

15050VA (5920VL)

DC Axial Fan

150X^Φ172X50^L



General Specifications

Motor Protection : Auto Restart / Polarity Protection

Insulation Resistance : 10MΩ or over with a DC500V Megger
 Dielectric Withstand Voltage : AC700V 1s

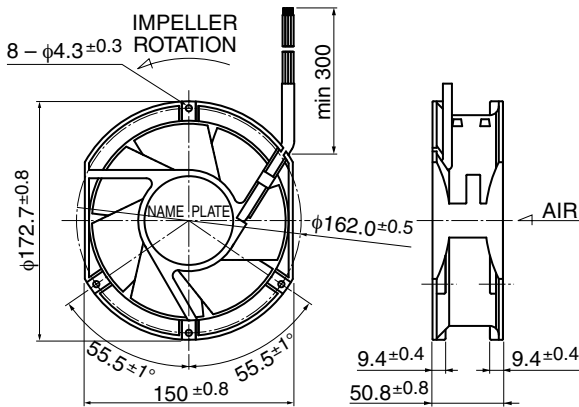
Allowable Ambient : - 10°C ~ + 70°C (Operating)
 Temperature Range : - 40°C ~ + 70°C (Storage)
 non-condensing environment

Expected Life

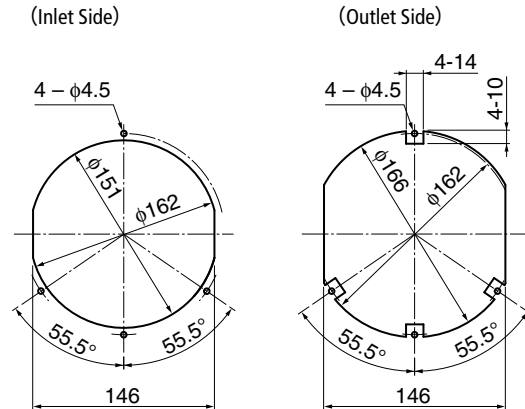
※ Failure Rate: 10% (L10 Life)

25°C 100,000 (Hours)

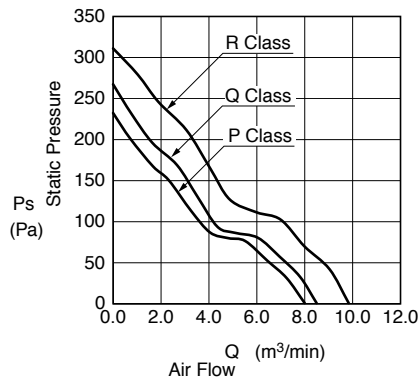
Outline



Panel Out-cuts



Characteristic Curves



Material

Casing : Aluminum (Black Painting)
 Impeller : Plastic (Black) UL94V-0
 Bearing : Ball Bearing
 Lead Wire : UL10368 AWG22 + : Red, - : Black

Customize service for IP compatible type and Oil-proof type is available for this item. Please contact to our sales representative for more detail.

Specifications

| Model | Product No. | Rating Voltage | Operating Voltage | Current | Input Power | Speed | Max. Air Flow | | Max. Static Pressure | Noise | Mass | |
|-----------------|-------------|----------------|-------------------|---------|-------------|-------|---------------|---------|----------------------|-------|------|------|
| | | (V) | (V) | | | | (m³/min)*1 | (CFM)*1 | | | | |
| 15050VA-24P-EA- | 00 | 24 | 18.0 ~ 26.4 | 1.10 | 26.4 | 3750 | 8.0 | 282 | 232 | 0.93 | 750 | |
| 15050VA-24Q-EA- | 00 | | | 1.30 | 31.2 | 4000 | 8.5 | 300 | 267 | 1.07 | | 64.0 |
| 15050VA-24R-EA- | 00 | | | 1.80 | 43.2 | 4600 | 9.8 | 346 | 312 | 1.25 | | 68.0 |
| 15050VA-48P-EA- | 00 | 48 | 38.0 ~ 52.8 | 0.55 | 26.4 | 3750 | 8.0 | 282 | 232 | 0.93 | | |
| 15050VA-48Q-EA- | 00 | | | 0.65 | 31.2 | 4000 | 8.5 | 300 | 267 | 1.07 | | 64.0 |
| 15050VA-48R-EA- | 00 | | | 0.90 | 43.2 | 4600 | 9.8 | 346 | 312 | 1.25 | | 68.0 |

