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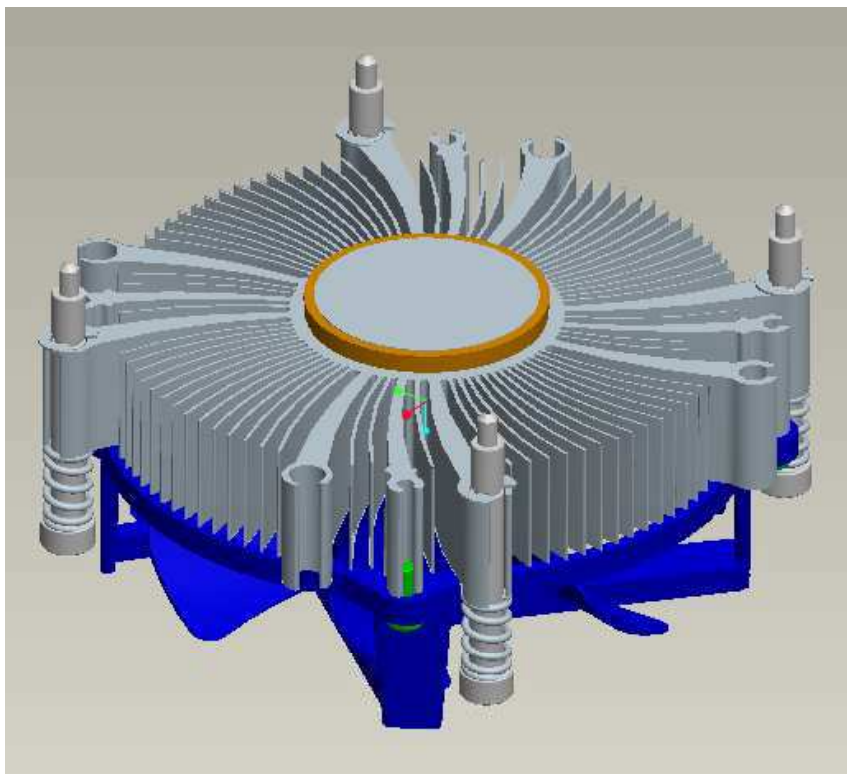
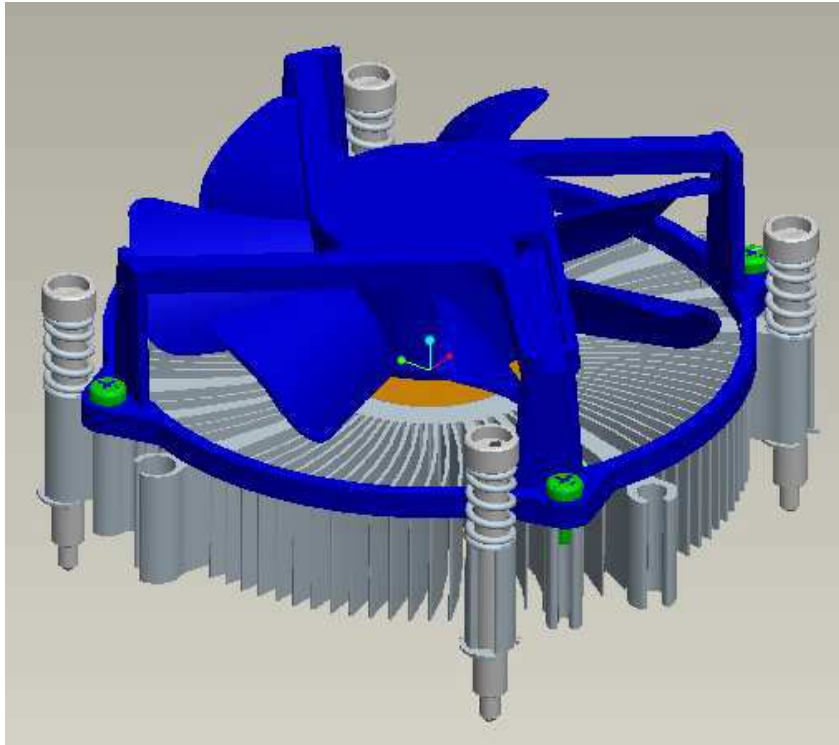


