



APPROVAL SHEET

MODEL NO.: 9R272B1H3

FAN MODEL NO.: SP06010B1H3

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Checked by Warren	Drafted by Vincent
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Spire Corp.

Tel.: +86-775-33823311 Fax: +86-775-33823314

[Http:// www. Spirecoolers.com](http://www.Spirecoolers.com)



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1. COMPONENT LIST

Item	Part Name	Part No.	Quantity	Material	Description
1	HEAT SINK	01CU272B	1	METAL	C1100
2	CLIP	03CM015	1	METAL	SUS301
3	FAN	SP06010B1H3	1	PLASTIC	PC



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2. DESCRIPTION AND PRODUCT DRAWING



Picture 1 : Top view



Picture 2 : Side view



Picture 3 : Bottom view

(1) Description

This thermal solution is intended for use on Intel P4 processors.

This document is a specification for defining this thermal solution.

(2) Thermal resistance

$R_j = 0.431^{\circ}\text{C/W}$ (RPM=4800)



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3. ASSEMBLY DRAWING

MATERIALS

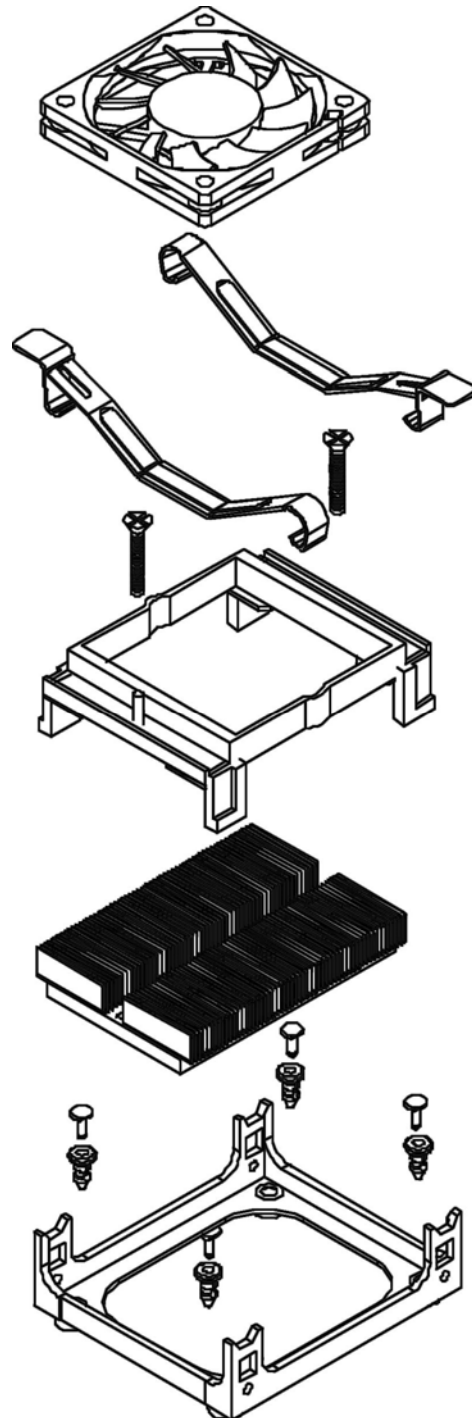
- 3.1 HEAT SINK: 01CU272B
- 3.2 FAN: SP06010B12
- 3.3 CLIP: 03CM015
- 3.4 SCREW: 03SW045

Electrical Performance

- OPERATING VOLTAGE RANGE
= 10.2-13.8 VDC
- RATED SPEED = 4800RPM $\pm 10\%$
- RATED POWER = 3.36W
- $R_j = 0.431^{\circ}\text{C/W}$ (RPM = 4800)