Rotation: Counterclockwise as seen from the label side
 Airflow Outlet: Label side

*1: Average Values in Free Air

General Specifications

Motor Type: DC Brushless Motor

Motor Protection: Auto Restart/Polarity Protection

Motor withstands reverse connection for positive and negative leads.

Insulation Resistance:

10M Ω or over with a DC500V Megger

Dielectric Withstand Voltage:

AC 700V 1s or 500V 1min

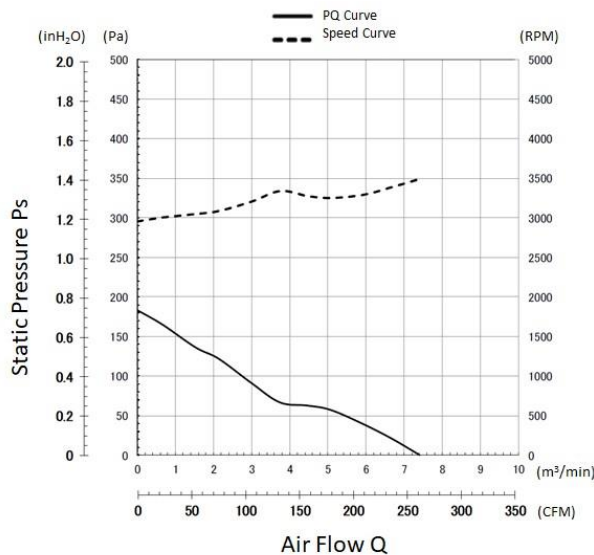
Allowable Ambient Temperature Range:

-10°C ~ +70°C (Operating)

-40°C ~ +70°C (Storage)

(non-condensing environment)

Characteristics Curves



Specifications

| MODEL | Rated | Operating | Current | | Input Power | | Speed | Max. | | Max. Static | Noise | Mass | |
|-------------------|---------|-------------|-------------------|-------------------|-------------------|-------------------|------------------------------------|----------|----------|----------------------|-------|--------------------|----------|
| | Voltage | Voltage | Avg | Max | Avg | Max | | Air Flow | | | | | Pressure |
| | (V) | (V) | (A) ^{*1} | (A) ^{*1} | (W) ^{*1} | (W) ^{*1} | (min ⁻¹) ^{*1} | (CFM) | (m³/min) | (inH ₂ O) | (Pa) | (dB) ^{*1} | (g) |
| 15050VA-48N-EU-01 | 48 | 38.0 ~ 52.8 | 0.45 | 0.51 | 21.60 | 24.48 | 3500 | 261.3 | 7.40 | 0.74 | 183 | 60.0 | 750 |

*1: Values in Free Air

PWM Benefits & Applications

PWM Benefits

- Increased Life Expectancy
- Energy Saving
- Lower Vibration
- Lower Noise
- Current Spike Prevention

PWM Applications

- Routers
- Switches
- Storage
- Data Centers
- Optical Repeaters
- Broadcast Equipment
- Inverters
- UPS
- Battery Chargers
- Fuel Cells
- Industrial Power Supplies
- Welders
- Plasma Cutters
- Instrumentation
- Test Equipment
- Enclosures and more

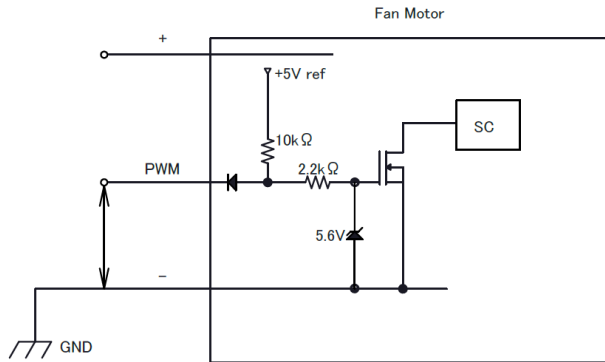
- Customized fan performances at multiple operating points.
- Peak efficiency resulting in lower total ownership costs.
- Cost effective and better reliability.