## 2. Product BOM

NO.	PART NO	PART NAME	QTY
1	601031420-GP	ASM 01	1
1.1	600027840-GP	ASM 02	1
1.1.1	250059340-01-GP	SINK	1
1.1.2	270014560-GP	CU POLE	1
1.2	150039740-GP	SCREW	4
1.3	450012870-GP	SPRING	4
1.4	300002012-GP	E-RING	4
1.5	150027000-HF	FAN SCREW	4
1.6	359000530-GP3	FAN LABEL	1
1.7	520001200-GP2	7921-GREASE	0.25g
1.8	330017820-GP	BACK PLATE	1
2	200007180-GP	FAN	1



### 3. Product Photo









## ASM 02

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CONFIDENTIAL VER: A1

REV	DESCRIPTION	Section	Engineer/Checked	Date
2				

2	ZTU04560-GP	銅柱	CU1100	1	抗氧化						
1	260899401-GP	SINK	AL6063-T5	1	洗白						
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>序號</th> <th>料號</th> <th>名稱</th> <th>材質</th> <th>數量</th> <th>備注</th> </tr> </table>		序號	料號	名稱	材質	數量	備注				
序號	料號	名稱	材質	數量	備注						

DRAWN: 吳世明  
 DATE: 2015.09.26  
 ENGR: 吳世明  
 DATE: 2015.09.26  
 CHECK: 劉永生  
 DATE: 2015.09.26  
 APPROV: 劉永生  
 DATE: 2015.09.26

Tolerance: General tolerance: Don't use the crossed lines  
 Range: 0-10 0.1 0.15 0.2 0.3  
 10-30 0.15 0.2 0.25 0.3 0.4  
 30-50 0.2 0.3 0.35 0.4 0.6  
 50-100 0.25 0.4 0.4 0.6 0.8  
 100~ 0.3 0.5 0.6 0.8 1.0  
 Angle: 1° 2° 3° 5°  
 Surface Unit: mm  
 Size: A4  
 File Name: 10409R068-ASM-02-A1

COOLER MASTER  
COOLER MASTER  
CO., LTD.