Mechanical Characteristics

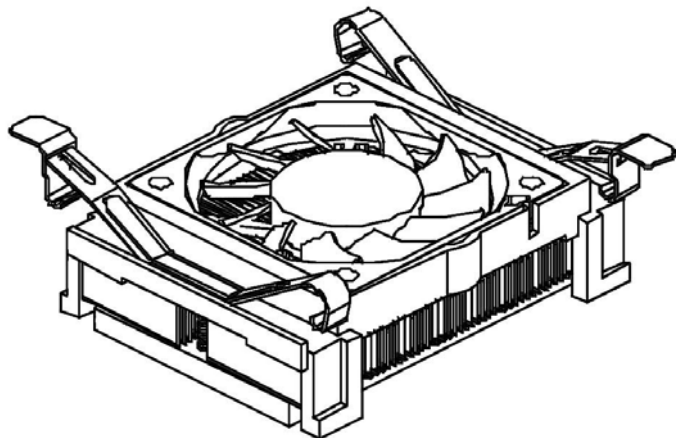
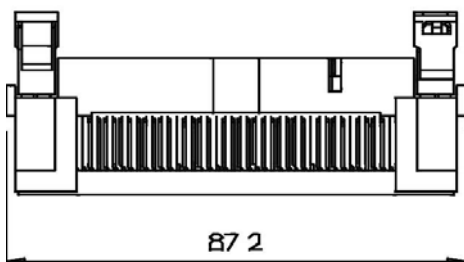
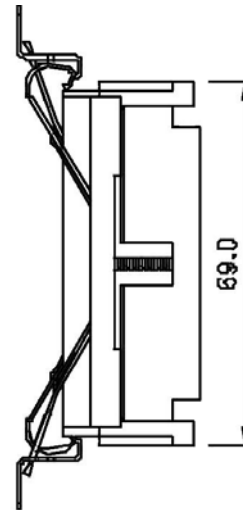
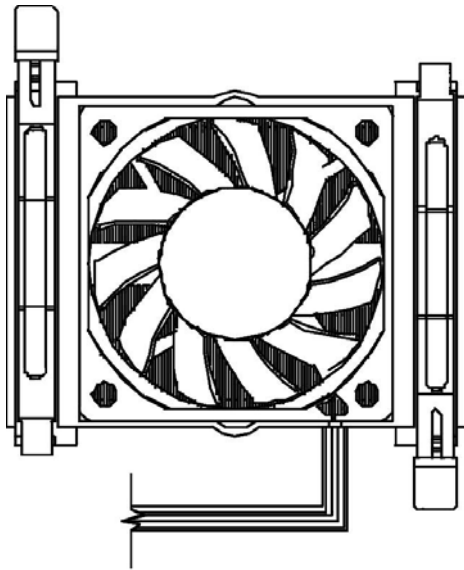
- NOISE LEVEL = 30 dB(A)
- OPERATION TEMPERATURE
= -10~70 Deg. C
- COOLER WEIGHT = 380g





