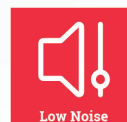


# eCCE & eCSD ECOWATT

**EC Cabinet Fan** Inline Centrifugal Cabinet Fan

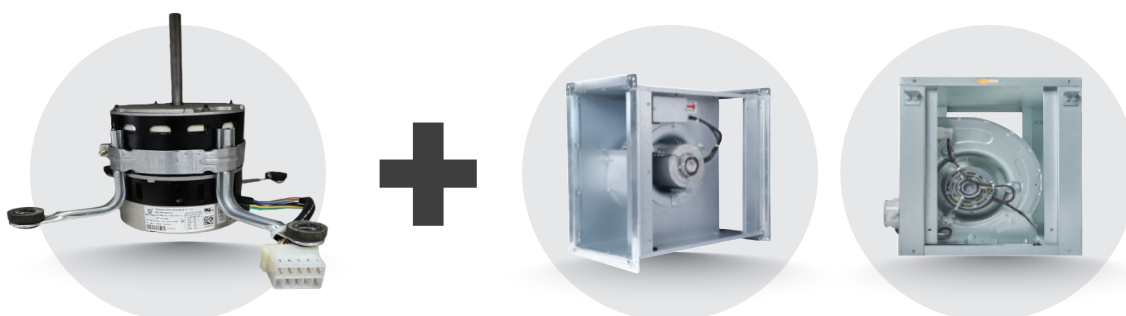


# Why KRUGER ?

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



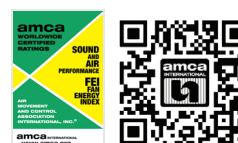
### Compact, Reliable Design

- 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<br>eCCE 10-8 | eCCE 10-10<br>eCCE 12-9<br>eCCE 12-12 |
| Frequency                 | 50 / 60 Hz             |                                     |                       |                       |                                       |
| Ingress Protection        | IP 20                  |                                     |                       |                       |                                       |
| Insulation Class          | Class B                | eCSD Model                          | eCSD 250              | eCSD 280              | eCSD 315                              |
| 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.

*\*The DCV converter is not included as a standard feature, but can be provided upon request.*