Life Expectancy L10

25°C 100,000 Hours

PWM Specifications

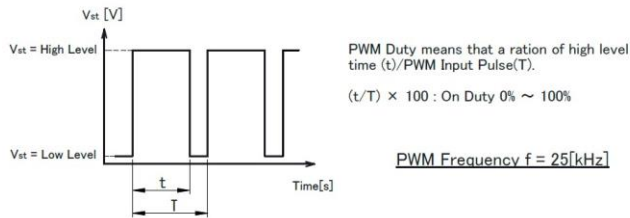
PWM CONTROL CONNECTION



1. PWM Control

- V_{st} = Low Level (0V~0.4V) → Stop (On Duty 0%)
- V_{st} = High Level (4.0V~5.0V) → Full Speed (On Duty 100%)
- V_{st} = Open → Full Speed

2. PWM Duty & PWM Input Pulse

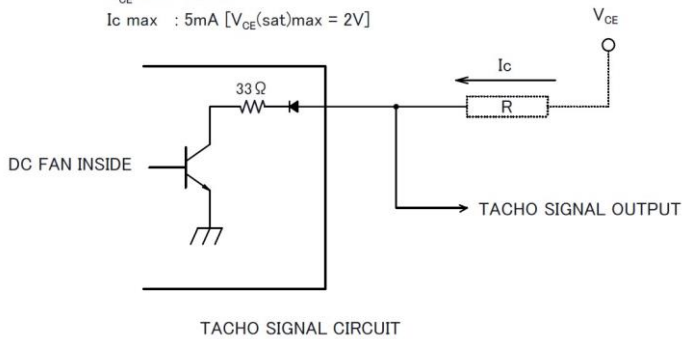


TACHO Specifications

TACHO SIGNAL

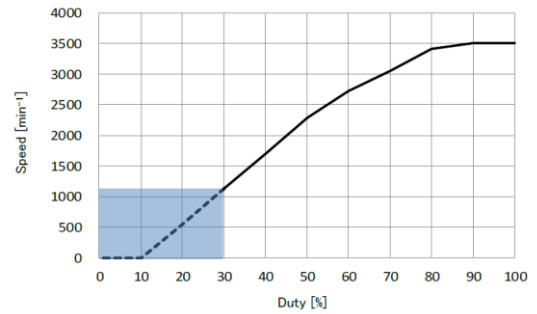
- OUTPUT CIRCUIT : OPEN COLLECTOR
- SPECIFICATION

$T_a=25^{\circ}\text{C}$
 Absolute Maximum Ratings at $T_a=25^{\circ}\text{C}$
 V_{CE} max : +52.8V
 I_c max : 5mA [$V_{CE}(\text{sat})_{\text{max}} = 2\text{V}$]



PWM Characteristics Curve

Reference PWM Duty VS Speed
 Conditions: at rating Voltage, $V_{st}=5.0\text{V}$, $f=25\text{kHz}$, $T_a=25^{\circ}\text{C}$

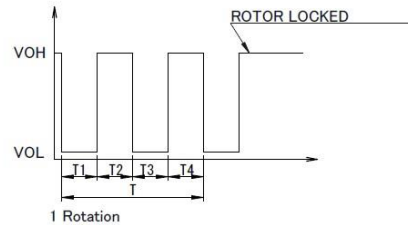


3. The condition for PWM control are as follows.

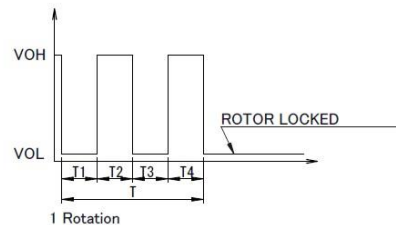
- When you use this under PWM control, always be sure the motor's operation under practical mounting state. Fan motor may not start up caused by PWM control at very low speed condition.
- To run at Rating Voltage.
- Please use the start with Duty 30% or more at 25kHz. [At rated voltage input, Ambient temperature 25°C]