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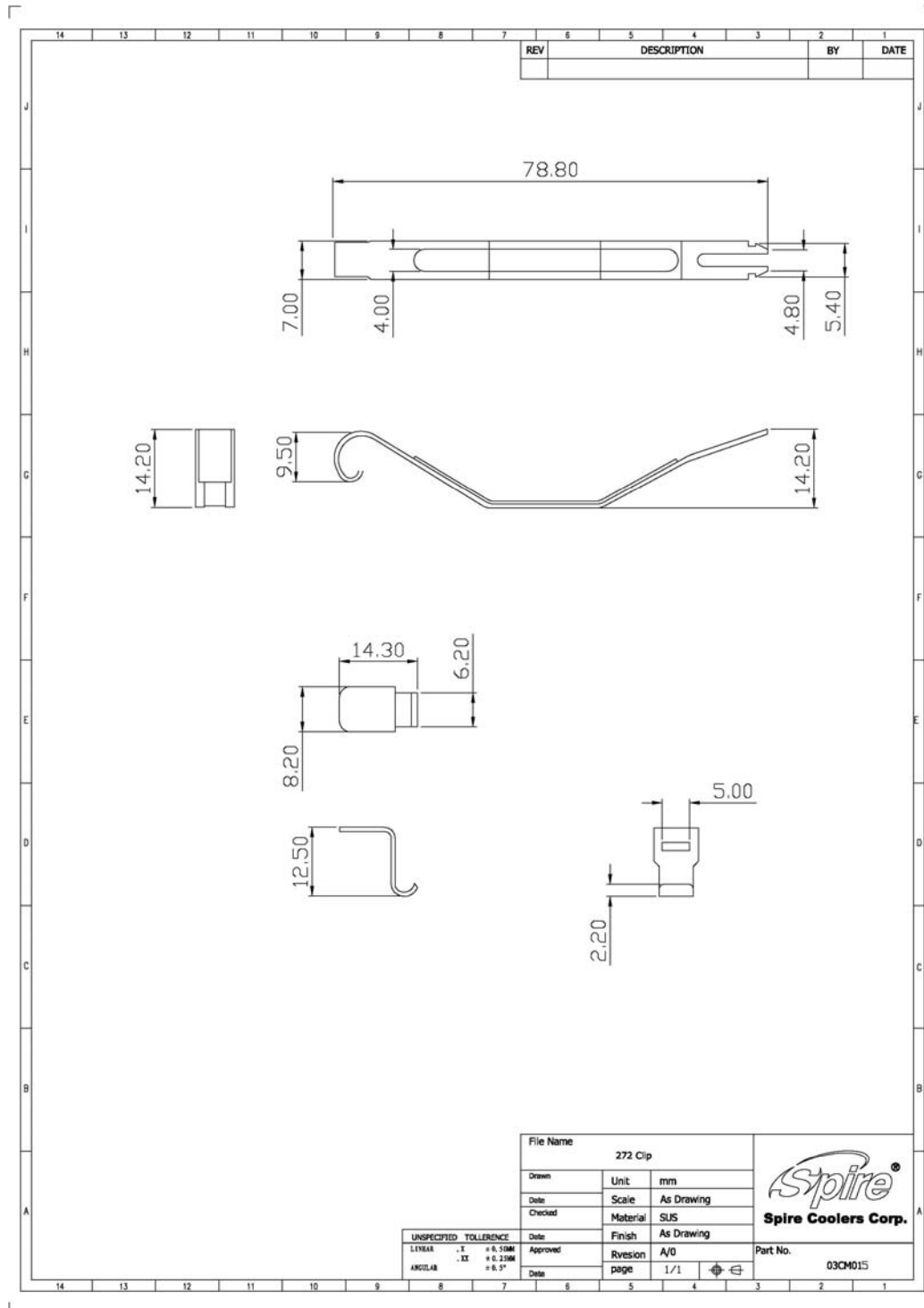
3.1 HEAT SINK