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



AIRSENs



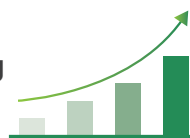
REB-Ecowatt



TPI-PI



**Energy Saving**  
with DCV  
Solution up to **87%**



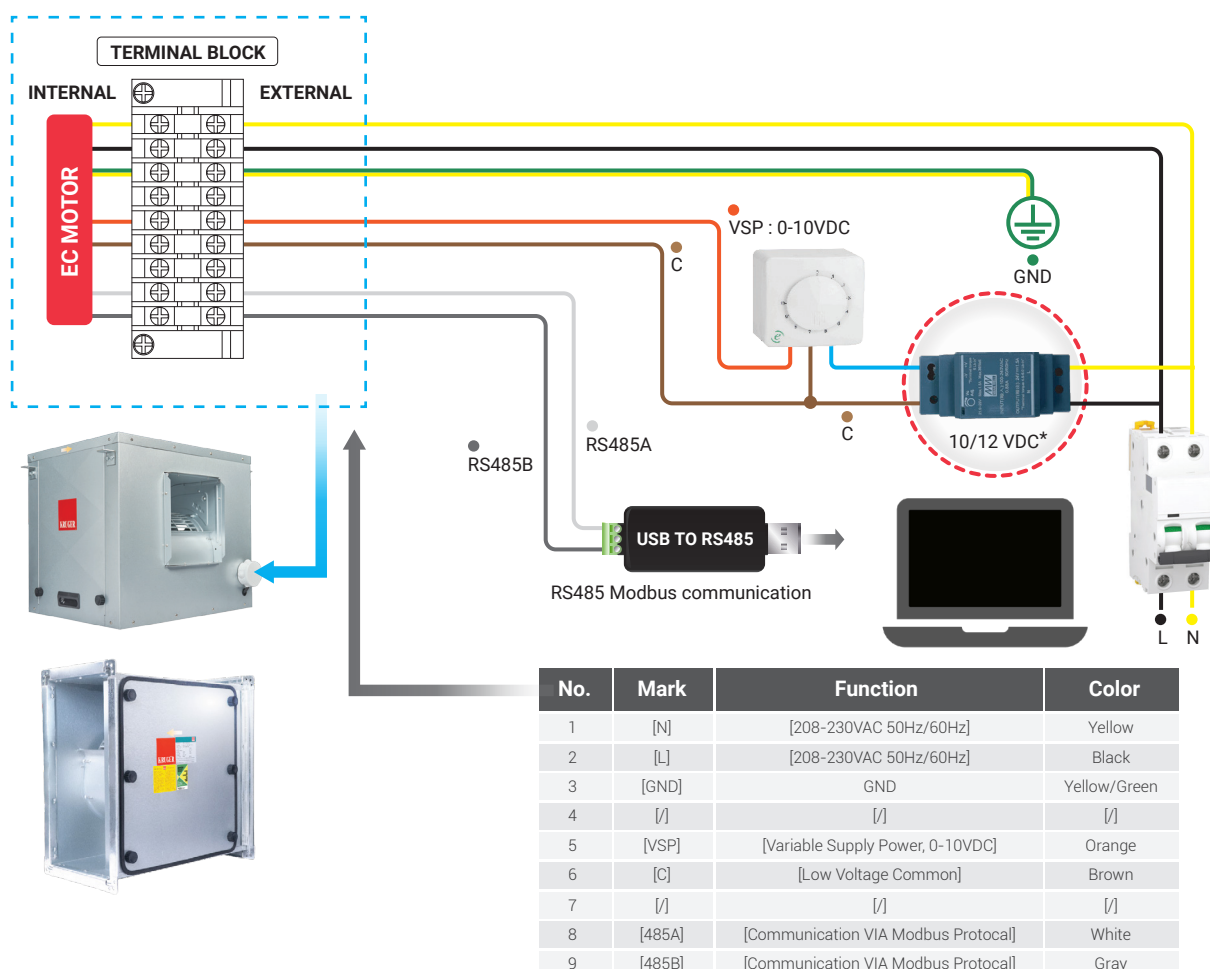
## Power Wiring

- 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

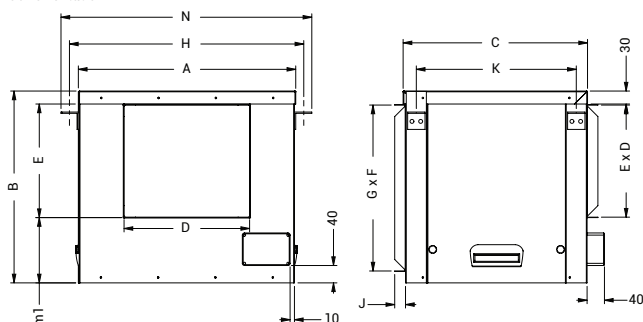
- Ensure all control cables (RS485A, RS485B, VSP, and C) for each fan are accessible at an external location, away from single-phase power supply connections.
- When using Modbus over RS485, appropriate shielded cables must be used.

# Wiring Diagram

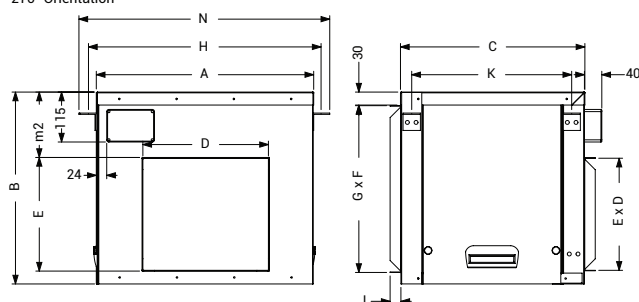


## eCCE Dimension

90° Orientation



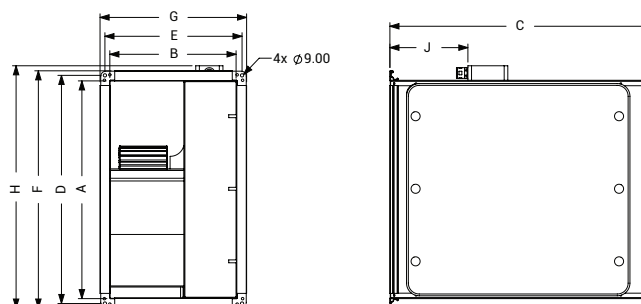
270° Orientation



| 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.