3. OUTPUT WAVEFORM : AT RATED VOLTAGE

OUTPUT SIGNAL VOLTAGE
 3-1 Case-1

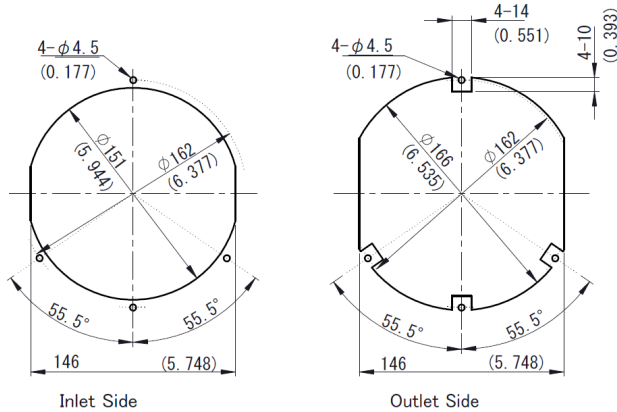


3-2 Case-2



- 1) When the rotor is locked at VOH position of signal, signal keeps VOH position.
- 2) When the rotor is locked at VOL position of signal, signal keeps VOL position.
- 3) $T = T_1 + T_2 + T_3 + T_4 = 60 / m = 1$ rotation
 $m : \text{min}^{-1}$
 Tach Duty Cycle = $50\% \pm 10\%$

Panel Cut-Outs



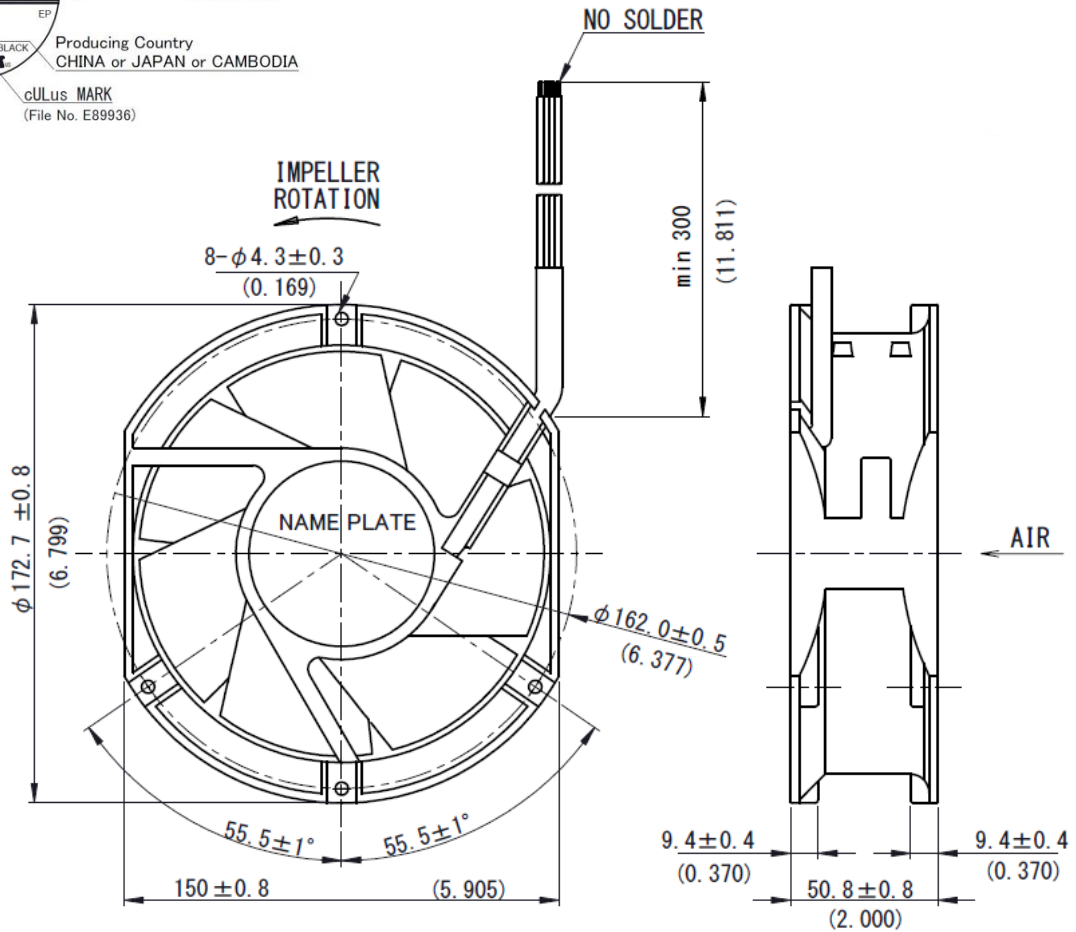
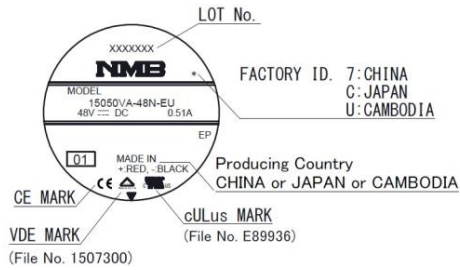
Unit: mm (inch)