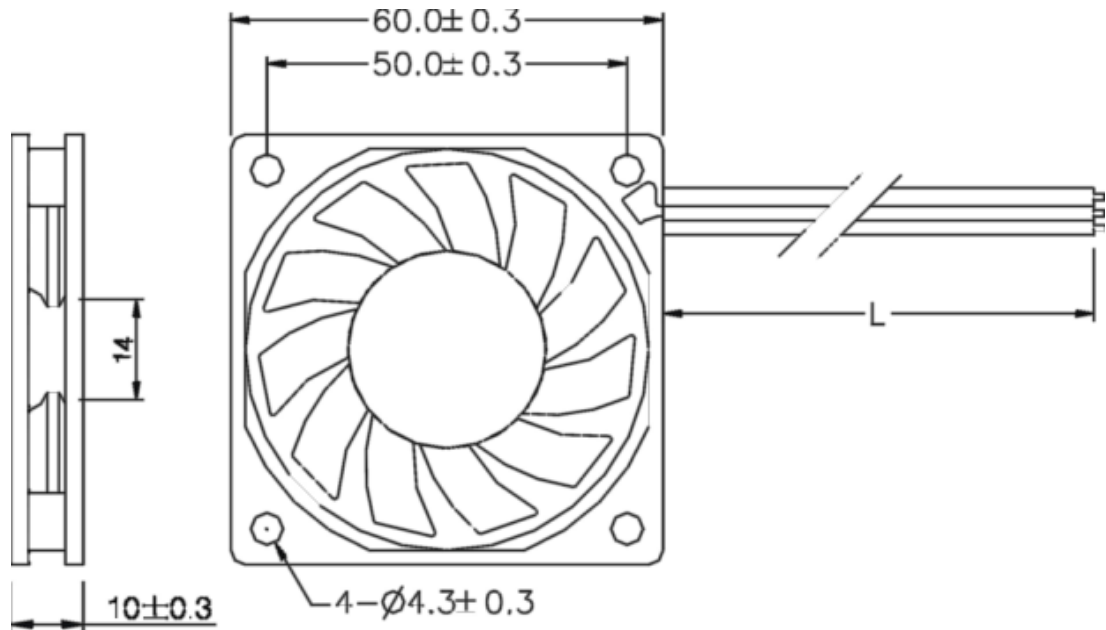


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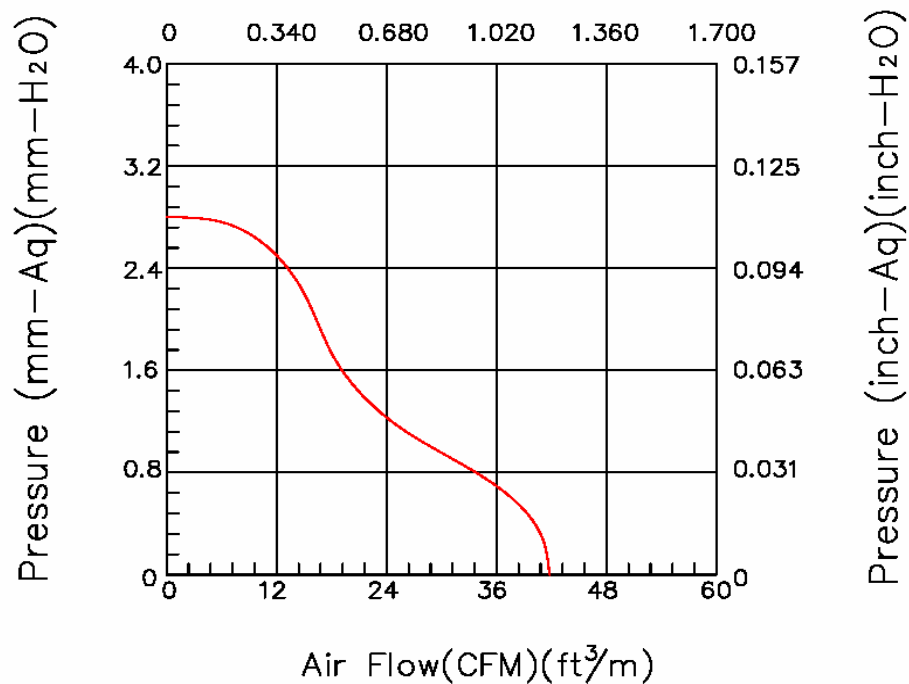
3.2 CLIP



3.3 SP06010B1H3



4. CHARACTERISTIC CURVES





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5. FAN SPECIFICATIONS

FAN MODEL: SP06010B1H3

1. Rated Voltage	: 12VDC
2. Operating Voltage Range	: 10.2 ~13.8VDC
3. Rated Speed	: 4800RPM ±10%
4. Static Pressure	: 3.99 mm-H₂O
5. Air Flow	: 22.21 CFM
6. Rated Current	: 0.28 AMP
7. Rated Power	: 3.36 WATTS
8. Noise Level	: 30 dB(A)
9. Operating Temperature	: -10 to 70 Deg. C
10. Storage Temperature	: -40 to 70 Deg. C
11. Bearing System	: Ball Bearing
12. Connector	: 3 pin
13. Weight	: 30 g
14. Life warranty	: 50000 hours



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RoHS

SGS

Test Report No: GZ0804050143/CHEM Date: APR 20, 2006 Page 1 of 3

FANNER TECH (SHENZHEN) CO., LTD.
BLOCK 13, SAN LIAN INDUSTRIAL AREA, LONGHUA TOWN, SHEN ZHEN CITY

Report on the submitted sample said to be COOLER CPU DR VGA: ①ALUMINIUM, ②COFFER, ③BACKBOARD,
④PLASTIC CLIP, ⑤PLASTIC CLIP SLEEVE, ⑥PC, ⑦PVC, ⑧FOAM COTTON, ⑨FIBERGLASS SLEEVE,
⑩BOX, ⑪THERMAL PASTE, ⑫CARTON, ⑬DESCRIPTIN, ⑭FIBULA