Cooler Master Co., Ltd  
正式圖面  
DATE: 2015.09.26

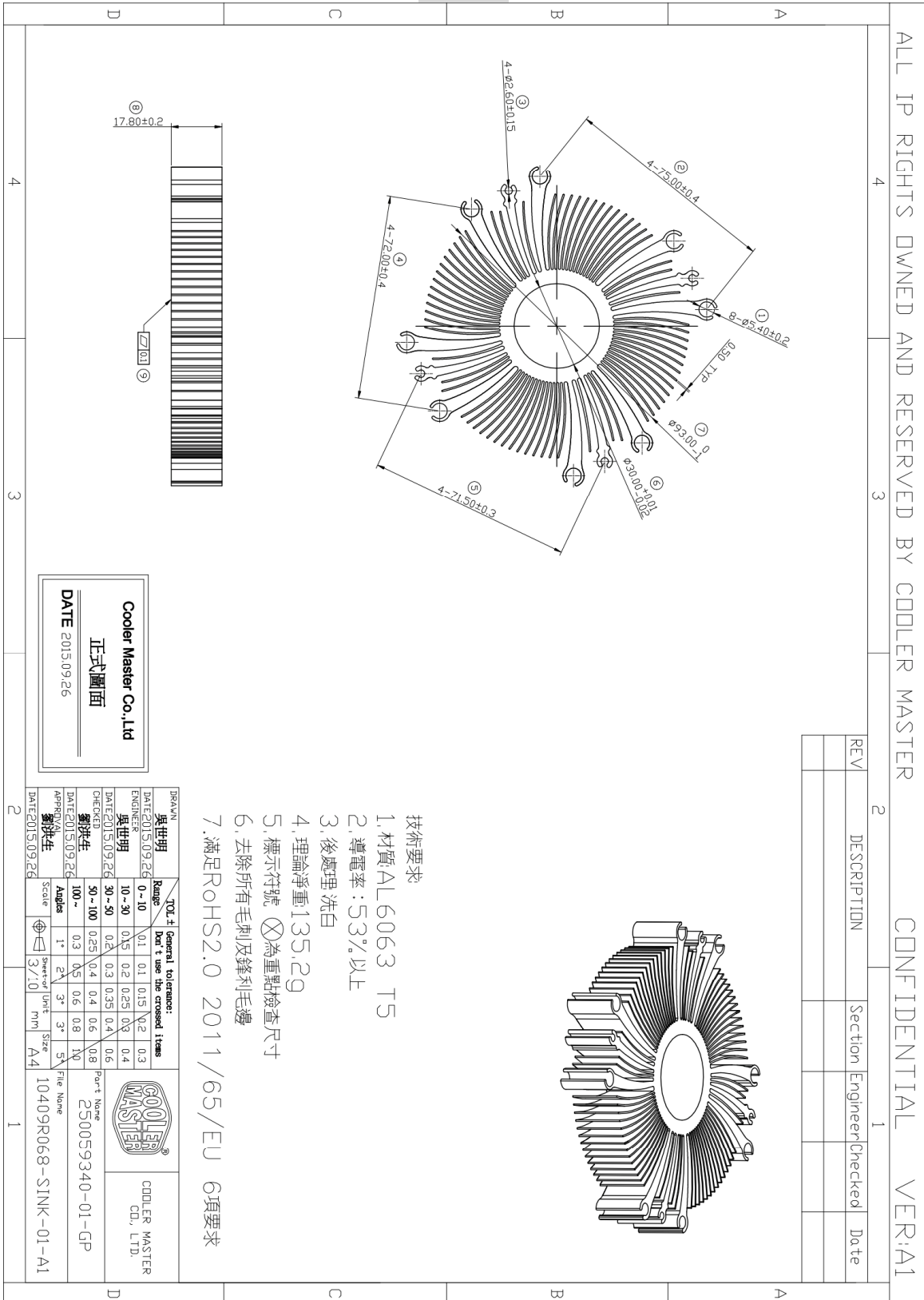
技術要求

1. 材質：鋁鑄網(AL6063+CU1100)
2. 加工方式：熱鑄網
3. 軸與孔採用過盈配合，過盈量為0.04mm~0.09mm
4. 軸與孔配合的基準尺寸為φ30
5. 去除所有毛刺及鋒利毛邊
6. 標註符號 ⊗ 為重點檢查尺寸
7. 鑄網柱頂端注意與模型的配合方向
8. 滿足RoHS2.0 2011/65/EU 6項要求



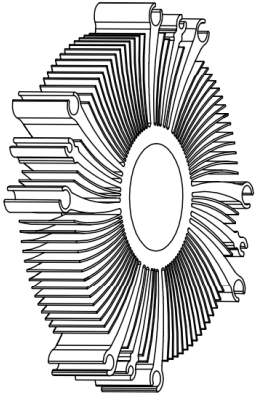


## SINK



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REV	DESCRIPTION	Section	Engineer/Checked	Date
2				



- 技術要求
1. 材質 AL 6063 T5
  2. 導電率: 53%以上
  3. 後處理 洗白
  4. 理論淨重 135.2g
  5. 標示符號 ⊗ 為重點檢查尺寸
  6. 去除所有毛刺及鋒利毛邊
  7. 滿足RoHS2.0 2011/65/EU 6項要求

Cooler Master Co., Ltd  
正式圖面  
DATE 2015.09.26

DRAWN		TOL ± General tolerances:		Cooler Master	
Range	Don't use the crossed lines	Part Name	File Name	Part Name	File Name
0-10	0.1	250059340-01-GP	10409R068-SINK-01-A1	COOLER MASTER	COOLER MASTER
10-30	0.15			GD, LTD.	
30-50	0.2				
50-100	0.25				
100~	0.3				
Angle	1°				
Surface Unit	2μ				
Scale	3/10				
Sheet Unit	mm				
Size	A4				



## CU POLE

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REV	DESCRIPTION	Section	Engineer/Checked	Date
2				