Materials

- Casing : Aluminum (Painted Black)
- Impeller : Plastic (Black UL94V-0)
- Bearing : Ball Bearing
- Lead Wire : UL10368 AWG22 and AWG24
 - AWG22:
 - (+) : Red (-) : Black
 - AWG24:
 - PWM : Brown Tach : White

Outline

Name Plate



Unit: mm (inch)

General Specifications

Motor Protection:

Auto Restart/Polarity Protection

Insulation Resistance:

10M Ω or over with a DC500V Megger

Dielectric Withstand Voltage: AC 700V 1s

Allowable Ambient Temperature Range:

-10°C ~ +70°C (Operating)

-40°C ~ +70°C (Storage)

IP Code: IP69K

Expected Life

25°C 100,000 Hours (L10)

Material

Casing : Aluminum (Black)

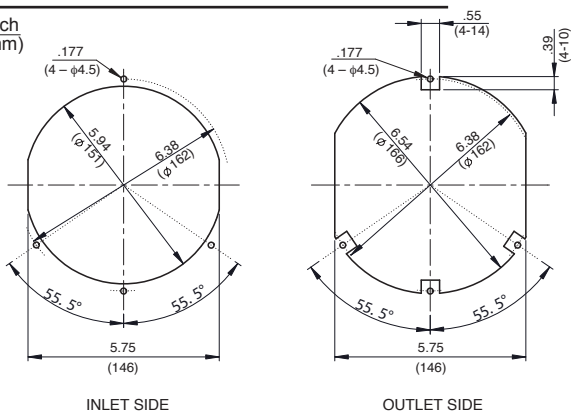
Impeller : Plastic (Black) UL94V-0

Bearing : Ball Bearing

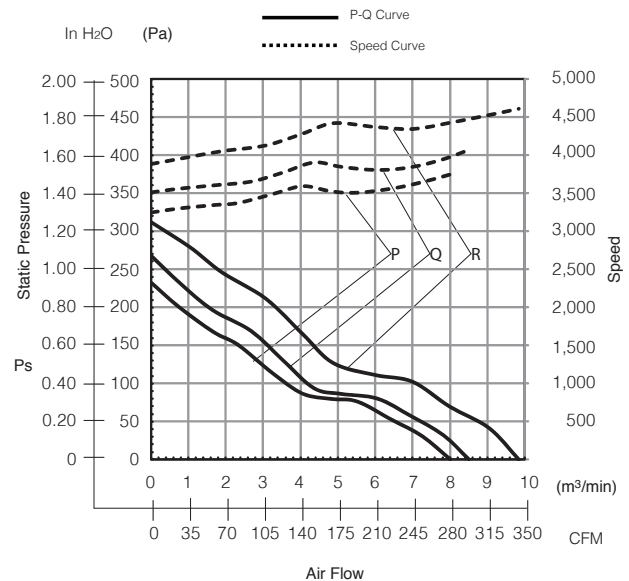
Lead Wire : UL10368, AWG22, +Red, -Black

Panel Cut-Outs

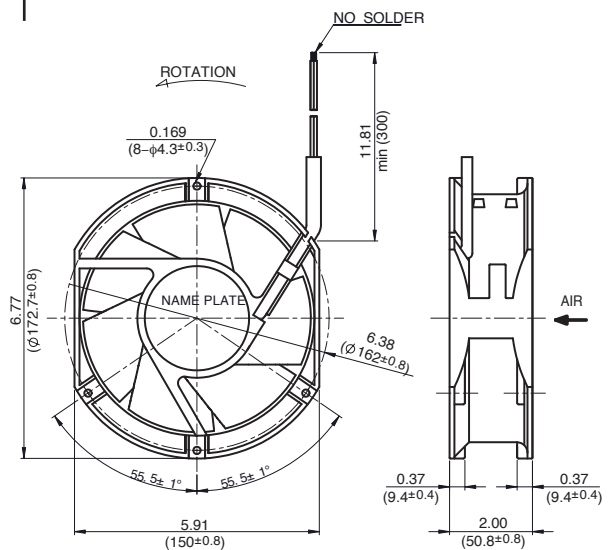
Units: inch (mm)



Characteristic Curves



Outline



Specifications

| MODEL | Rated Voltage | Operating Voltage | Current | Input Power | Speed | Max. Air Flow | | Max. Static Pressure | | Noise | Mass |
