

## General Specifications

**Motor Type:** 3 Phase DC Brushless Motor

**Motor Protection:** Auto Restart/Polarity Protection/Overload Protection (Motor withstands reverse connection for positive and negative leads.)

**Insulation Resistance:** 10M Ω or over with a DC500V Megger

**Dielectric Withstand Voltage:** AC 500V 1min

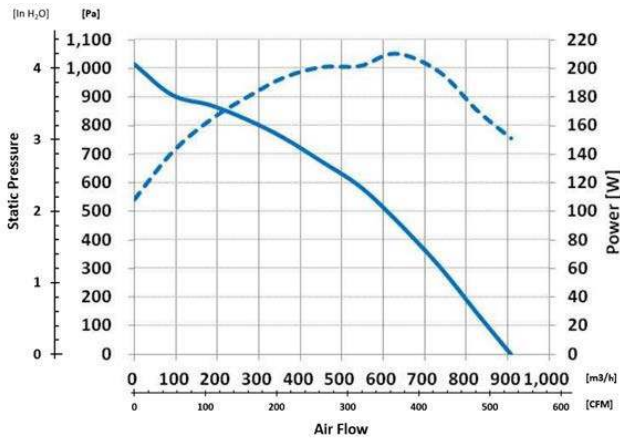
**Allowable Ambient Temperature Range:**

-30°C ~ +60°C (Operating)

-40°C ~ +70°C (Storage)

(non-condensing environment)

## Characteristics Curve



## IP Rated Fan Benefits & Applications

### IP68

NMB offers Ingress Protection (IP) rated cooling fans. IP68 fans provide dust tight protection, and safeguard against wet location and powerful water jets for outdoor applications and other harsh environments. NMB fans are designed with NMB precision machined ball bearings assuring long life and high reliability.

### Benefits

- IP68 rating per IEC 60529 standard
- Long life and high reliability with NMB precision ball bearings (L10 number)
- Open Collector Tacho Signal output for fan speed
- PWM Speed Control

### Applications

- Outdoor Applications
- Factory Automation
- Food Processing
- Inverters
- Telecomm
- Horticulture

## Life Expectancy L10

40°C 70,000 Hours

## Specifications

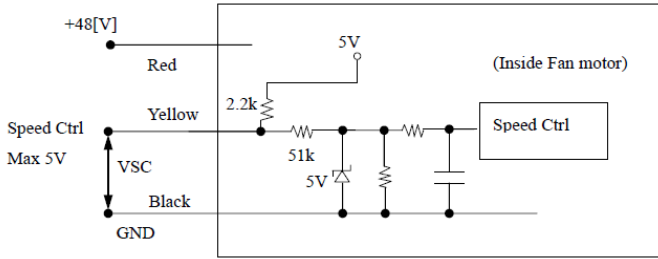
MODEL	Rated Voltage	Operating Voltage	Current		Input Power		Speed	Max. Air Flow <sup>*2</sup>		Max. Static Pressure <sup>*2</sup>		Noise	Mass
			Avg	Max	Avg	Max		(CFM)	(m³/h)	(in H <sub>2</sub> O)	(Pa)		
F175G1-061-D0750	(V)	(V)	(A) <sup>*1</sup>	(A) <sup>*1</sup>	(W) <sup>*1</sup>	(W) <sup>*1</sup>	(min <sup>-1</sup> ) <sup>*1</sup>					(dB) <sup>*1</sup>	(kg)
	48	36.0 ~ 54.0	3.2	6.0	153.6	288.0	5,100	534.4	908	4.07	1015	77.0	1.2

\*1: Values in Free Air

\*2: Attach Inlet-ring (NMB: IR12714)

## PWM Specifications

Connection wiring diagram



PWM Signal

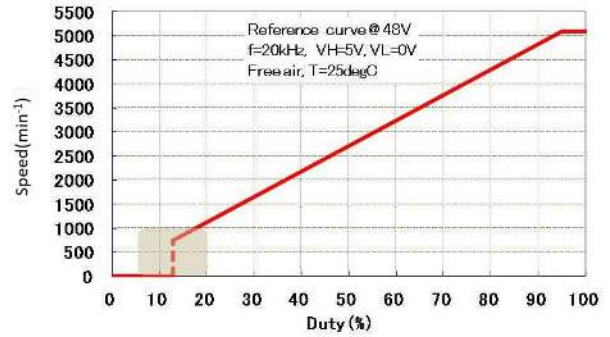
$$\text{Duty Rate} = (T_2/T) \times 100 [\%]$$