**技术要求**

1. 材質: C1100
2. 導電率 ≥95%
3. 表面處理 抗氧化
4. 表面粗糙度: Ra<0.5
5. 理論單重: 132.7g
6. 去除鋒利毛邊與毛刺
7. 標示符號 ⊗ 為重要檢驗尺寸
8. 滿足RoHS2.0 2011/65/EU 6項要求

**Cooler Master Co., Ltd**  
正式圖面  
DATE 2015.09.26

DATE	Scale	Unit	Size
2015.09.26	4/10	mm	A4

DATE	Range	TOL ±	General tolerance:
2015.09.26	0-10	0.1	Don't use the crossed lines
2015.09.26	10-30	0.15	
2015.09.26	30-50	0.2	
2015.09.26	50-100	0.25	
2015.09.26	100~	0.3	

DATE	Part Name	File Name
2015.09.26	270014560-GP	10409R068-CU POLE-01-A1

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## SCREW

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CONFIDENTIAL

VER: A1

4

3

2

1

技術要求

1. 材質: AISI 1018
2. 表處理: 鍍鎳3-7um
3. 芯部硬度: 280~360HV
4. 外部硬度: 350~450HV
5. 鹽霧測試需達 6 H
6. 標示符號 ⊗ 為重點檢查尺寸
7. 滿足RoHS2.0 2011/65/EU 6項要求

REV	DESCRIPTION	Section	Engineer	Checked	Date
2					

**Cooler Master Co., Ltd**

正式圖面

DATE: 2015.09.26

DRAWN		TOL ±		General tolerance:		Part t use the crossed items	
Range	0-10	0.1	0.1	0.15	M2	1	0.3
ENGINEER	吳世明	10-30	0.15	0.2	0.25	0.8	0.4
CHECKED	劉世生	30-50	0.2	0.3	0.35	0.4	0.6
APPROVAL	劉世生	50-100	0.25	0.4	0.4	0.6	0.8
Scale	100~	100	0.3	0.5	0.6	0.8	1.0
Angles	1°	2°	3°	3°	3°	5°	10°
Sheet of Unit	5/10	1*	2*	3*	3*	5*	
File Name	10409R063-SCREW-01-A1	mm	mm	mm	mm	mm	A4

COOLER MASTER  
CO., LTD.

Part Name: 150039740-GP



## SPRING

ALL IP RIGHTS OWNED AND RESERVED BY COOLER MASTER		CONFIDENTIAL		VER: A1
4	3	2	1	1
		REV	DESCRIPTION	Section
		Engineer	Checked	Date
		Date	Date	Date

技術要求

1. 材質: 琴鋼線  $\phi 1.2 \pm 0.05\text{mm}$ .
2. 電鍍鍍膜厚: 3-7  $\mu\text{m}$ .
3. 左旋
4. 總圈數: 5.5圈, 2端磨平
5. 下壓: 2mm 產生 10 lbf.
6. 標示符號  $\otimes$  的為重點檢驗尺寸
7. 滿足RoHS2.0 2011/65/EU 6項要求

**Cooler Master Co., Ltd**

正式圖面

DATE: 2015.09.26

DRAWN		TOL ± General tolerance:		Part: use the crossed items	
DATE: 2015.09.26	Range	0-10	0.1	0.1	0.15
ENGINEER: 吳世明	10-30	0.15	0.2	0.25	0.3
DATE: 2015.09.26	30-50	0.2	0.3	0.35	0.4
CHECKED: 劉世生	50-100	0.25	0.4	0.4	0.5
DATE: 2015.09.26	100~	0.3	0.5	0.6	0.8
APP'D: 劉世生	Angles	1°	2°	3°	5°
DATE: 2015.09.26	Scale	5/10	1/1	2/1	3/1
	Sheet of	Unit	mm	Size	A4
	File Name	10409R069-SPRING-01-A1			

COOLER MASTER  
CO., LTD.