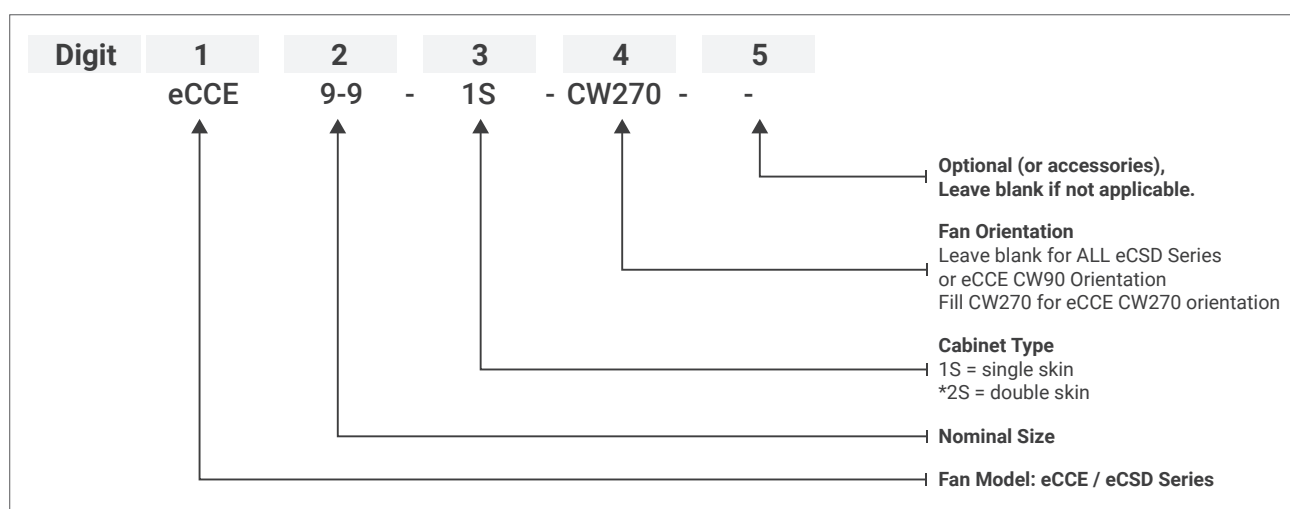
## eCSD Dimension



| 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    |

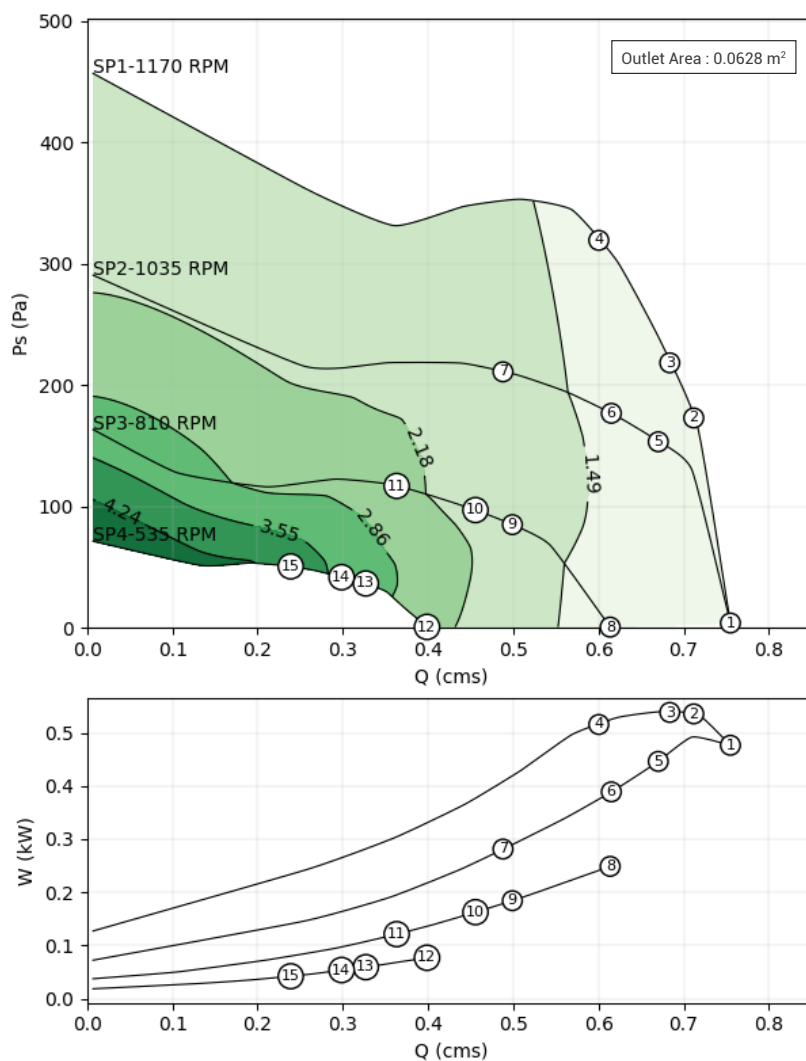
All dimension in mm.

