

SPECIFICATION FOR APPROVAL

CUSTOMER : Headlight

MODEL NO : 4020(DC Brushless Fan)

PART NO : FD1340-D0153D

DATE : 2015.08.03

CUSTOMER APPROVAL

ARX GROUP and ARCera EU

Approved	QC	Checked	Checked	Prepared
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1. SCOPE

This document is a specification defining the electrical and mechanical characteristics of the product.

2. ELECTRICAL

	Item	Specification	Test Condition
1	Rated Voltage	13.5V	DC power supply
2	Rated Current	0.20 Amp (Typical) Max0.24 Amp(SafetyRegulation)	DC power supply at Rated Voltage This is for Safety Regulation.
3	Rated Power	2.7 W	At Rated Voltage.
4	Operating Voltage	7V – 16V	DC power supply
5	Auto restart function	1 Sec. ON , 5 Sec. OFF cycling	At Rated Voltage when Rotor Locked
6	Insulation Resistance	10MΩ (Min.)	Input 500V(DC) between Lead wire(+) and housing
7	Speed	9300 RPM ±10%	Measured at 5 minutes after starting under 25±5°C, 65±5%RH ambient
8	Acoustical Noise	33.71 dB(A) (measurement tolerance ± 2 dBA)	Measured at typical speed with an acoustic microphone 1 meter away from the fan intake in a test chamber with background noise level below 18dB(A) under ISO-3745 Standard, refer to NOISE MEASUREMENT ITEM 7.
9	Static Pressure	7.51 mm-H ₂ O (0.30 inch-H ₂ O)	Refer to PERFORMANCE CHART ITEM 9 at zero airflow. This measurement is performed AMCA 210-99 Standard.
10	Air Flow	13.09 CFM (0.39CMM)	Refer to PERFORMANCE CHART ITEM 9 at zero static Pressure. This measurement is performed AMCA 210-99 standard.
11	Direction of rotation	Counter- anticlockwise	DC power supply, viewed from impeller.

3. MATERIAL

Impeller	PBT UL94-V0
Frame	PBT UL94-V0
Bobbin	PBT UL94-V0
Lead Wire <input checked="" type="checkbox"/> + : Red <input checked="" type="checkbox"/> - : Black <input type="checkbox"/> : PWM <input checked="" type="checkbox"/> O/P: <input type="checkbox"/> Blue <input checked="" type="checkbox"/> Yellow	UL 3239AWG <input type="checkbox"/> 24 <input type="checkbox"/> 30 <input type="checkbox"/> 26 <input type="checkbox"/> 32 <input checked="" type="checkbox"/> 28

3. MECHANICAL

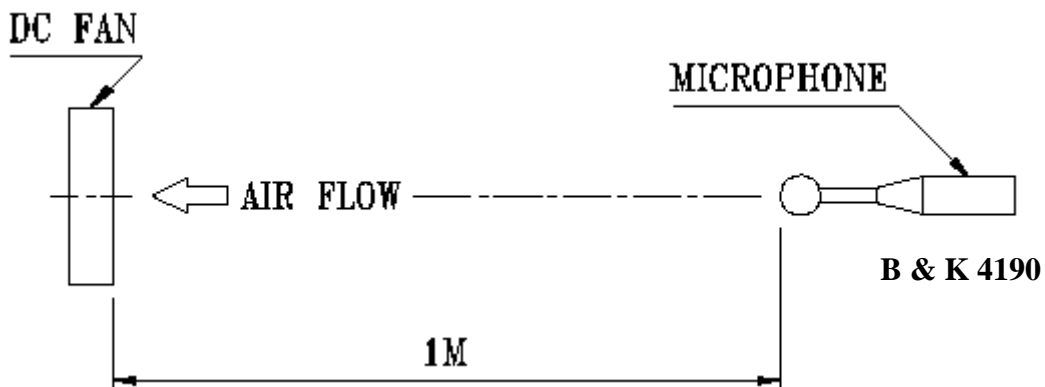
Dimensions	L * W * H =40*40*20(mm)
Weight	24 grams
Standard operating temperature range	-40 °C ~ +135 °C
Standard storage temperature	-40 °C ~ +135 °C
Bearing system	<input checked="" type="checkbox"/> Two Ball Bearing

5. EXPECTED LIFE SPAN – L10

At a standard operating condition of 135±5°C, 65±5%RH ambient, the expected life (expressed as first 10% to failure – L10)

Two Ball Bearing : 18,500 hours under continuous operating temperature +135°C 65% RH