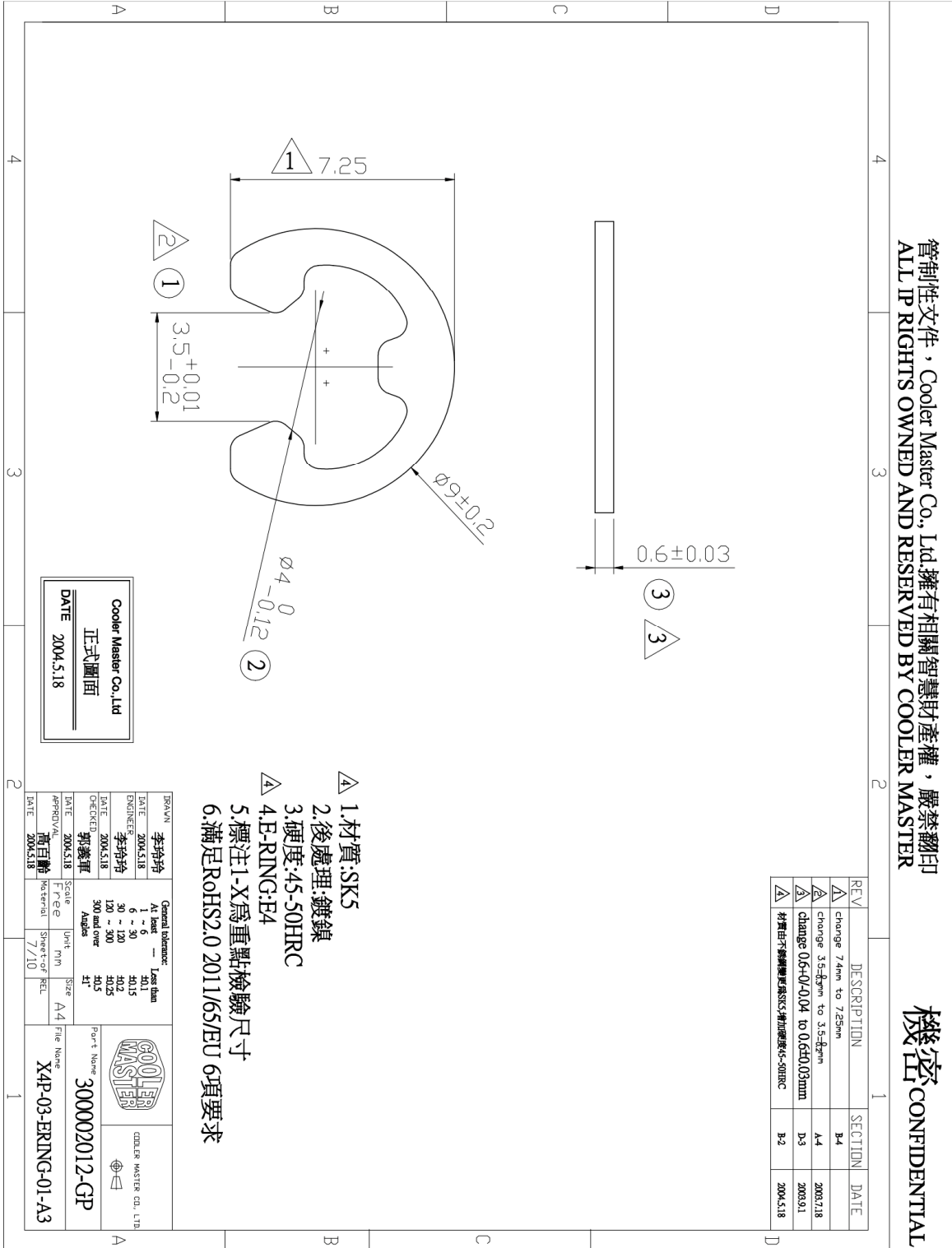
Part Name: 450012870-GP



## E-RING

管制性文件，Cooler Master Co., Ltd. 擁有相關智慧財產權，嚴禁翻印  
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機密 CONFIDENTIAL



REV	DESCRIPTION	SECTION	DATE
Δ	change 7.4mm to 7.25mm	B-4	2008.7.18
Δ	change 3.5±0.04 to 3.5±0.01	A-4	2008.9.1
Δ	change 0.6±0.004 to 0.6±0.03mm	D-3	2008.9.1
Δ	材質由不銹鋼變更爲SK5增加硬度5-60HRC	B-2	2004.5.18