## Fan Nomenclature



# eCCE Performance Data

## eCCE 9-7

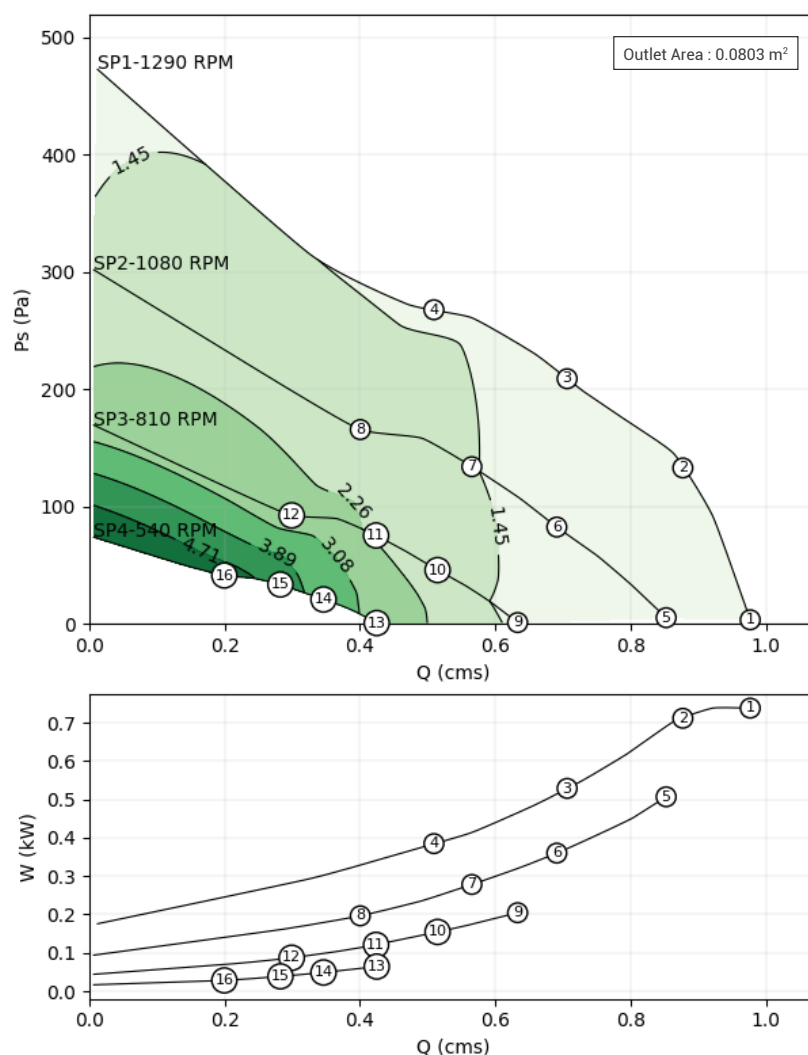


| Point | Freq (Hz) | Voltage (V) | Speed (RPM) | Ps (Pa) | Q (cms) | W (kW) | Ht (%) | I (A) | LwA (dB) |
|-------|-----------|-------------|-------------|---------|---------|--------|--------|-------|----------|
| 1     | 50/60     | 240         | 990         | 4       | 0.750   | 0.48   | 14.26  | 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

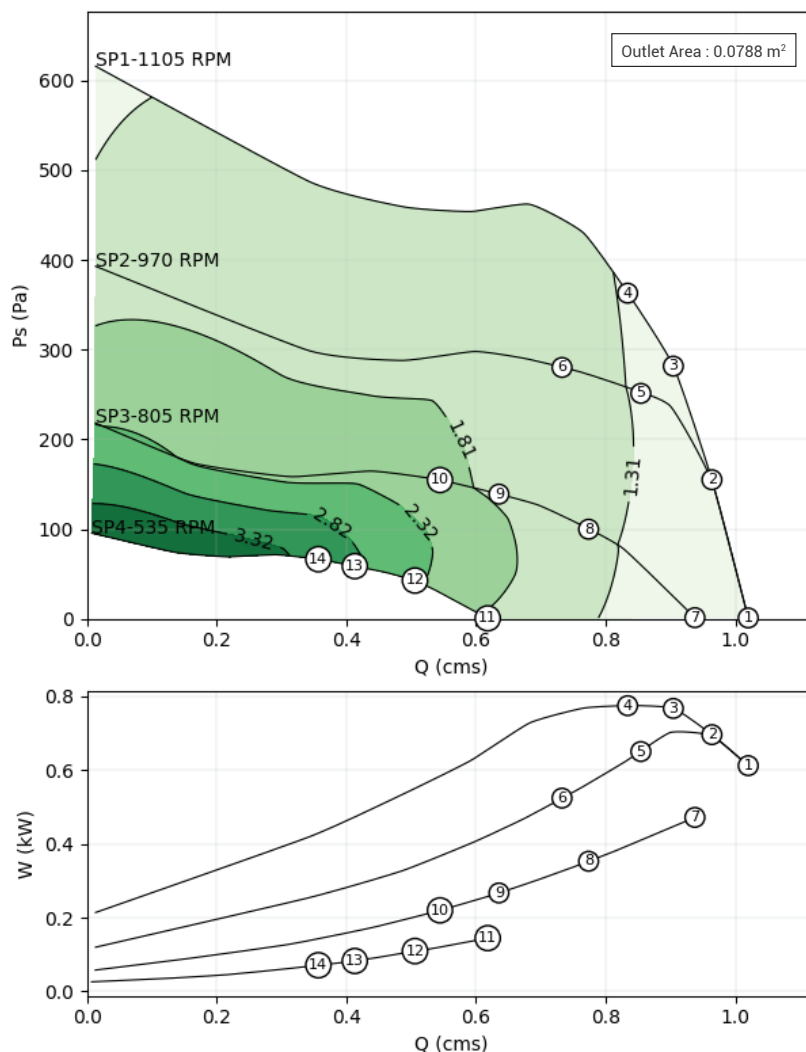


| Point | Freq (Hz) | Voltage (V) | Speed (RPM) | Ps (Pa) | Q (cms) | W (kW) | Ht (%) | I (A) | LwA (dB) |
|-------|-----------|-------------|-------------|---------|---------|--------|--------|-------|----------|
| 1     | 50/60     | 240         | 1230        | 3       | 0.980   | 0.74   | 12.26  | 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 LwA 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