6. SOUND MEASUREMENT :

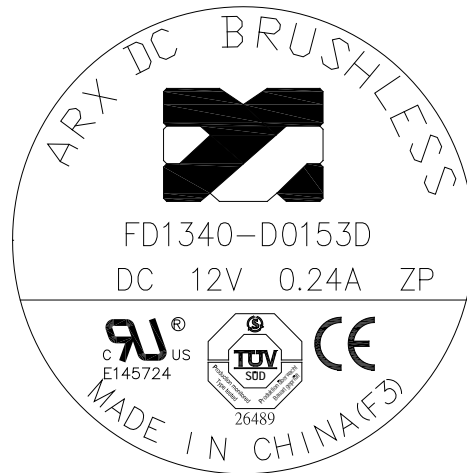


Noise is measured under Rated Voltage in free air in the anechoic chamber with B & K Nexus 4350 conditioning amplifier, with B & K 4190 microphone at a distance of one meter from the fan intake. The background noise is 18dBA max under the ISO-3745 Standard.

7. RELIABILITY

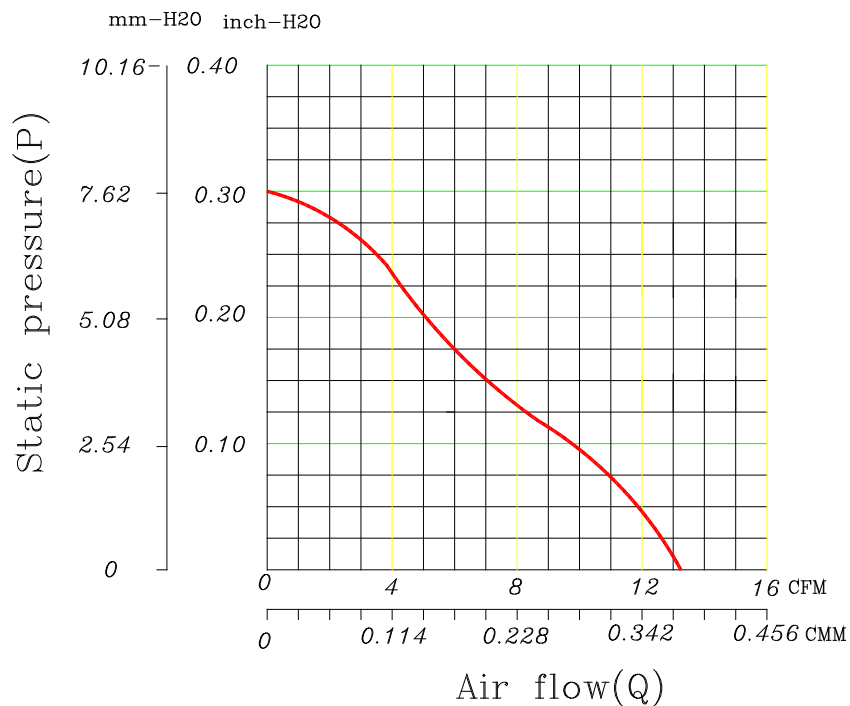
	Item	Specification	Test Condition
1	Locked Rotor Test	Flameproof and damage free	Rotor locked for 72 hrs with Rated Voltage
2	Reverse Voltage Test Protection	Yes	Reverse 15 min with Rated Voltage
3	Balance Test	No protruding beyond the circle within 10 seconds	The fan runs in a circle, scaled by fan radius plus 20mm, on a perfectly smooth plate for 10 seconds under the ISO 1940 G6.3 grade Standard.
4	Drop Test	All specified characteristics remain unchanged	Drop D.U.T.(The standard packing) from the test machine at 76cm below. Individual one angle, three diagonal corners and six planes under the IEC 68-2-31 Standard.
5	Vibration Test	All specified characteristics remain unchanged	Ambient temp. : 25 °C±5 °C with Rated Voltage Amplitude : 0.4-2.5 mm Acceleration : 14.7 S/m ² Frequency : 10HZ-60HZ Sweeping period : 11 min 10HZ-60HZ : 10 min 60HZ-10HZ : 10 min Total : 10 cycles This test is under the IEC 68-2-6 Standard.
6	High/Low Temperature Cycling	All specified characteristics remain unchanged	20 minutes slew rate +135°C (12 hr) , -40 °C (12 hr) Total : 25 cycles with Rated Voltage This test is under IEC 68-2-38 Standard.
7	Low Temp. Test	All specified characteristics remain unchanged	Tested under standard condition ; after 500hrs, -40 °C, with power supply. This test is under IEC 68-2-1 Standard.
8	High Temp. Test	All specified characteristics remain unchanged	Tested under standard condition ; after 500hrs, +135 °C, with power supply. This test is under IEC 68-2-2 Standard.
9	Hi Pot Test	All specified characteristics remain unchanged	Input 500V(AC) for 1 min between lead(+/-) and housing. This test is under CNS-C6013 Standard.