SGS Ref No. : SZ060417469RS
Sample Receiving Date : APR 11, 2006
Testing Period : APR 11, 2006 TO APR 20, 2006

Test Requested : (1) As specified by client, Sample 1-6, 9, 11&14: to determine the Lead, Cadmium, Mercury & Hexavalent Chromium content in the submitted sample.
(2) Sample 4-6, 9&11: Determination of PBBs (Polybrominated Biphenyls), PBDEs (Polybrominated Diphenyl ethers) of the submitted sample.
(3) As specified by client, Sample 7, 8, 10, 12&13: to determine Lead, Cadmium, Mercury & Hexavalent Chromium Content in the submitted sample.

Test Method : (1)&(3) Lead content - With reference to EPA method 3050B: 1996 / other acid digestion.
Cadmium content - With reference to BS EN1122: 2001 method B / other acid digestion.
Mercury content - With reference to EPA 3052: 1996 / 7473: 1998 / other acid digestion.
Hexavalent Chromium content - With reference to EPA 3060A: 1996 & EPA 7196A: 1992.
Analysis was performed by Atomic Absorption Spectrometer / Inductively Coupled Plasma Atomic Emission Spectrometer (ICP-AES) / Direct Mercury analyzer / UV-VIS Spectrophotometer.
(2) With reference to EPA 3540C / 3550C. Analysis was performed by GC/MS.

Results : Please refer to next page.

Conclusion : (1) & (2) When tested as specified, the results shown on the report do not exceed the limit in commission decision of 18 Aug 2005 amending Directive 2002/95/EC (RoHS) notified under document 2005/818/EC.
(3) The Lead, Cadmium, Mercury and Hexavalent Chromium Content in the submitted Sample complies with the requirement of European Council Directive 94/62/EC - Article 11 that effective June 2001.

Signed for and on behalf of
SGS-CSTC Ltd.

Zhang Li, Amy
Sr. Engineer

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SPC No: 63929.0
Date: 2006.04.20
SGS-CSTC Ltd.
Address: 110000, Shanghai, China
Tel: 86-21-6349 6000
Fax: 86-21-6349 6001
E-mail: sgs@sgs.com



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RoHS

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Test Report

No.: GZ0604050143/CHEM

Date: APR 20, 2006

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Results :

(1)

Item	Unit	MDL	No.1	No.2	No.3	No.4	No.5	Limit
Lead Content (Pb)	ppm	2	9	14	38	N.D.	N.D.	< 1000ppm
Cadmium Content (Cd)	ppm	2	N.D.	N.D.	N.D.	N.D.	N.D.	< 100ppm
Mercury Content (Hg)	ppm	2	N.D.	N.D.	N.D.	N.D.	N.D.	< 1000ppm
Hexavalent Chromium (Cr VI)	ppm	2	N.D.	N.D.	N.D.	N.D.	N.D.	< 1000ppm

Item	Unit	MDL	No.6	No.9	No.11	No.14	Limit
Lead Content (Pb)	ppm	2	N.D.	107	35	64	< 1000ppm
Cadmium Content (Cd)	ppm	2	N.D.	N.D.	5	N.D.	< 100ppm
Mercury Content (Hg)	ppm	2	N.D.	N.D.	N.D.	N.D.	< 1000ppm
Hexavalent Chromium (Cr VI)	ppm	2	N.D.	N.D.	N.D.	N.D.	< 1000ppm

Note : - N.D. = Not Detected (< MDL)
- MDL = Method Detection Limit
- ppm = mg/kg

(2)