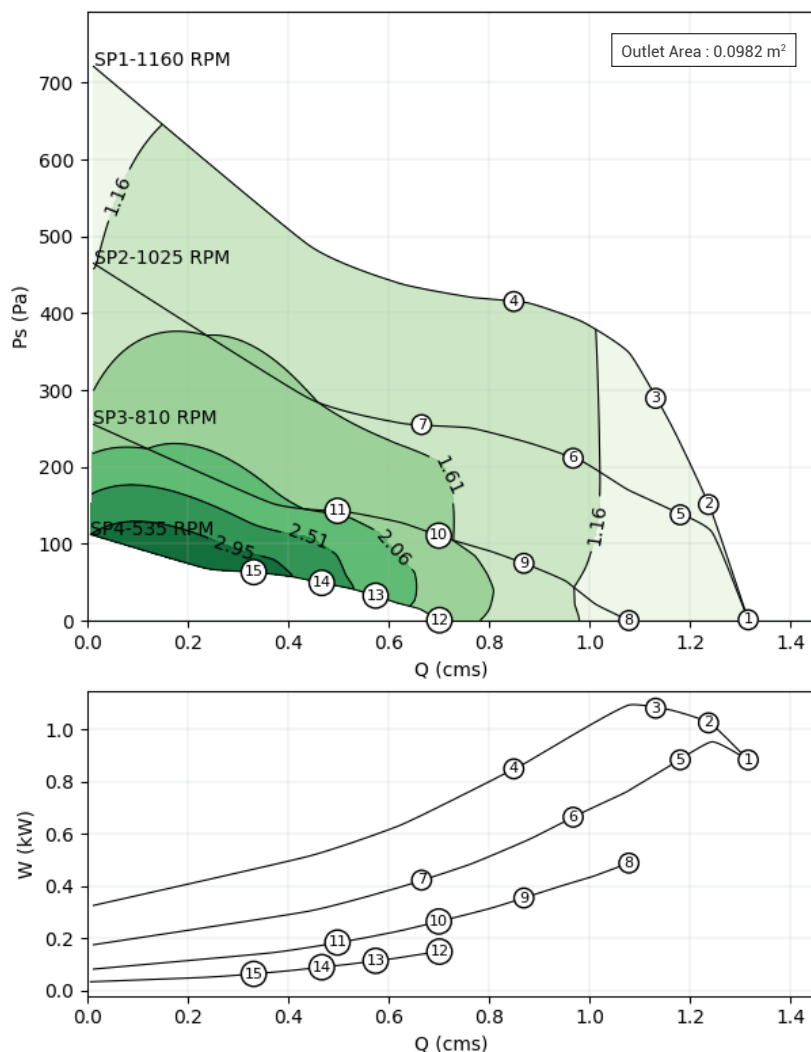


| Point | Freq (Hz) | Voltage (V) | Speed (RPM) | Ps (Pa) | Q (cms) | W (kW) | Ht (%) | I (A) | LwA (dB) |
|-------|-----------|-------------|-------------|---------|---------|--------|--------|-------|----------|
| 1     | 50/60     | 240         | 862         | 1       | 1.020   | 0.61   | 16.33  | 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 LwA 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