8. PRODUCT LABEL

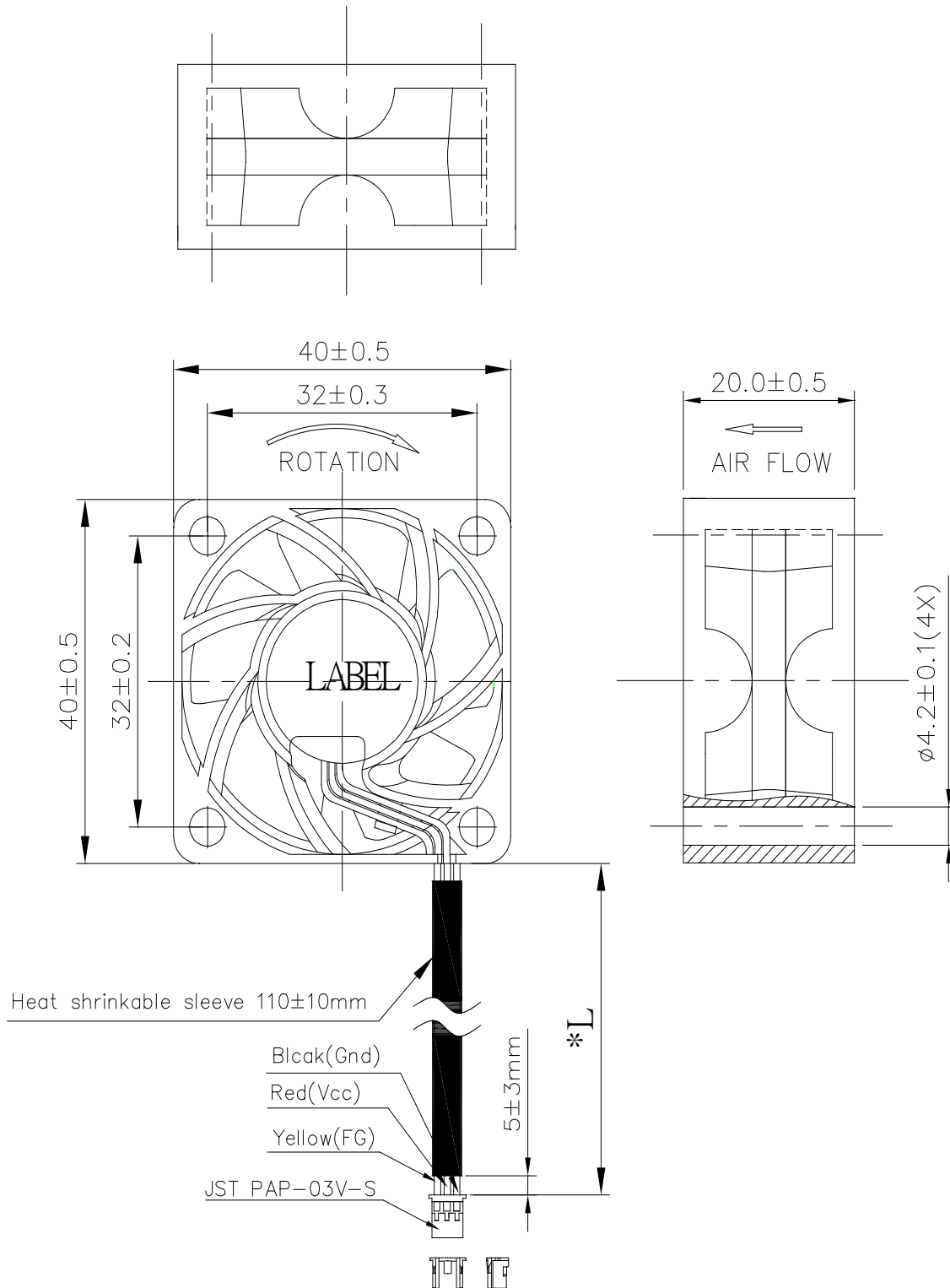


9. PERFORMANCE CHART

This measurement is according to the AMCA 210-99 Standard.
 PQ curve for FD1340-D0153D under Rated Voltage.



