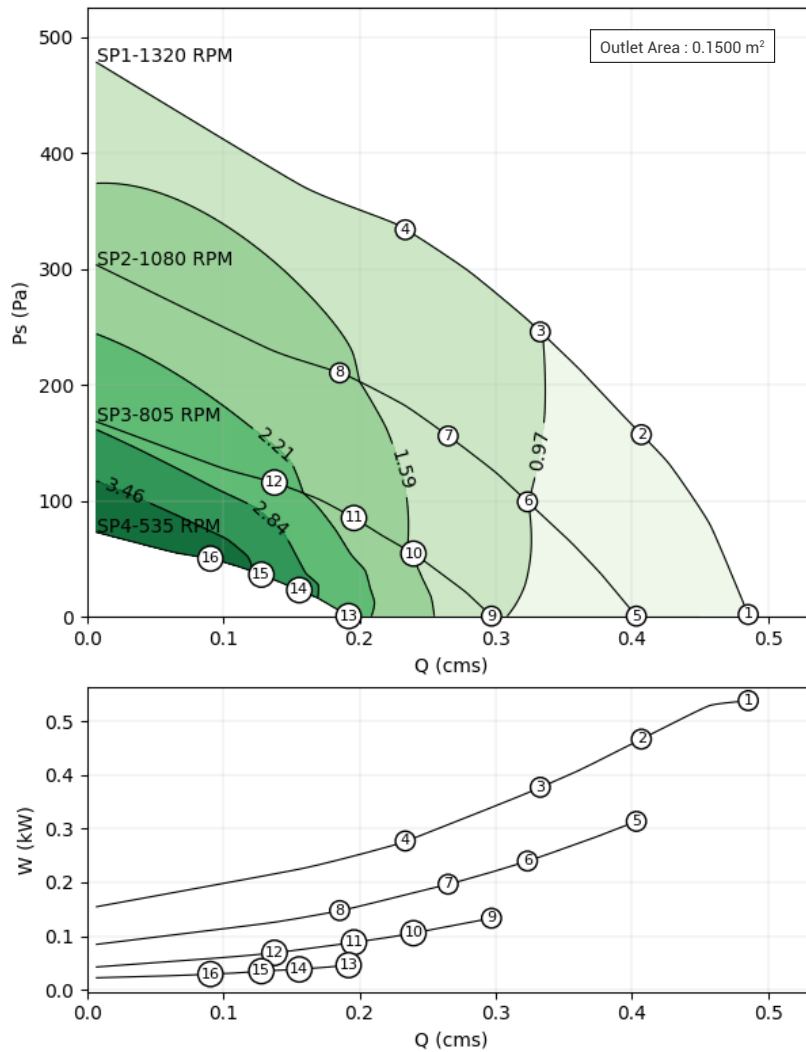


Point	Freq (Hz)	Voltage (V)	Speed (RPM)	Ps (Pa)	Q (cms)	W (kW)	Ht (%)	I (A)	LwA (dB)
1	50/60	240	720	1	1.410	0.69	13.71	3.79	78
2	50/60	240	827	120	1.330	0.77	30.80	4.24	79
3	50/60	240	938	216	1.260	0.86	39.35	4.68	80
4	50/60	240	1147	366	1.070	1.01	42.57	5.47	82
5	50/60	240	1078	321	1.000	0.82	42.98	4.56	80
6	50/60	240	809	111	1.280	0.70	30.26	3.94	75
7	50/60	240	810	156	1.070	0.52	39.83	3.07	72
8	50/60	240	810	179	0.740	0.35	42.44	2.10	72
9	50/60	240	540	1	1.050	0.27	14.15	1.75	70
10	50/60	240	539	50	0.860	0.20	31.26	1.34	67
11	50/60	240	540	66	0.700	0.16	36.82	1.08	64
12	50/60	240	540	79	0.490	0.11	38.62	0.79	61

- Speed (RPM) shown above fan curves are nominal speeds.
- Performance is based on actual speed of test.
- Ps is static pressure, Q is airflow, W is motor power input measured, Ht is fan total efficiency, I is input current, Lw(A) is A-weight sound power.
- Performance certified is for installation type D-Ducted Inlet, Ducted Outlet.
- Performance ratings do not include the effects of appurtenances (accessories).
- FEI<sub>1</sub> values are calculated in accordance with ANSI/AMCA Standard 208 and are based on wire-to-air measurement, AMCA 211 ratings.
- FEI<sub>2</sub> values for fans with specific motors will vary slightly from those shown.
- The A-weighted sound power ratings shown have been calculated per AMCA International Standard 301.
- Values shown are for inlet Lw(A) sound power levels for installation type D-Ducted Inlet, Ducted Outlet.
- EC Motor Model Number MU260SC10VBSBL0A1000
- Ratings include the effects of duct end correction