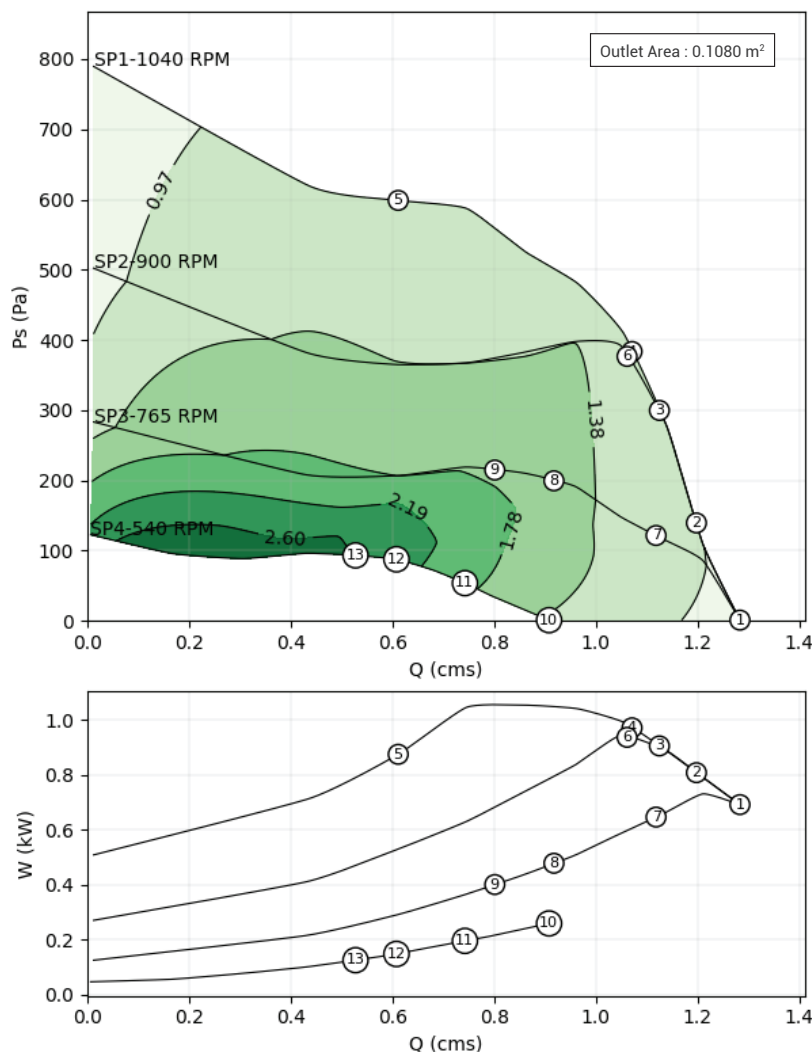


| Point | Freq (Hz) | Voltage (V) | Speed (RPM) | Ps (Pa) | Q (cms) | W (kW) | Ht (%) | I (A) | LwA (dB) |
|-------|-----------|-------------|-------------|---------|---------|--------|--------|-------|----------|
| 1     | 50/60     | 240         | 968         | 1       | 1.320   | 0.88   | 16.15  | 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>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 MU260SC10VBSBL0A1000
- Ratings include the effects of duct end correction

# eCCE Performance Data

## eCCE 12-9

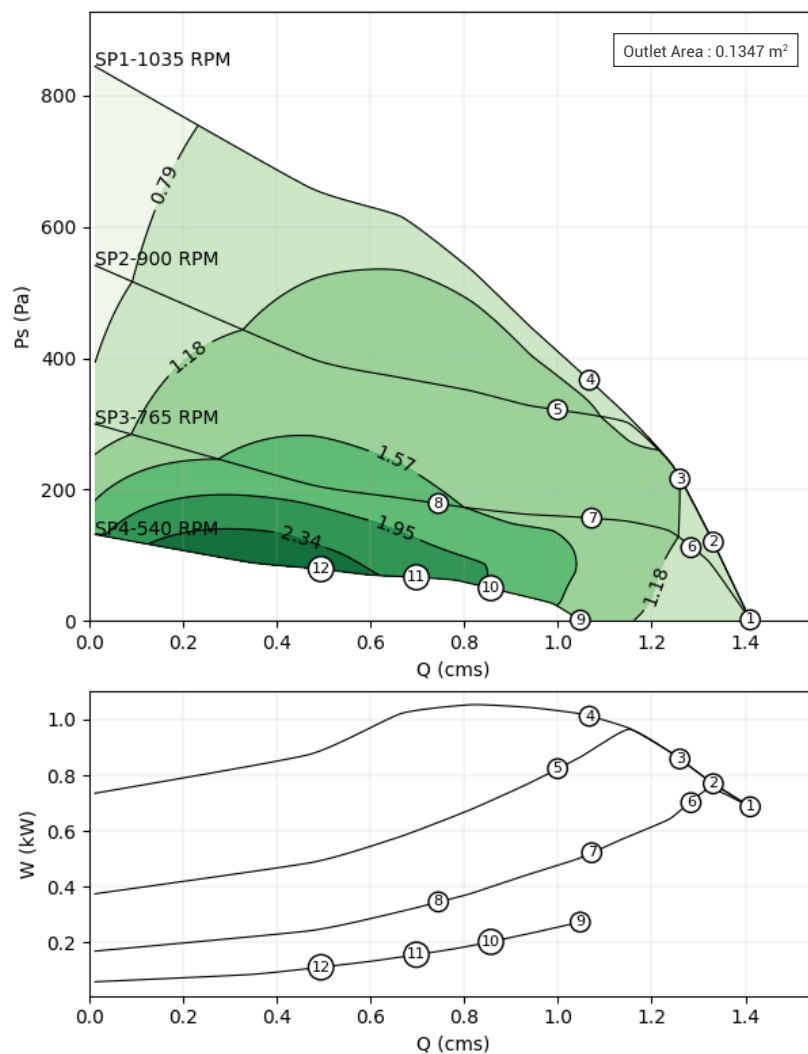


| Point | Freq (Hz) | Voltage (V) | Speed (RPM) | Ps (Pa) | Q (cms) | W (kW) | Ht (%) | I (A) | LwA (dB) |
|-------|-----------|-------------|-------------|---------|---------|--------|--------|-------|----------|
| 1     | 50/60     | 240         | 724         | 1       | 1.280   | 0.69   | 15.81  | 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 LwA 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