$V_{st} = 5 [V]$

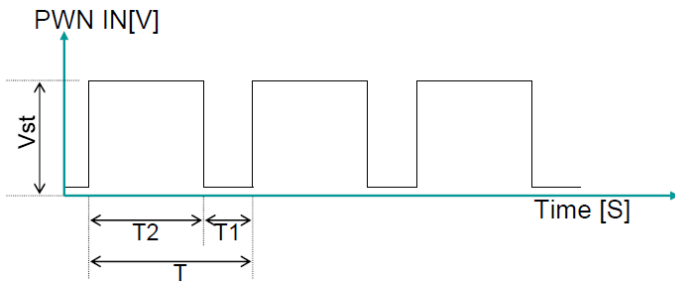
Frequency = 20kHz

$V_{st \text{ OPEN}} = \text{Full speed}$

## PWM Characteristic Curve

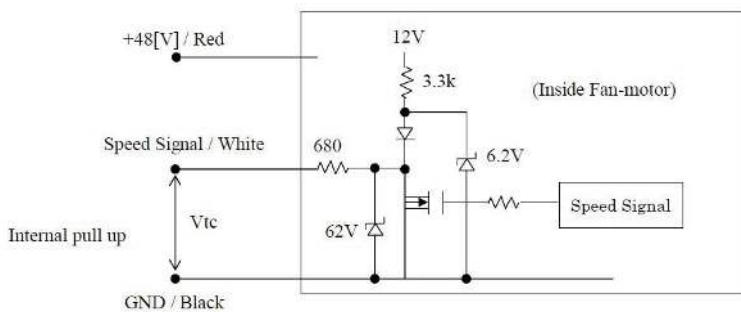


Start-up duty: min 30%



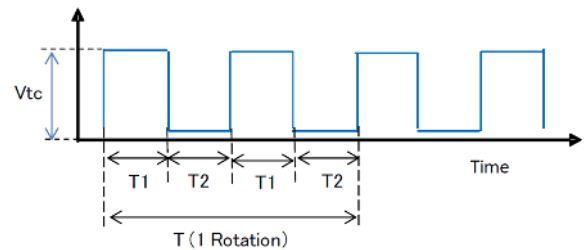
## TACHO Specifications

Connection wiring diagram



Output Waveform  
2 Pulse / Revolution

$T_1 = T_2 (50 \pm 10\% \text{Duty})$



## Outline



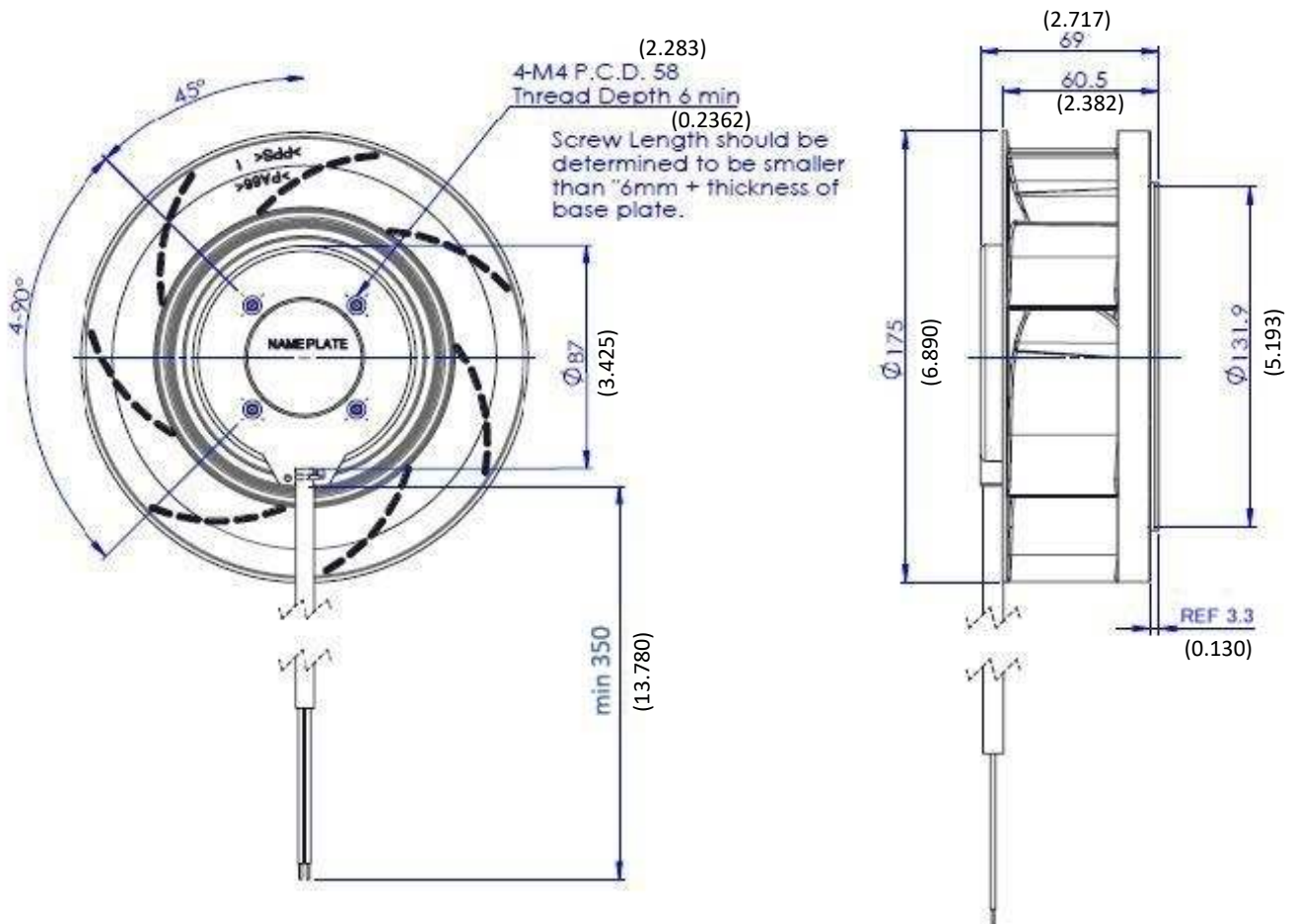
Product Label Drawing

## Material

Casing : Aluminum  
 Impeller : UL94V-O Reinforced Plastic  
 Bearing : Ball Bearing

Lead Wire : UL1430 or UL3266 AWG18 or 20  
 (+): Red (-): Black

UL1430 or UL3266 AWG18, 20 or 22 (PWM): Yellow (Tacho): White