# eCSD Performance Data

## eCSD 250

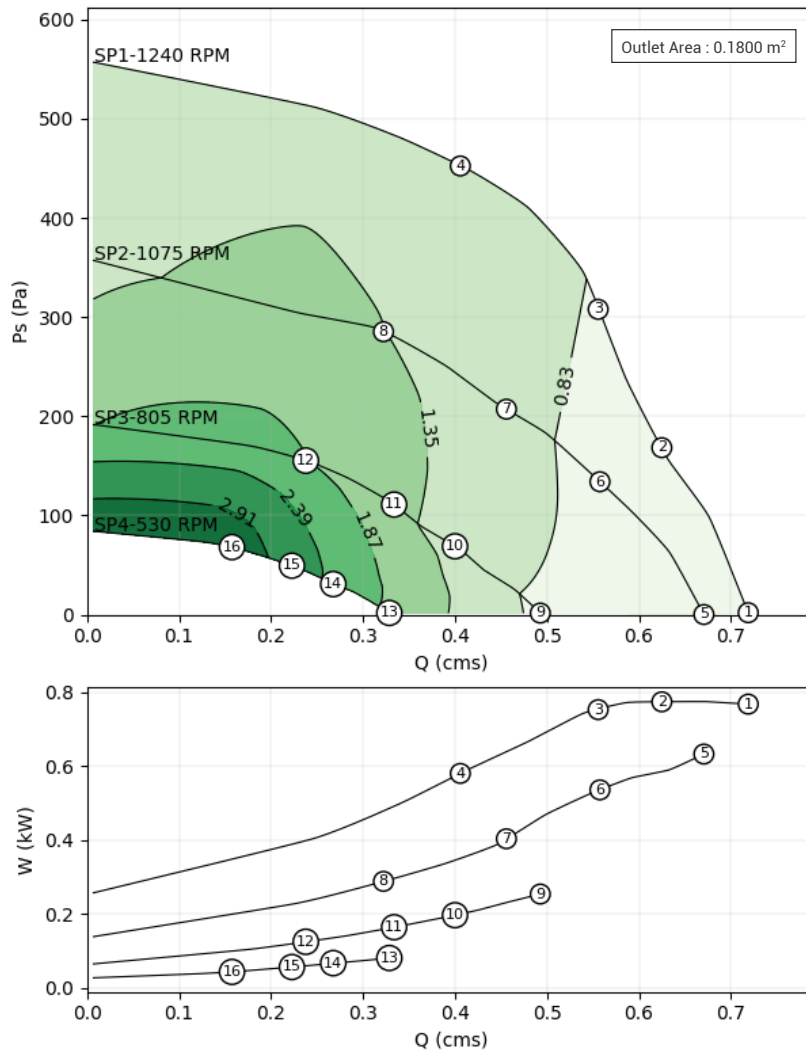


Point	Freq (Hz)	Voltage (V)	Speed (RPM)	Ps (Pa)	Q (cms)	W (kW)	Ht (%)	I (A)	LwA (dB)
1	50/60	240	1288	2	0.490	0.54	0.74	2.84	82
2	50/60	240	1351	157	0.410	0.47	14.08	2.48	80
3	50/60	240	1351	246	0.330	0.38	21.95	2.04	78
4	50/60	240	1351	334	0.230	0.28	28.28	1.54	76
5	50/60	240	1078	1	0.400	0.31	0.62	1.72	77
6	50/60	240	1078	99	0.320	0.24	13.75	1.34	74
7	50/60	240	1079	156	0.270	0.20	21.29	1.12	73
8	50/60	240	1078	210	0.190	0.15	26.60	0.85	71
9	50/60	240	806	1	0.300	0.13	0.64	0.78	70
10	50/60	240	806	54	0.240	0.11	12.74	0.62	68
11	50/60	240	807	85	0.200	0.09	19.17	0.53	66
12	50/60	240	807	116	0.140	0.07	23.32	0.42	64
13	50/60	240	534	1	0.190	0.05	0.65	0.28	62
14	50/60	240	534	23	0.160	0.04	9.73	0.24	60
15	50/60	240	534	36	0.130	0.04	13.61	0.22	61
16	50/60	240	534	50	0.090	0.03	15.70	0.19	59