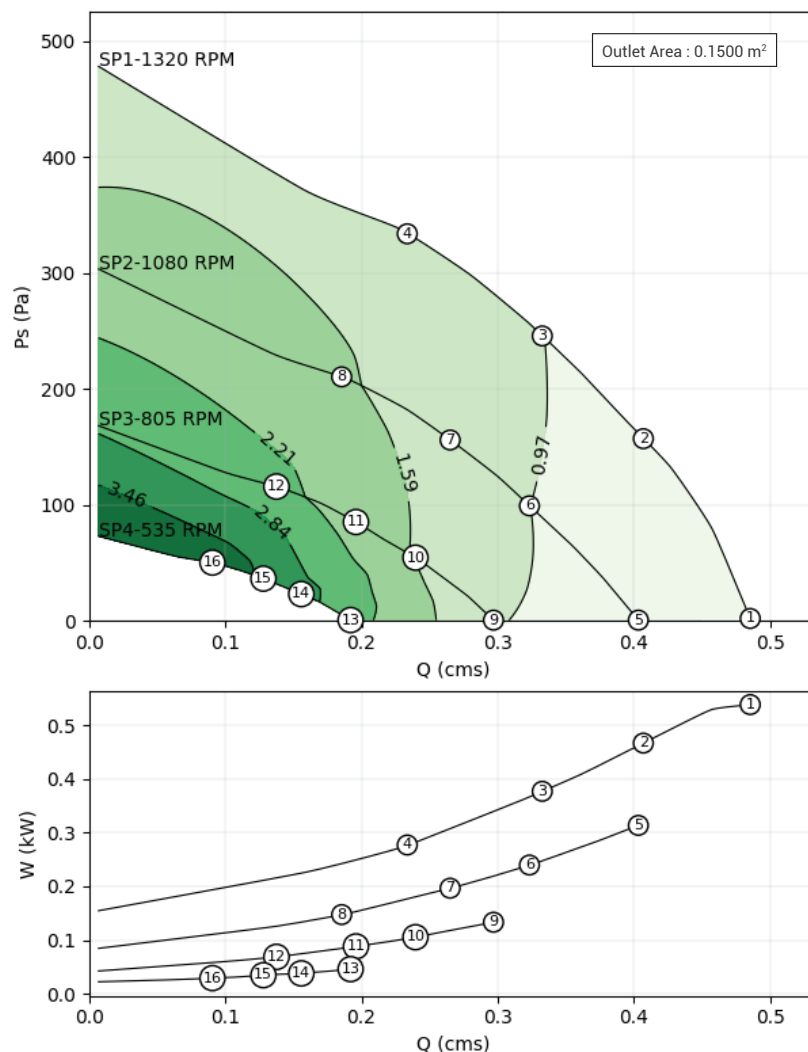


| Point | Freq (Hz) | Voltage (V) | Speed (RPM) | Ps (Pa) | Q (cms) | W (kW) | Ht (%) | I (A) | LwA (dB) |
|-------|-----------|-------------|-------------|---------|---------|--------|--------|-------|----------|
| 1     | 50/60     | 240         | 720         | 1       | 1.410   | 0.69   | 13.71  | 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>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 MU260SC10VBSBL0A1000
- Ratings include the effects of duct end correction

