SPECIFICATION FOR APPROVAL

CUSTOMER	**:**	
DESCRIPTION	**:**	**AXIAL AC FAN**
DIMENSIONS	**:**	**119x119x38mm**
M O D E L	**:**	**GA1123XSL**
APPROVED NO (AUTHORIZED)	**:**	
APPROVED BY	**:**	

KYOTTO® SOLID STATE RELAY
凱優特有限公司
KYTECH ELECTRONICS,LTD.
地址: 桃園市平鎮區復旦路四段131巷68號
TEL:886-3-4930055 FAX:886-3-4922455
統一編號: 84931936

AXIAL AC FAN

MODEL : GA1123XSL

CHARACTERISTICS

1. Motor Design	**:**	**Shaded Pole, Impedance Protected.**
2. Insulation Resistance	**:**	**500Megohms minimum at 500 VDC.**
3. Dielectric Strength	**:**	**1500 VAC for one minute.**
4. Motor Protection	**:**	**Thermal protected＆Class B**
5. Noise Level	**:**	**Measured in a semi-anechoic chamber with background noise level below 15 dB(A). The fan is running in free air with microphone at a distance of one meter from the fan intake.**
6. Air Performance	**:**	**Measured by a double chamber. The value are recorded when the fan speed is stabilized at rated voltage.**
7.Tolerances	**:**	**±15% on rated power and current.**

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SPECIFICATIONS

MODEL: GA1123XSL

1-1. Rated Voltage	:	**115VAC 50/60hz**
1-2. Operating Voltage Range	:	**95-130VAC**
1-3. Starting Voltage	:	**85VAC**
1-4. Rated Speed	:	**2700/3000RPM**
1-5. Air Delivery	:	**112/120CFM**
1-6. Static Pressure	:	**0.27/0.30 Inch-H_2O**
1-7. Rated Current	:	**0.25/0.19AMP**
1-8. Input Power	:	**18/19WATTS**
1-9. Noise Level	:	**40/45db(A)**
1-10. Direction of Rotation	:	**Counter-clockwise viewed front fan blade**
1-11. Operating Temperature	:	**-10 to +70Deg.C**
1-12. Storage Temperature	:	**-30 to +70Deg.C**
1-13. Bearing System	:	**Precise sleeve bearing system**
1-14. Weight	:	
1-15. Vibration	:	**Vibration of acceleration 1.5G and Frequency 5~50~5Hz is applied in the 3 directions(X,Y,Z) for 30 minutes, each Direction at the cycle of 1 minute.**

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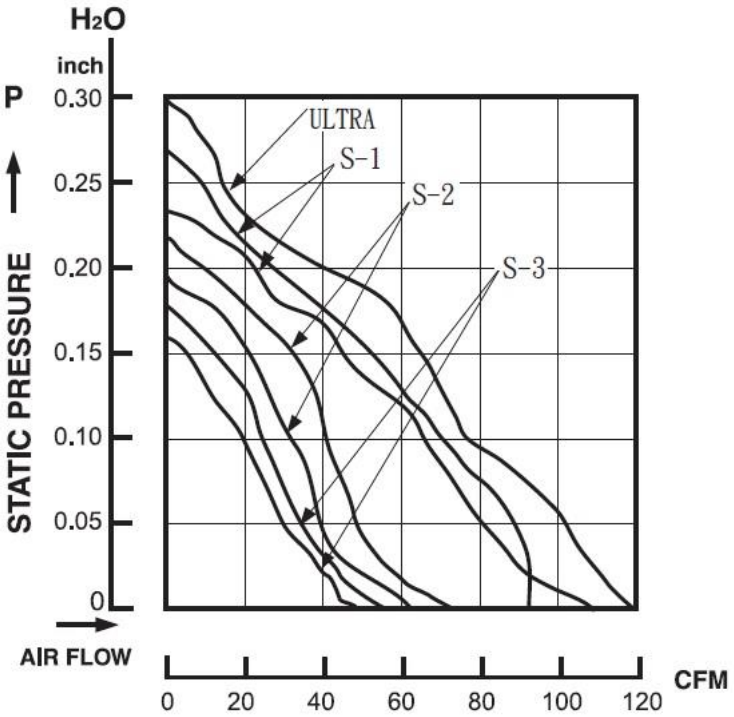
MODEL : GA1123XSL