- Speed (RPM) shown above fan curves are nominal speeds.
- Performance is based on actual speed of test.
- Ps is static pressure, Q is airflow, W is motor power input measured, Ht is fan total efficiency, I is input current, Lw(A) is A-weight sound power.
- Performance certified is for installation type D-Ducted Inlet, Ducted Outlet.
- Performance ratings do not include the effects of appurtenances (accessories).
- FEI<sub>r</sub> values are calculated in accordance with ANSI/AMCA Standard 208 and are based on wire-to-air measurement, AMCA 211 ratings.
- FEI<sub>r</sub> values for fans with specific motors will vary slightly from those shown.
- The A-weighted sound power ratings shown have been calculated per AMCA International Standard 301.
- Values shown are for inlet LwA sound power levels for installation type D-Ducted Inlet, Ducted Outlet.
- EC Motor Model Number MU220SC10VBSBL0A1000
- Ratings include the effects of duct end correction

# eCSD Performance Data

## eCSD 280

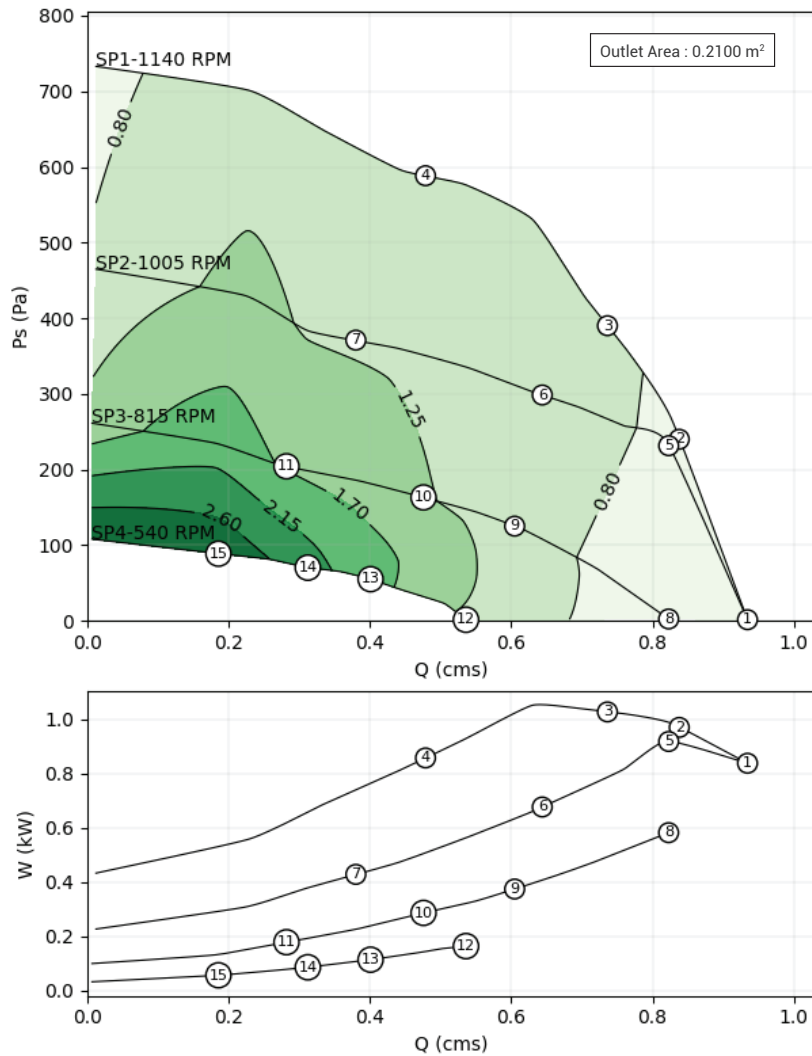


Point	Freq (Hz)	Voltage (V)	Speed (RPM)	Ps (Pa)	Q (cms)	W (kW)	Ht (%)	I (A)	LwA (dB)
1	50/60	240	1130	2	0.720	0.77	1.08	3.97	83
2	50/60	240	1205	168	0.620	0.77	14.17	4.00	82
3	50/60	240	1312	308	0.560	0.75	23.14	3.89	82
4	50/60	240	1349	452	0.410	0.58	31.84	3.07	80
5	50/60	240	1076	0	0.670	0.63	0.90	3.33	82
6	50/60	240	1074	134	0.560	0.54	14.54	2.86	80
7	50/60	240	1077	207	0.460	0.40	23.83	2.21	78
8	50/60	240	1076	285	0.320	0.29	32.06	1.63	75
9	50/60	240	805	2	0.490	0.25	1.19	1.46	75
10	50/60	240	804	69	0.400	0.20	14.59	1.15	72
11	50/60	240	804	111	0.330	0.17	22.93	0.97	70
12	50/60	240	805	155	0.240	0.13	29.67	0.75	68
13	50/60	240	532	2	0.330	0.08	1.53	0.51	66
14	50/60	240	533	31	0.270	0.07	12.74	0.43	62
15	50/60	240	533	49	0.220	0.06	19.63	0.37	61
16	50/60	240	532	68	0.160	0.04	24.63	0.30	59

- Speed (RPM) shown above fan curves are nominal speeds.
- Performance is based on actual speed of test.
- Ps is static pressure, Q is airflow, W is motor power input measured, Ht is fan total efficiency, I is input current, Lw(A) is A-weight sound power.
- Performance certified is for installation type D-Ducted Inlet, Ducted Outlet.
- Performance ratings do not include the effects of appurtenances (accessories).