Unit: mm ( inch)

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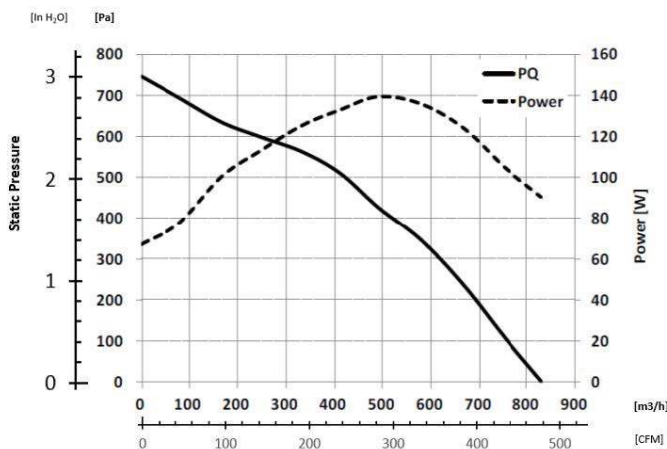
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## Characteristics Curve



## Specifications

MODEL	Rated Voltage	Operating Voltage	Current		Input Power		Speed	Max. Air Flow*2		Max. Static Pressure*2		Noise	Mass
			Avg	Max	Avg	Max		(CFM)	(m³/h)	(in H <sub>2</sub> O)	(Pa)		
F175G3-061-D0540	(V)	(V)	(A)*1	(A)*1	(W)*1	(W)*1	(min <sup>-1</sup> )*1	(CFM)	(m³/h)	(in H <sub>2</sub> O)	(Pa)	(dB)*1	(kg)
	24	18.0 ~ 27.0	3.7	8.5	88.8	204.0	4,200	476.7	810	2.97	740	73.0	1.2

\*1: Values in Free Air

\*2: Attach Inlet-ring (NMB: IR12714)