10. ASSEMBLY DIAGRAM

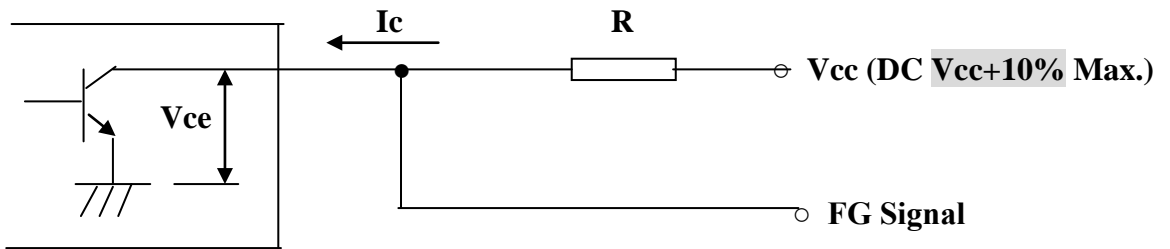


Note :

1. L^* : Lead wire length : $120\text{mm} -0/+10\text{mm}$ (From frame edge)

11. FREQUENCY GENERATOR (FG) SIGNAL Output :

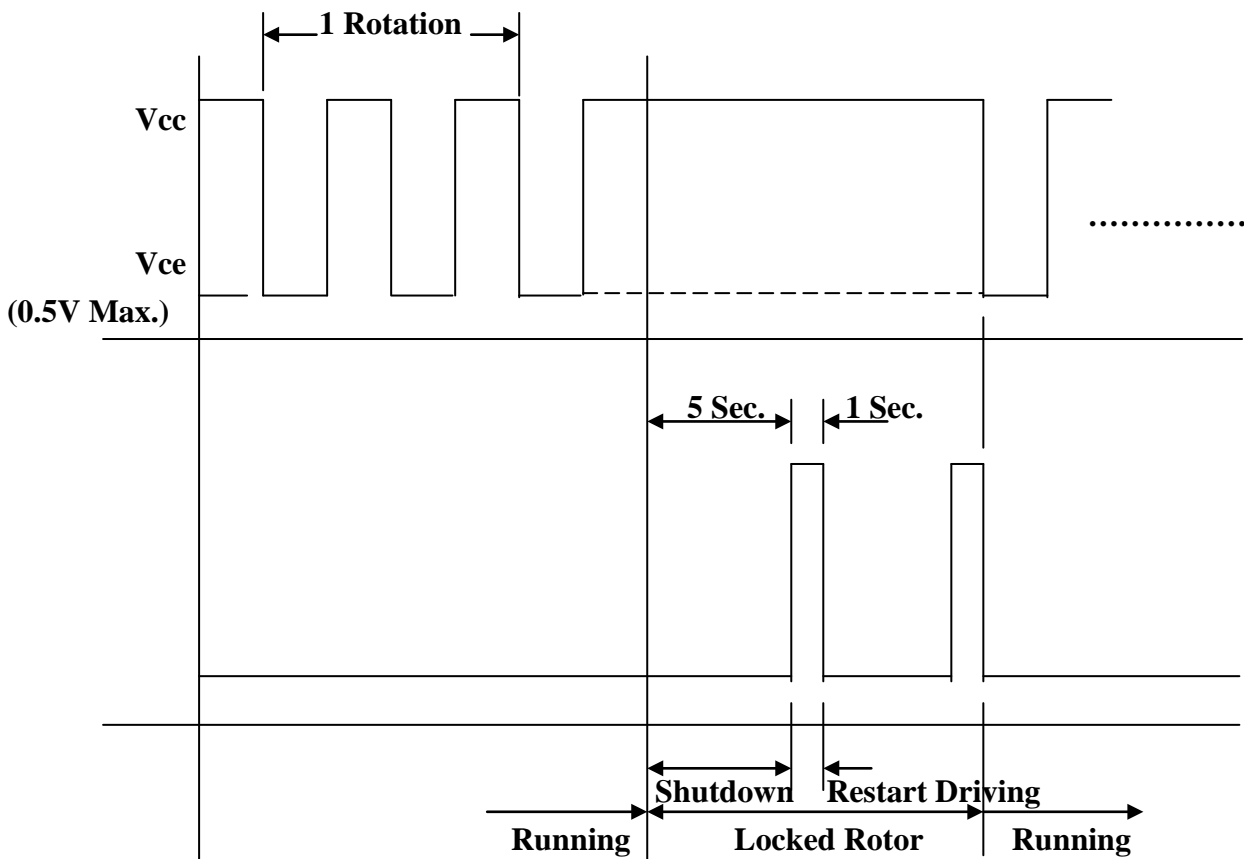
11.1 Output circuit : Open collector mode



11.2 $R=V/I$ (Out "R" value can be got by calculating)

11.3 Specification : $I_c=5\text{mA Max.}$

11.4 Frequency Generator Waveform :



12. ORDERING AND OPERATING REMARKS

12.1 Please indicate complete part number with its extension on every order.

12.2 ARX does not guarantee the product if applications exceed specified limitations.