DYNATRON CORPORATION

TOP MOTOR TECHNOLOGY(HUIZHOU)CO,LTD

Specification for Approval

Customer:	
Model Number:	DF129225PM-PWMG
Part Number:	
Issued Date:	Thursday October 27, 2009

Customer Approval	
Approval:	Check:

Corporate Headquarters ***Dynatron Corporation*** 41458 Christy Street, Fremont, California 94538, U.S.A. Tel: 510-498-8888 Fax: 510-498-8488	Manufactory ***TOP MOTOR TECHNOLOGY(HUI ZHOU)CO,LTD*** Baishi Village,QiuchangTown, Huiyang Dist,HuizhouCity,Guangdong Province,P.R.China Tel: 86-752-353-5591 (Rep.) Fax: 86-752-353-5592
Los Angeles Office (U.S.A.) 337 Paseo Sonrisa, Walnut, California 91789 U.S.A. Tel: 909-598-2222 Fax: 909-598-8158	*Taipei Office (Taiwan, R.O.C.)* 16F-1, No. 128, Dunhua S. Road, Taipei, Taiwan, R.O.C. Tel: 886-2-2700-0388 (Rep.) Fax: 886-2-2700-0389

Approval:	Check:	Initiator:
Simon_wang		Xu Yan

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1. SCOPE
   This specification defines the electrical and mechanical characteristics of the ☐ AC / ■ DC Brush less (☐Sleeve Bearing/ ■1-Ball Bearing / ☐2-Balls Bearing) axial flow fan, which is carefully designed and manufactured for your special needs by Dynatron Corporation.

2. ELECTRICAL CHARACTERISTICS

Items		Description		
1.	Rated Voltage	DC 12 V		
2.	Start Voltage	DC 7 V		
3.	Operating Voltage	10.8V ~ 13.2V		
4.	PWM Frequency 25KHz	Duty Cycle D=25 %	Duty Cycle D=50%	Duty Cycle D=100%
5	Air Flow – At rated voltage zero static pressure (minimal value)	0.43 m³ / min (15.1CFM)	0.88m³ / min (30.9CFM)	1.33 m³ / min (46.96CFM)
6	Static Pressure – At rated voltage At zero air flow	0.3mm-H2O (0.012 inch-H2O)	1.55mm-H2O (0.06 inch-H2O)	2.977mm-H2O (0.12 inch-H2O)
7.	Input Current	0.06A	0.1A	0.3A
8.	Operating Speed – For variable fan	900rpm. ± 200	1700 rpm. ± 10 %	2800 rpm. ± 10 %
9.	Input Power	0.72W	1.2W	3W
10.	Acoustical Noise	14dBA	19dBA	29.3dBA
11.	Insulation Resistance – Between Frame and Terminal	10 M ohm at DC 500 V		
12.	Dielectric Strength – Between Frame and Terminal	5 mA (Max.) @ AC 500 V 60 Hz 1 min.		
13.	Life – Continuous operating under normal temperature (40 °C or 104 °F)	70,000 hours		
14.	Lead Wires	UL 1007, awg 28or Equivalent “-“: Black; “+”: Yellow ”s” Green ”p” Blue;		

3. MECHANICAL CHARACTERISTICS

Items		Description
1.	Dimension	Display as Drawing
2.	Frame	PBT+30%GF UL94V-0 (Black)
3.	Impeller	PBT+15%GF UL94V-0 (Black)
4.	Bearing System	One ball Bearing
5.	Weight	83±5grams

4. ENVIRONMENTAL

Items		Description
1.	Operating Temperature	- 10 °C ~ + 65 °C (65 %RH)
2.	Storage Temperature	- 30 °C ~ + 70 °C (65 %RH)
3.	Vibration Test	Motor withstands 1000 rpm vibrating with 2 mm amplitude for 30 minutes up and down, right and left, back and forth directions.
4.	Drop Test	Motor withstands one free body drop from 30 cm in high onto 10 mm thickness of wooden board for each of the three faces in minimum packing condition.
5.	Acoustic Noise	14 / 19 / 29.3dBA – Curve (Max 14.5/19.5/29.8dBA) Measuring Condition – Under rated voltage in semi-anechoic chamber equipment sound level meter. (Figure A.)

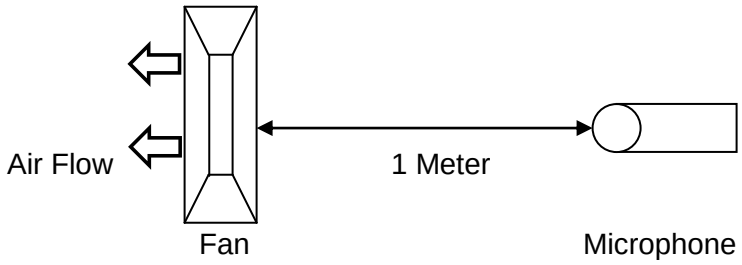

Figure A – Noise Level is measure at rated voltage in anechoic chamber in free air as above.

5.PROTECTION

Items		Description
1.	Polarity Protection	For polarity error connection to power, the circuit withstands reversed connection between positive and negative leads.
2.	Locked Rotor Protection	Motor winding protects the motor from damage in 72 hours of locked rotor con dition at rated voltage.