- △ 1.材質:SK5
- △ 2.後處理:鍍鎳
- △ 3.硬度:45-50HRC
- △ 4.E-RING:E4
- △ 5.標注1-X爲重點檢驗尺寸
- △ 6.滿足RoHS2.0 2011/65/EU 6項要求

Cooler Master Co., Ltd  
正式圖面  
DATE 2004.5.18

DRAWN		General tolerance		Part Name	
李均均	2004.5.18	All part	Less than	300002012-GP	
DATE	2004.5.18	1 ~ 6	40.1	File Name	X4P-03-ERING-01-A3
ENGINEER	李均均	6 ~ 30	40.15	Part Name	
DATE	2004.5.18	30 ~ 120	40.2	300002012-GP	
CHECKER	郭義軍	120 ~ 300	40.25	300002012-GP	
DATE	2004.5.18	300 and over	40.5	300002012-GP	
APPROVAL	高百齡	Angles	41	300002012-GP	
DATE	2004.5.18	Scale	1:1	300002012-GP	
		Unit	mm	300002012-GP	
		Sheet-of	7/10	300002012-GP	
		Material		300002012-GP	

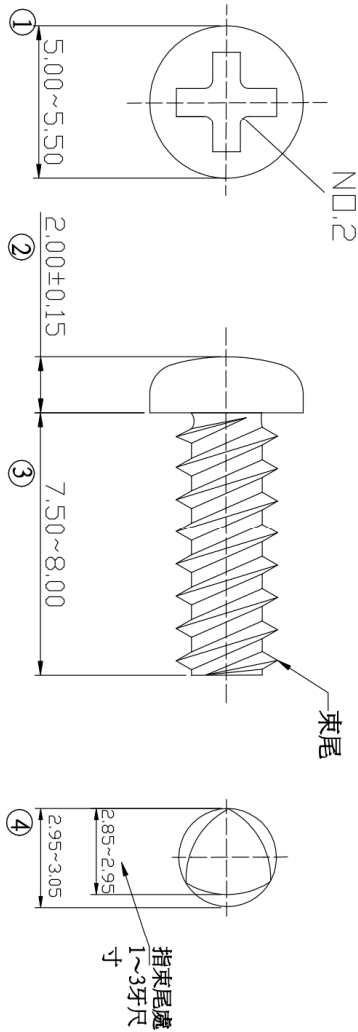


## FAN SCREW

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CONFIDENTIAL

REV	DESCRIPTION	Section	Engineer/Checked	Date
Δ	修正材質為AISI1018	C4	王會仁 周慧華	



- 技術要求：
- 1.材質：AISI1018; Δ
  - 2.後處理：鍍黑鎳;
  - 3.標示符號 ⊗ 的為重點檢驗尺寸.
  - 4.滿足RoHS2.0 2011/65/EU 6項要求

Cooler Master Co., Ltd  
正式圖面  
DATE 2011.4.18

DRAWN	王會仁	TOL ±	Tolerance Frame, please do not use items crossed	
DATE	2011.4.18	RANGE	0-10	0.1 0.1 X15 0.2 0.3
ENGINEER	王會仁	10-30	0.15 0.2 0.25 0.3 0.4	
DATE	2011.4.18	30-50	0.2 0.3 0.35	N4 0.6
CHECKED	王會仁	50-100	0.35 0.4 0.4 0.6 0.8	
DATE	2011.4.18	100-	0.3 0.5 0.6 0.8 0	
APPROVAL	周慧華	Angles	1° 2° 3°	5°
DATE	2011.4.18	Scale	8/10	mm
		Sheet-of	mm	Size A4
		File Name	9802R110-SCW-01-A2	
		Part Name	150027000-HF	
		COOLER MASTER CO., LTD.		