PERFORMANCE CURVES 50Hz



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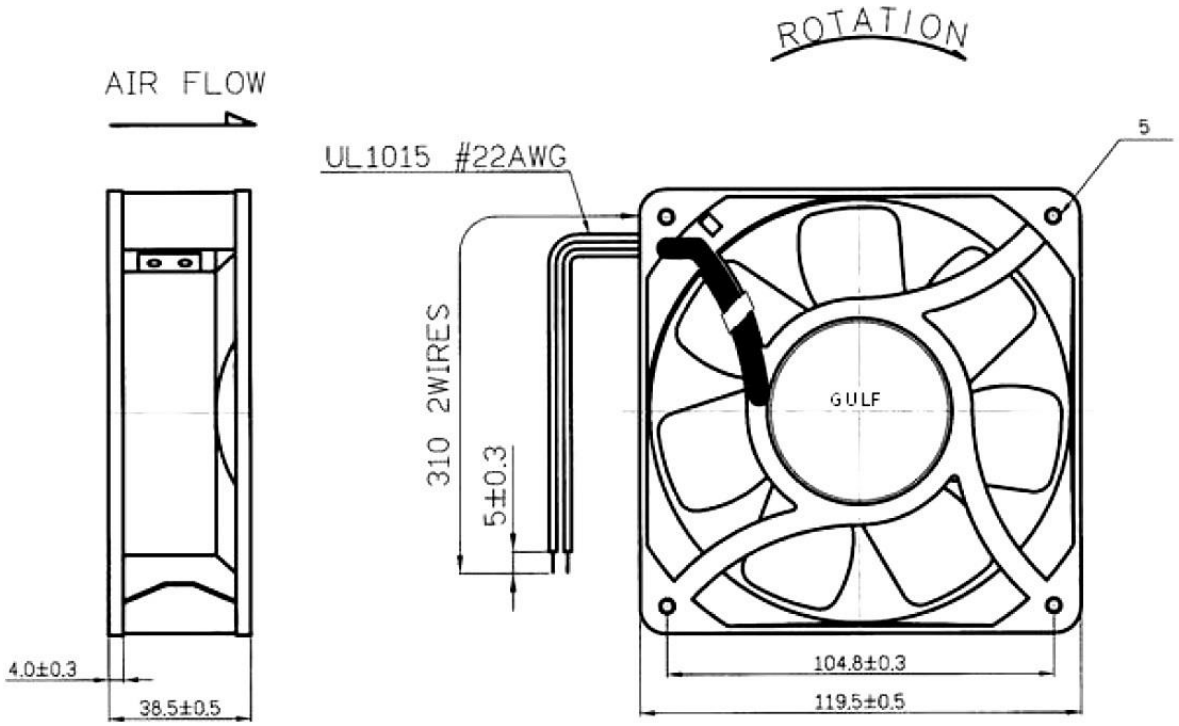
MATERIAL

2. Material

2-1. Frame : DIE-CAST ALUMINUM

2-2. Impeller : PLASTIC



Air Flow Direction: Label side.

UNITS : mm

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Notes

1. **This fan must be installed properly and securely. Improper mounting may cause harsh resonance, vibration, and noise.**

2. **Do not use or operate this fan in excess of the limitations set forth in this specification. GULF is not be responsible for the non-performance of this fan and / or any damages resulting from its use, if it is not used or operated in accordance with the specifications.**

3. **All changes, modifications and/or revisions to the specifications of this fan, if any, are incorporated in the attached specifications.**

4. **GULF recommends that you protect this fan from exposure to outside elements, such as dust, condensation, humidity or insects. GULF doest not warrant against damage to the product caused by outside elements.**

5. **Do not store this fan in an environment with high temperature and high humidity.**

6. **We highly recommend functional testing before using, if this fan is stored for**

7. **Fan guards may prevent injury during handling or installation of the fan.**

8. **Unless otherwise noted, all testing of this fan is conducted at ambient temperature 65%.**

9. **Use proper care when handing and/or installing this fan. Improper handling or cause damage that could result in unsafe conditions.**

10. **The " Life expectancy" of this fan has not been evaluated for use in combination with any end application. Therefore, the Life Expectancy test Reports, both L10 and MTTF report, are only for reference.**

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E-mail:kyotto@kyotto.com http://www.kyotto.com
３２４桃園縣平鎮市復旦路四段 131 巷 68 號