	No.4	No.5	No.6	No.9	No.11	Limit
Flame Retardants						
Polybrominated Biphenyls (PBBs)						< 1000ppm
Monobromobiphenyl	N.D.	N.D.	N.D.	N.D.	N.D.	
Dibromobiphenyl	N.D.	N.D.	N.D.	N.D.	N.D.	
Trisbromobiphenyl	N.D.	N.D.	N.D.	N.D.	N.D.	
Tetrabromobiphenyl	N.D.	N.D.	N.D.	N.D.	N.D.	
Pentabromobiphenyl	N.D.	N.D.	N.D.	N.D.	N.D.	
Hexabromobiphenyl	N.D.	N.D.	N.D.	N.D.	N.D.	
Heptabromobiphenyl	N.D.	N.D.	N.D.	N.D.	N.D.	
Octabromobiphenyl	N.D.	N.D.	N.D.	N.D.	N.D.	
Nonabromobiphenyl	N.D.	N.D.	N.D.	N.D.	N.D.	
Decabromobiphenyl	N.D.	N.D.	N.D.	N.D.	N.D.	
Polybrominated-Diphenylethers (PBDEs)(Mon-Non)						< 1000ppm
Monobromodiphenyl ether	N.D.	N.D.	N.D.	N.D.	N.D.	
Dibromodiphenyl ether	N.D.	N.D.	N.D.	N.D.	N.D.	
Trisbromodiphenyl ether	N.D.	N.D.	N.D.	N.D.	N.D.	
Tetrabromodiphenyl ether	N.D.	N.D.	N.D.	N.D.	N.D.	
Pentabromodiphenyl ether	N.D.	N.D.	N.D.	N.D.	N.D.	
Hexabromodiphenyl ether	N.D.	N.D.	N.D.	N.D.	N.D.	
Heptabromodiphenyl ether	N.D.	N.D.	N.D.	N.D.	N.D.	
Octabromodiphenyl ether	N.D.	N.D.	N.D.	N.D.	N.D.	
Nonabromodiphenyl ether	N.D.	N.D.	N.D.	N.D.	N.D.	
Decabromodiphenyl ether ^Δ	N.D.	N.D.	N.D.	N.D.	N.D.	See remark

Note : - N.D. = Not Detected (< 5 ppm)
- ppm = mg/kg

Remark : ^Δ : Decabromodiphenyl ether (DecaBDE) in polymeric applications is exempted by Commission Decision of 13 Oct 2005 amending Directive 2002/95/EC notified under 2005/717/EC.

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SGS
185 MEIJI ROAD, SCIENTECH Park, Queshao Economic & Technology Development District, Guangzhou, China 510663
中国·广州·经济技术开发区科学城科珠路108号
TEL: (86-20)82155555 FAX: (86-20)82075125
E: sgs.china@sgs.com



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003/006

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(3)

	No.7	No.8	No.10	No.12	No.13
Lead [Pb]	< 2	< 2	4	6	< 2
Cadmium [Cd]	< 2	< 2	< 2	< 2	< 2
Mercury [Hg]	< 2	< 2	< 2	< 2	< 2
Hexavalent Chromium [Cr(VI)]	< 2	< 2	< 2	< 2	< 2
Total [Pb + Cd + Cr(VI) + Hg]	< 8	< 8	< 10	< 12	< 8
Total Limit	100	100	100	100	100

Note: - < = Less than
- The unit of results is mg per kg

Specimen Description:

No.1 Silvery metal (⊙)
No.2 Coppery metal (⊙)
No.3 Silvery plated metal board (⊙)
No.4 Black plastic clip (⊙)
No.5 White plastic (chip sleeve) (⊙)
No.6 Transparent blue plastic (impeller) (⊙)
No.7 Transparent plastic tray (⊙)
No.8 White sheet (⊙)
No.9 White fibre tube (⊙)
No.10 Brown paper box w/ multi-color printing (⊙)
No.11 White paste (⊙)
No.12 Brown paper box w/ blue & red printing (⊙)
No.13 White paper w/ black printing (⊙)
No.14 Silvery metal (fibula) (⊙)

*** End of Report ***

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138 XE240 Road, SGSTECH Park Guangzhou Economic & Technology Development District, Guangzhou, China 510663 t (86-20)82155555 f (86-20)82075125 www.cn.sgs.com
中国·广州·经济技术开发区科学城科珠路198号 邮编:510663 t (86-20)82155555 f (86-20)82075125 e sgs.china@sgs.com



Spire Corp.