6.ATTACHMENTS

a. Product Dimension

b. Electrical Specifications for pwm production

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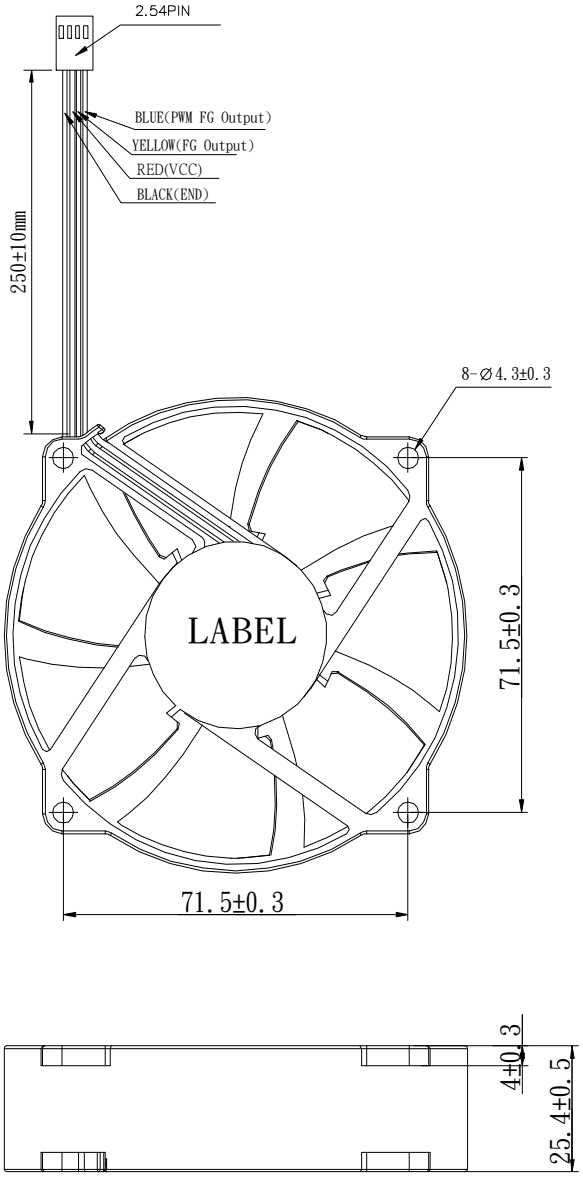
DIMENSIONS:



UNIT:MM

1.LEAD WIRE:1007 #28AWG 80°C 300V UL,CSA APPROVAL

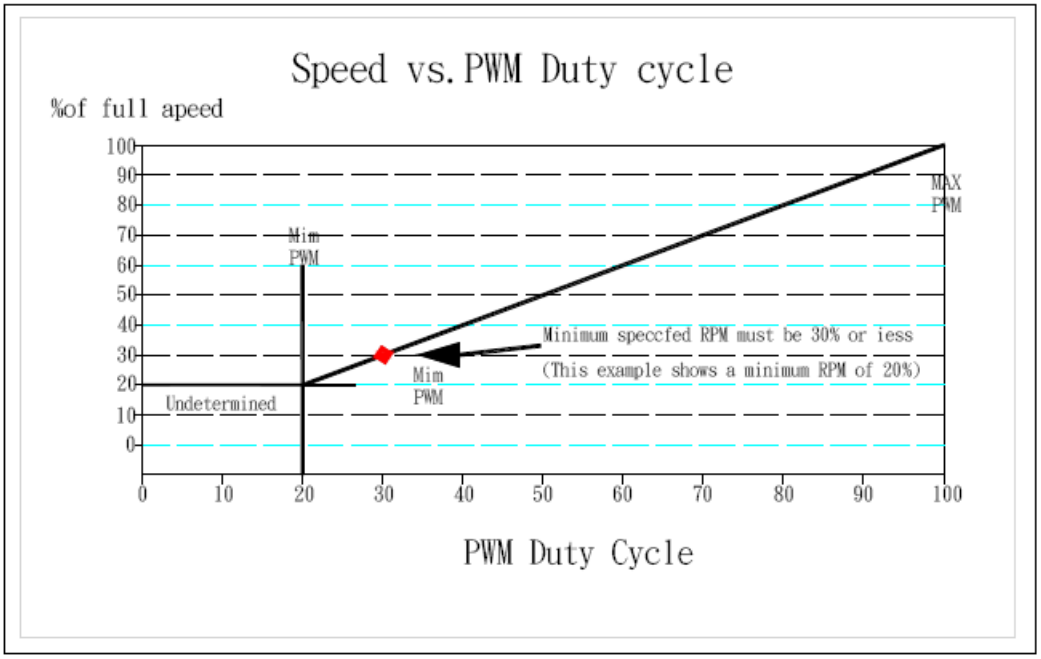
TOP MOTOR TECHNOLOGY (HUIZHOU)CO,LTD	DF129225XX		Tolerance	Vide Supra	Approval	Wang hui
			Unit	mm	Check	Cai chao
			Edition	1.0	Initiator	Ling chao
	Drawing Type	Dimensions	Remark		Date	2009.10.27

USA Dynatron Corp.

1.3 Fan Speed Response PWM Control Input Signal

The PWM input shall be delivered to the fan through the control signal on Pin4.Fan speed response to this signal shall be a continuous and monotonic of the duty cycle of the signal,from 100% to the minimum specified RPM. The fan RPM (as a percentage of maximum RPM)should match the PWM duty cycle within ±10%.If no control signal is present the fan shall operate at maximum RPM.

Figure 1 Fan speed Response to PWM Control input Signal



1.4 Operation Below Minimum RPM

For all duty cycles less than the minimum duty cycle ,the RPM shall not be greater than the minimum RPM. The floolw ing graphs and definitions show three recommended solutions to handle PWM duty cycles that are less than the minimum operational PRM,as a percentage of maximum.

Reference resource by Intel's 4-wire PWM Fan controlled specification.