|-------------------|---------------|-------------------|---------|-------------|------------------------|---------------|-------------------------|----------------------|--------|--------|------|
| | (V) | (V) | (A)*1 | (W)*1 | (min ⁻¹)*1 | CFM*1 | (m ³ /min)*1 | in H ₂ O | (Pa)*1 | (dB)*1 | (g) |
| 15050VA-24P-GA-00 | 24 | 18.0 ~ 26.4 | 1.10 | 26.4 | 3750 | 282.52 | 8.0 | 0.93 | 232.0 | 62.0 | 870 |
| 15050VA-24Q-GA-00 | 24 | 18.0 ~ 26.4 | 1.30 | 31.2 | 4000 | 300.17 | 8.5 | 1.07 | 267.0 | 64.0 | 870 |
| 15050VA-24R-GA-00 | 24 | 18.0 ~ 26.4 | 1.80 | 43.2 | 4600 | 346.08 | 9.8 | 1.25 | 312.0 | 68.0 | 870 |
| 15050VA-48P-GA-00 | 48 | 38.0 ~ 52.8 | 0.55 | 26.4 | 3750 | 282.52 | 8.0 | 0.93 | 232.0 | 62.0 | 870 |
| 15050VA-48Q-GA-00 | 48 | 38.0 ~ 52.8 | 0.65 | 31.2 | 4000 | 300.17 | 8.5 | 1.07 | 267.0 | 64.0 | 870 |
| 15050VA-48R-GA-00 | 48 | 38.0 ~ 52.8 | 0.90 | 43.2 | 4600 | 346.08 | 9.8 | 1.25 | 312.0 | 68.0 | 870 |

Rotation: Clockwise

Airflow Outlet: Air Out Over Struts

*1: Average Values in Free Air

Note: PWM/Locked Rotor/Tach Available