- FEI<sub>1</sub> values are calculated in accordance with ANSI/AMCA Standard 208 and are based on wire-to-air measurement, AMCA 211 ratings.
- FEI<sub>2</sub> values for fans with specific motors will vary slightly from those shown.
- The A-weighted sound power ratings shown have been calculated per AMCA International Standard 301.
- Values shown are for inlet Lw(A) sound power levels for installation type D-Ducted Inlet, Ducted Outlet.
- EC Motor Model Number MU230SC10VBSBL0A1000
- Ratings include the effects of duct end correction

# eCSD Performance Data

## eCSD 315



Point	Freq (Hz)	Voltage (V)	Speed (RPM)	Ps (Pa)	Q (cms)	W (kW)	Ht (%)	I (A)	LwA (dB)
1	50/60	240	927	1	0.930	0.84	1.49	4.69	83
2	50/60	240	1091	240	0.840	0.97	21.53	5.42	83
3	50/60	240	1230	390	0.740	1.03	28.46	5.71	83
4	50/60	240	1358	588	0.480	0.86	33.00	4.83	83
5	50/60	240	1082	231	0.820	0.92	21.55	5.15	81
6	50/60	240	1086	298	0.640	0.68	28.91	3.95	80
7	50/60	240	1086	371	0.380	0.43	33.06	2.60	78
8	50/60	240	813	2	0.820	0.58	1.64	3.37	81
9	50/60	240	813	125	0.600	0.38	20.99	2.23	76
10	50/60	240	814	163	0.480	0.29	27.58	1.76	74
11	50/60	240	814	204	0.280	0.18	32.38	1.20	71
12	50/60	240	541	1	0.540	0.16	1.72	1.06	71
13	50/60	240	542	55	0.400	0.11	20.04	0.77	66
14	50/60	240	541	70	0.310	0.09	25.85	0.61	63
15	50/60	240	541	89	0.190	0.06	29.06	0.41	62

- Speed (RPM) shown above fan curves are nominal speeds.
- Performance is based on actual speed of test.
- Ps is static pressure, Q is airflow, W is motor power input measured, Ht is fan total efficiency, I is input current, Lw(A) is A-weight sound power.
- Performance certified is for installation type D-Ducted Inlet, Ducted Outlet.
- Performance ratings do not include the effects of appurtenances (accessories).
- FEI<sub>r</sub> values are calculated in accordance with ANSI/AMCA Standard 208 and are based on wire-to-air measurement, AMCA 211 ratings.
- FEI<sub>r</sub> values for fans with specific motors will vary slightly from those shown.
- The A-weighted sound power ratings shown have been calculated per AMCA International Standard 301.
- Values shown are for inlet Lw(A) sound power levels for installation type D-Ducted Inlet, Ducted Outlet.
- EC Motor Model Number MU260SC10VBSBL0A1000
- Ratings include the effects of duct end correction

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