AC FAN LIFE EXPERIMENT REPORT

Representative Test P/N:GA1123XSL						
BEARING	VOLTAGE	CURRENT	SPEED	TEST TEMPERATURE		TEST VOLTAGE
SLEEVE	110V AC	50Hz:250mA /60Hz 190mA	50Hz 2700RPM /60Hz 3000RPM	Tu : 50℃	Ts :75 ℃	110V AC/ 60Hz
Instruments used:1.High Temp. Chamber 2.AC Source:IP60-30DT						On 29.5 min / Off 0.5 min

■L_{10}Expectancy:19000 hours minimum at fan rated voltage and the temperature of 40℃

1.According to the equation of product accumulation failure rate,

◎ 10%=1-e- λt ◎ t→L_{10} ◎L_{10}=0.10536/ λ ◎MTTF=1/ λ

◎MTTF/L_{10}=(1/ λ)/(0.10536/ λ)≒9.5 So we get the result,MTTF≒9.5xL10

2.According to the equation for **Arrhenius Model**

$$A_F=e^{(\triangle H/K)T=e^{\{(\triangle H/K)x[(1/Tu)-(1/Ts)]\}}$$

where, A_F is acceleration factor, **e** is natural logarithm (2.713), **△H** is activation energy,

K is Boltzmann's constant($8.623x10^{-5}$ eV/ °K), **T** is absolute temperature(°K),

Tu is unstress temperature(°K), **Ts** is stress temperature(°K), and the confidence level is equal to 0.90(90%)

Stress/Elevated Temperature Ts(℃)	Unstress Temperature Tu(℃)	Acceleration Factor A_F	Quantity of Test Devices n(pcs)	Test HRS/EA (hours)	Verified MTTF (hours) at40℃	Verified L_{10} (hours) at40℃
75℃	50℃	**1.88**	150	1,500	**183,706**	**19,337**

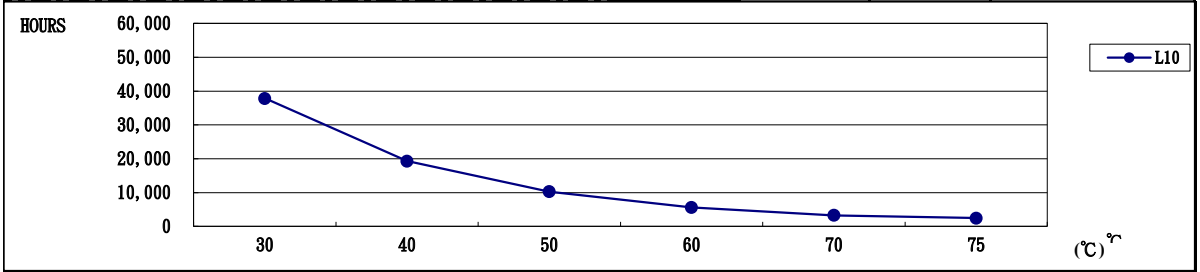
Test Progress:

Date for Test Beginning	Date for Test Termination(at least)	Current Test Status			Total Test Time (hours)
2022.12.01 10:00	2022.12.31 17:00	☐ In process	☐ In process (exceed requested)	■ Termination	**225,000**

Herewith , we could assume as right on the basis of above test result, Besides, if the actual test time exceed the required, it comes out that those fans L10 expectancy and MTTF are greater than the warrant. (**MTTF** : means Mean Time To Failures, it should be used in a non-repairable system setting. Now we show the MTTF in our life report, that's because we will not repair the failed fans during life experiment. **MTBF**: means Mean Time Between failures, it should be used in a repairable system setting. **Basically, MTBF is equal to MTTF , they use same formula to work out a life data.)**

Fail Definition:
1. For current, the limit is more than spec.(max.)
2. For speed, the allowable descrease is more than 15%.
3. For noise, the limit is more than spec.(max.). + 3 dB

Temperature For MTTF Estimation (℃)	Acceleration Factor A_F	Estimated MTTF(hours)	Estimated L_{10}(hours)
30	**3.68**	**359,595**	**37,852**
40	**1.88**	**183,706**	**19,337**
50	**1.00**	**97,716**	**10,286**
60	**0.55**	**53,744**	**5,657**
70	**0.32**	**31,269**	**3,291**
75	**0.24**	**23,452**	**2,469**



QA File No.	Issued Date	Reported By	Approved By
RT40720	**2023.01.12**	**sophia yang**	**steve mai**