## FAN LABEL

A	<p style="font-size: 24px; margin: 0;">ROHS2.0</p> <p style="font-size: 24px; margin: 0;">HF</p>	3	4
ALL IP RIGHTS OWNED AND RESERVED BY COOLER MASTER			
		2	1
		CONFIDENTIAL	VER: A1
REV	DESCRIPTION	Section	Engineer/Checked
Date			
DATE	2010.12.13		

ø25.1

**NOTE:**

- 1.材質:25#消銀龍,表面需加護膜,耐高溫(-40~80).
- 2.顏色:Pantone320C,表面加護膜.
- 3.標示符號 1 ~ X 的為重點檢驗尺寸
- 4.THE MATERIAL/PART/ASSEMBLY SHOULD COMPLY TO "HP GSE HP-00011-00 REV.N" FOR ENVIRONMENT-RESTRICTED SUBSTANCES.
- 5.BFR/PVC/CFR FREE REQUIREMENT SHOULD COMPLY WITH "HP GSE 011-1 SECTION 3.15 REV.N".
- 6.ROHS 2.0 REQUIREMENT SHOULD COMPLY WITH "HP ROHS 2 COMPLIANCE SPECIFICATION REV.C1".
- 7.滿足RoHS2.0 2011/65/EU 6項要求

Cooler Master Co., Ltd

正式圖面

DATE 2010.12.13

DRAWN	DATE	Range	TOL ±	General	tolerance:	Part's	use the	crossed	times
鄧斌	2010.12.13	0-10	0.1	0.1	0.15	0.2	0.3	0.4	0.5
鄧斌	2010.12.13	10-30	0.15	0.2	0.25	0.3	0.4	0.5	0.6
鄧斌	2010.12.13	30-50	0.2	0.3	0.35	0.4	0.5	0.6	0.7
鄧斌	2010.12.13	50-100	0.3	0.4	0.4	0.5	0.6	0.8	1.0
鄧斌	2010.12.13	100~	0.4	0.5	0.6	0.8	1.0	1.0	1.0
鄧斌	2010.12.13	Angle	1°	2°	3°	5°	5°	5°	5°
鄧斌	2010.12.13	Scale	9/10	mm	mm	mm	mm	mm	mm
鄧斌	2010.12.13	Sheet	9/10	mm	mm	mm	mm	mm	mm
鄧斌	2010.12.13	Size	A4	mm	mm	mm	mm	mm	mm

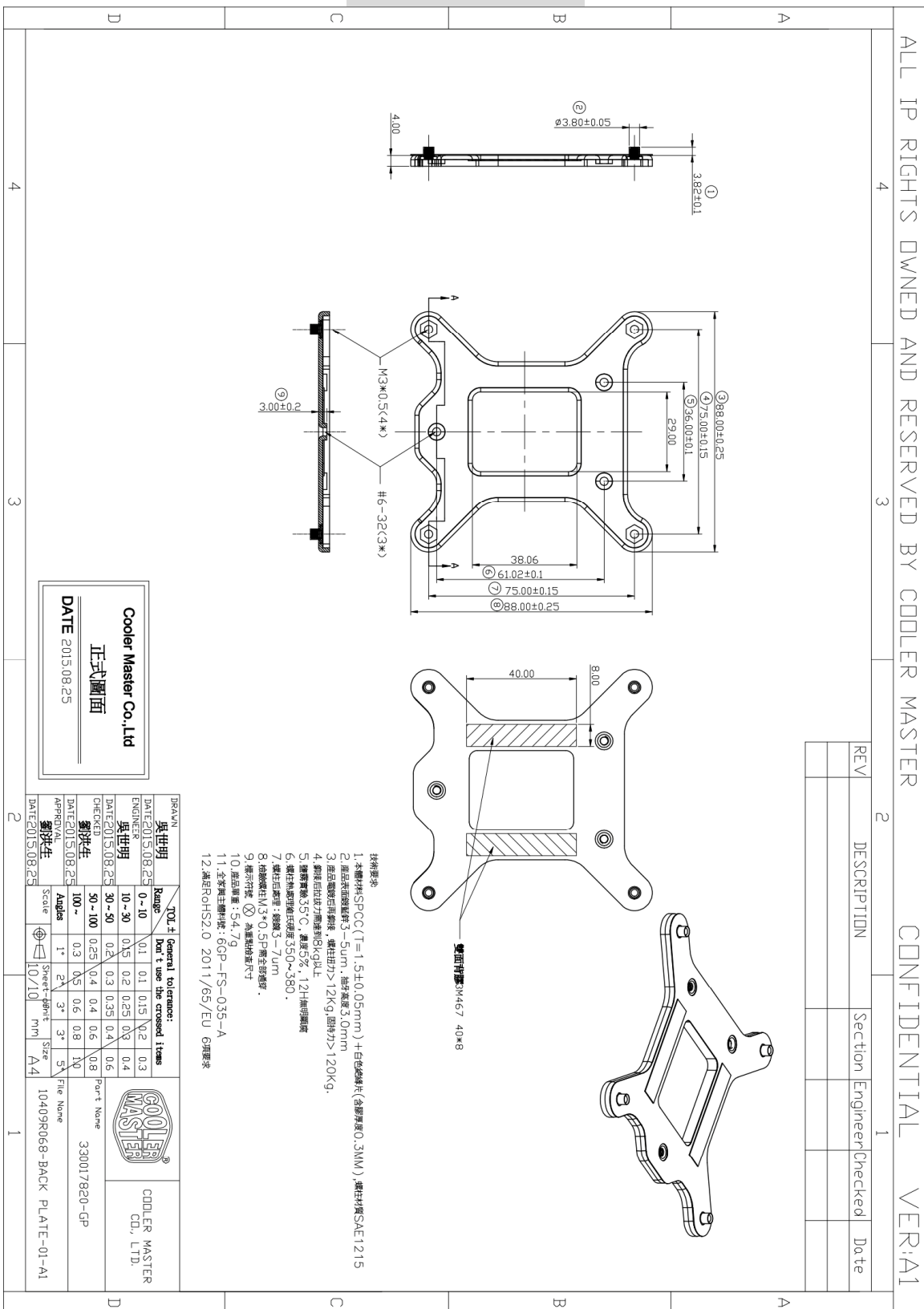
COOLER MASTER  
CO., LTD.