## IP Rated Fan Benefits & Applications

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- PWM Speed Control

### Applications

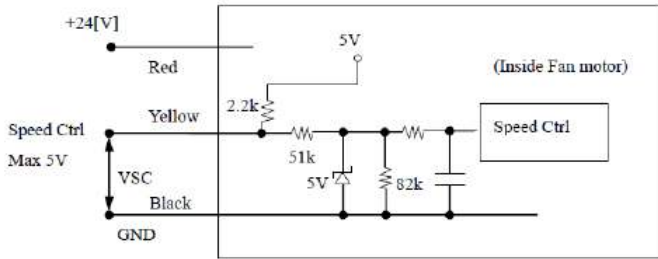
- Outdoor Applications
- Factory Automation
- Food Processing
- Inverters
- Telecomm
- Horticulture

## Life Expectancy L10

40°C 70,000 Hours

## PWM Specifications

Connection wiring diagram



PWM Signal

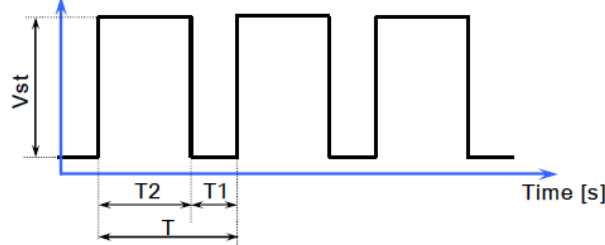
$$\text{Duty Rate} = (T2/T) \times 100 [\%]$$

$$V_{st} = 5 [V]$$

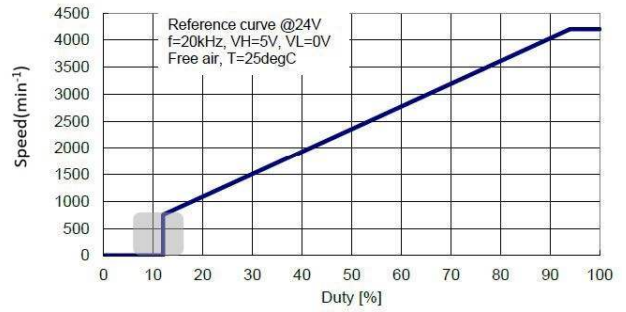
$$\text{Frequency} = 20\text{kHz}$$

$$V_{st \text{ OPEN}} = \text{Full speed}$$

PWM IN [V]