# eCSD Performance Data

## eCSD 250

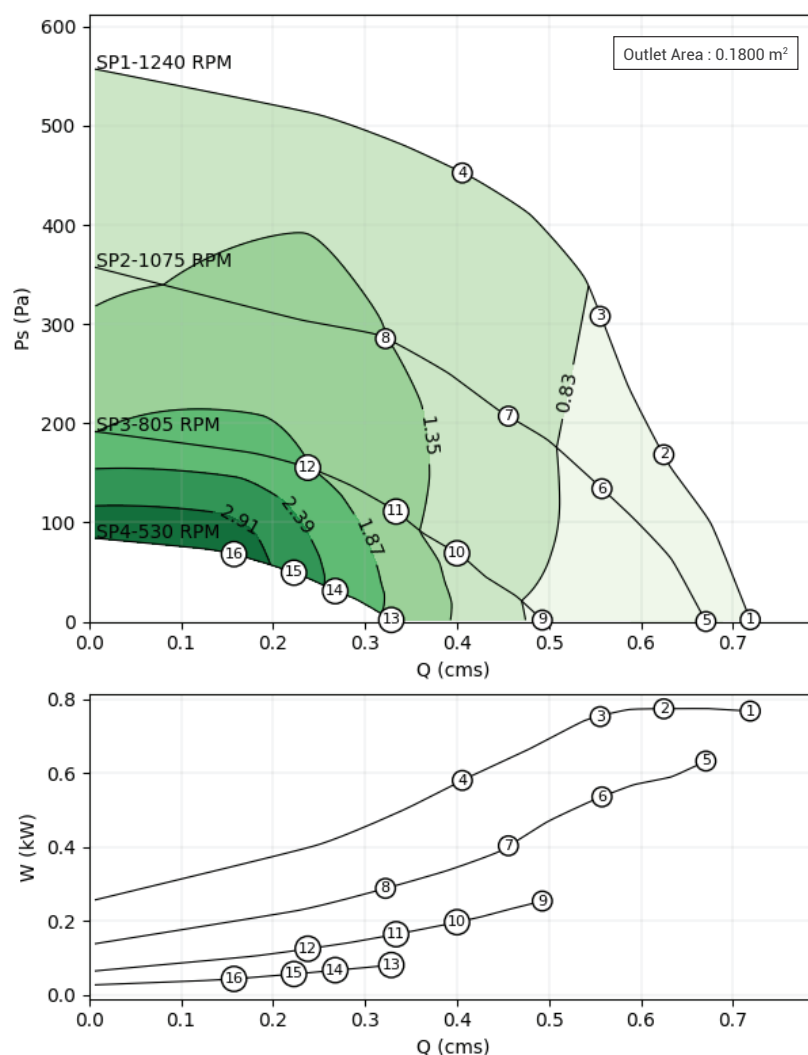


| Point | Freq (Hz) | Voltage (V) | Speed (RPM) | Ps (Pa) | Q (cms) | W (kW) | Ht (%) | I (A) | LwA (dB) |
|-------|-----------|-------------|-------------|---------|---------|--------|--------|-------|----------|
| 1     | 50/60     | 240         | 1288        | 2       | 0.490   | 0.54   | 0.74   | 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 Lw(A) 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

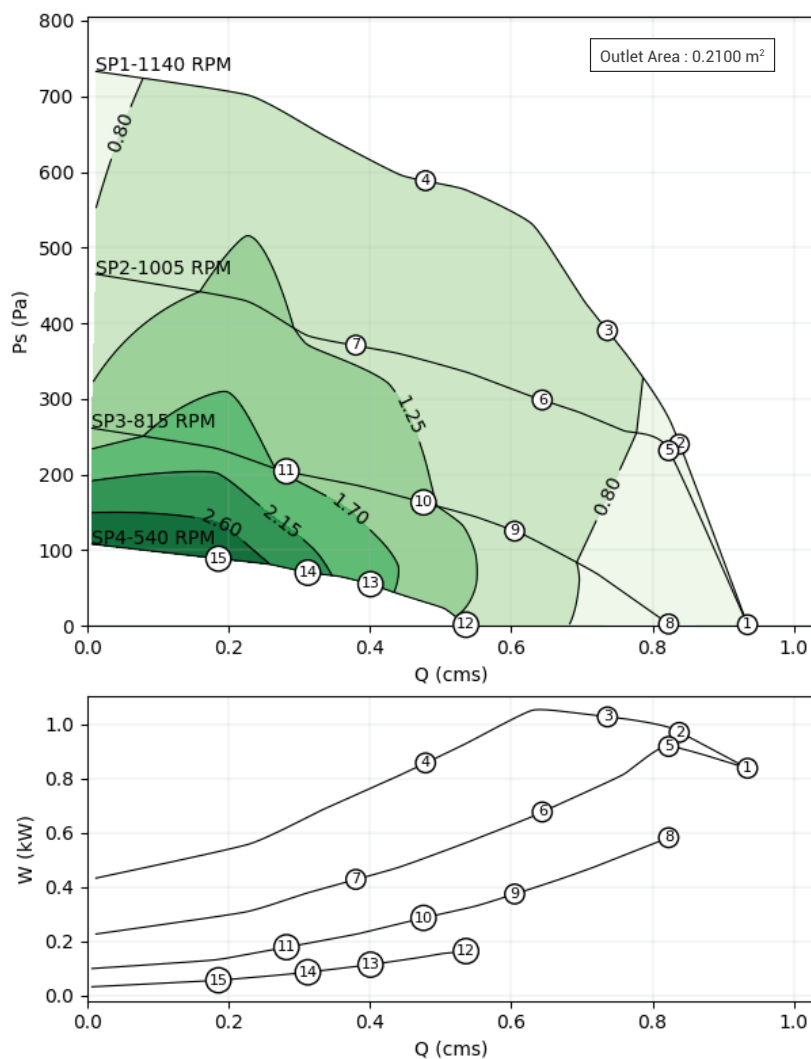


| Point | Freq (Hz) | Voltage (V) | Speed (RPM) | Ps (Pa) | Q (cms) | W (kW) | Ht (%) | I (A) | LwA (dB) |
|-------|-----------|-------------|-------------|---------|---------|--------|--------|-------|----------|
| 1     | 50/60     | 240         | 1130        | 2       | 0.720   | 0.77   | 1.08   | 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>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 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 LwA 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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**CAT079.E0 June 2026**

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