CE

Shenzhen IEC Commodity Inspection Bureau of P. R. China
Inspection & Testing Centre
Add: CIB Building, Fu Min Xue Guan, Fu Min District, Shenzhen, P. R. China Tel: 51959991 Fax: 3331436

2. Description of product

2.1 Product family

The DC fan made by Faner Science & Technology (Shen Zhen) Co., Ltd. was used mainly on computer for reducing the temperature of CPU. The product family covered by this TCF consists of following models, which have different sizes and ratings, to adapt to various needs:

Model No.	Rated Voltage DCV	Rated Current DCA	Rated Power W
FD03007	12	0.06	0.72
FD04007	12	0.05	0.60
FD04010A	12	0.05	0.60
FD04010B	24	0.08	1.92
FD04020A	12	0.05	0.60
FD04020B	24	0.06	1.44
FD05015	12	0.10	1.20
FD06010	12	0.13	1.56
FD06015	12	0.12	1.44
FD06025A	12	0.13	1.56
FD06025B	24	0.13	3.12
FD08025	12	0.15	1.80
FD08025	12	0.20	2.40
FD12025	12	0.15	1.80
FD12038A	12	0.58	6.96
FD12038B	24	0.15	3.60

All Model No. May be followed by: ①②③④⑤⑥

① substituted by B(single ball bearing), C(double ball bearings) or S(sleeve bearing) to indicate the bearing system used;

② substituted by 1(rated 12 VDC) or 2(rated 24 VDC) to indicate the rated voltage;

③ substituted by M(middle speed, rated power as shown above) or L(low speed, rated power 20% less than middle speed) to indicate the speed level.

④ substituted by A(alarm/auto-restart), R(auto-restart), S(speed sensor), C(counter-blowing), V(variable speed/temperature control/alarm), T(variable speed/temperature control) or E(extract blow) to indicate the control function;

⑤ substituted by 0(2 leads without pin), 1(3 leads without pin), 2(2 small pins), 3(3 small pins), 4(4 big pins) or 5(4 small pins) to indicate the leads and pins used;

⑥ indicates the heat-sink type used as defined in corresponding ISO/4.

Other parameter differences between models are described in the specification materials attached.

2.2 Test Samples

According to parameter differences of products in the family, Model FD04020B, FD12038B and FD12038A were selected for EMC and safety tests.



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UL

File E203248 Vol. 1 Sec. 1 Page 1 Issued: 09-29-99
and Report

DESCRIPTION

PRODUCT COVERED:

USR, CNR: Component - DC Fans, Model FD f/b 03,04, 05, 06, 08, 09, 12,
f/b 010, 015, 020, 025, 038, f/b A, B

f/b Followed By

ELECTRICAL RATINGS:

<u>Model No.</u>	<u>Volts</u>	<u>Hertz</u>	<u>Watts</u>	<u>Amperes</u>
FD04010A	12	DC	1.08	0.09
FD04010B	24	DC	1.37	0.057
FD04020A	12	DC	0.64	0.053
FD04020B	24	DC	1.42	0.059
FD05010	12	DC	1.20	0.10
FD05015	12	DC	1.20	0.10
FD06010	12	DC	9.60	0.8
FD06015	12	DC	1.41	0.118
FD08025	12	DC	1.80	0.15
FD09025	12	DC	2.40	0.20
FD12025	12	DC	3.00	0.25
FD12038A	12	DC	7.20	0.60
FD12038B	24	DC	4.20	0.175

ENGINEERING CONSIDERATIONS (NOT FOR FIELD REPRESENTATIVE'S USE:

USR indicates evaluation to United States Standard for Electric Fans, UL 507.

CNR indicates evaluation to Canadian Standards, C22.2 113-M84.

Conditions of Acceptability -

For use only in products where the acceptability of the combination is determined by Underwriters Laboratories Inc.

The following items are limitations to be considered during the end-use investigation:

1. This investigation was established to cover a Class A insulating system for all fans described in this Report.
2. The suitability of these fans when operating under normal or abnormal conditions, within an appliance or enclosure, should be determined for each application.
3. The suitability of these fans for use when exposed to water, oil, freon, chemicals, X-rays, ultraviolet rays, and the like, has not been determined by this investigation.