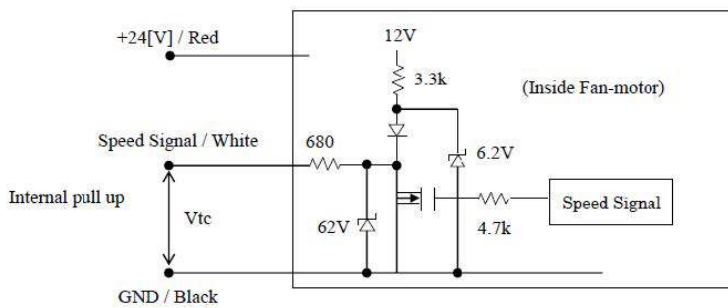
## PWM Characteristic Curve



Start-up duty: min 20%

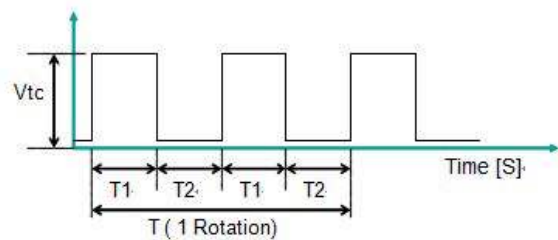
## TACHO Specifications

Connection wiring diagram

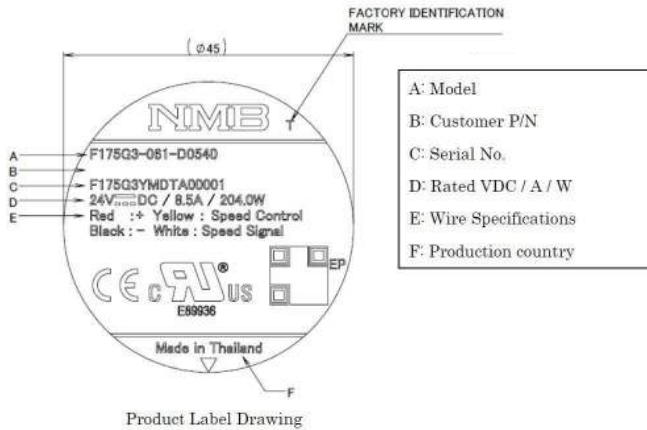


Output Waveform  
2 Pulse / Revolution

$$T1 = T2 (50 \pm 10\% \text{Duty})$$



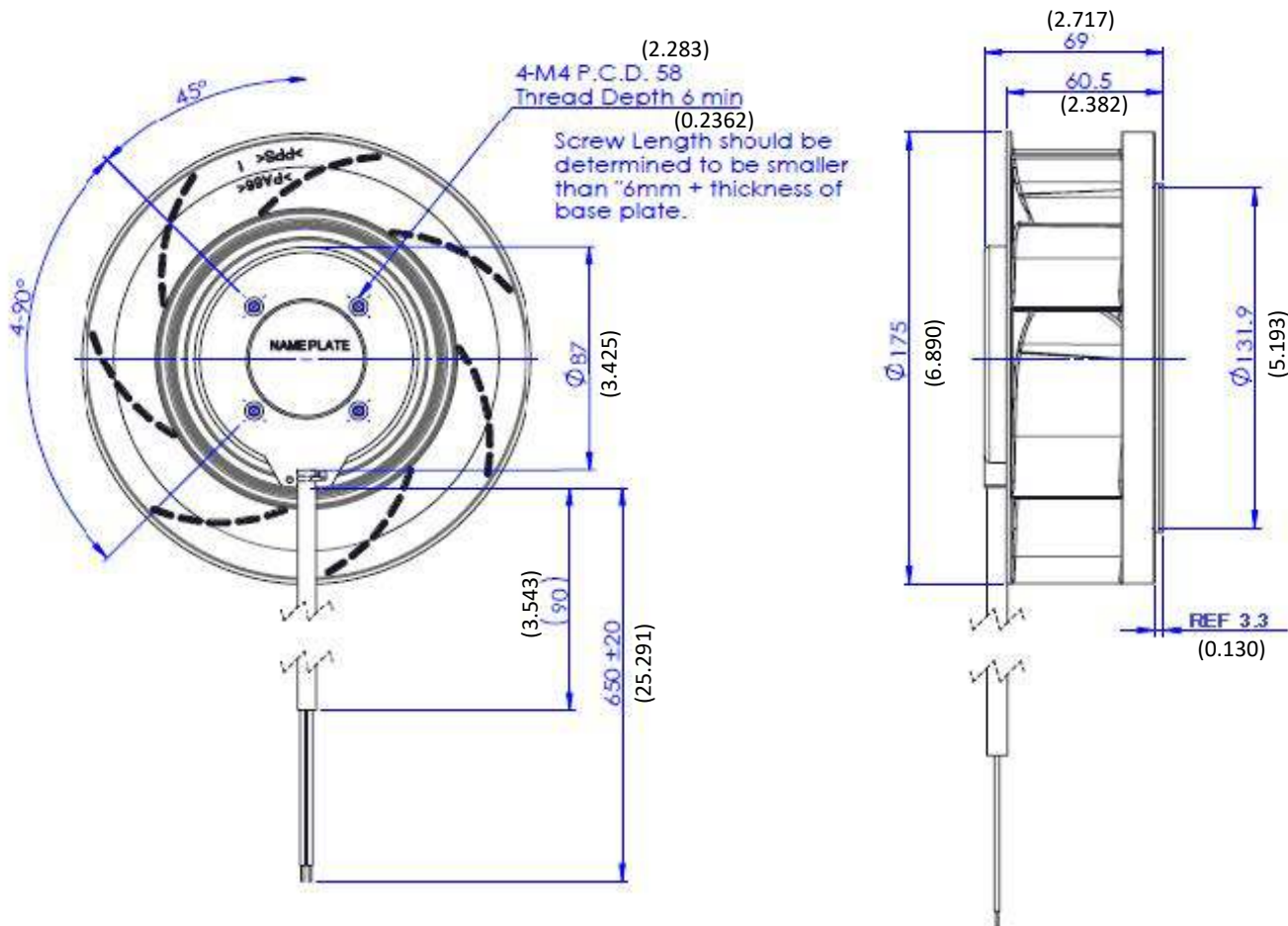
## Outline



## Material

Impeller : Plastic (UL94V-0)  
 Bearing : Ball Bearing  
 Lead Wire : AWG18, ULI430

(+) : Red (-) : Black (PWM): Yellow (Tacho): White



Unit: mm (inch)