Part Name  
359000530-GP3

File Name  
9817R014-1-label-A1



## BACK PLATE



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REV	DESCRIPTION	Section	Engineer/Checked	Date
2				

- 材料要求
1. 本體材料SPCC(T=1.5±0.05mm)+白色鍍錫片(含鍍厚度0.3MM),螺絲材質SAE1215
  2. 產品表面鍍層厚度3-5um,抽牙高度3.0mm
  3. 產品電鍍后無銹斑,螺絲扭力>12kg,圓柱力>120kg.
  4. 鋼板后拉拔力無達到8kg以上
  5. 鋼板厚度35°C,溫度5%,12H無明顯變
  6. 螺絲熱處理硬度350~380.
  7. 螺絲后處理:鍍鍍3-7um
  8. 抽牙規格:M3\*0.5P完全取標準.
  9. 螺絲牙徑:為標準規格(不)
  10. 產品重量:54.7g
  11. 全球無王國特許:6GP-FS-035-A
  12. 滿足ROHS2.0 2011/65/EU 6項要求

Cooler Master Co.,Ltd  
正式圖面  
DATE 2015.08.25

DRAWN	TOL ±	General	tolerance:
吳世明	Range	Don't use the crossed lines	
DATE: 2015/08/25	0-10	0.1	0.15
ENGIN	10-30	0.15	0.2
吳世明	30-50	0.2	0.25
DATE: 2015/08/25	50-100	0.25	0.3
ENGIN	100~	0.3	0.4
吳世明	100~	0.3	0.4
DATE: 2015/08/25	100~	0.3	0.4
ENGIN	100~	0.3	0.4
吳世明	100~	0.3	0.4
DATE: 2015/08/25	100~	0.3	0.4
ENGIN	100~	0.3	0.4

Part Name	File Name
COOLER MASTER	330017820-GP
COOLER MASTER	104098068-BACK PLATE-01-A1



## FAN

Green Product  
綠色產品



### SPECIFICATION FOR APPROVAL

Customer COOLERMAS  
 Description \_\_\_\_\_  
 Part No. 200007180-GP V, 902  
 Delta Model No. AFB0912VH-4E91  
 Order P/N. \_\_\_\_\_  
 Sample Issue No. 5307  
 Sample Issue Date MAR-12-2005

PLEASE SEND ONE COPY OF THIS SPECIFICATION  
 BACK AFTER YOU SIGNED APPROVAL FOR PRODUCTION  
 PRE-ARRANGEMENT.

APPROVED BY : \_\_\_\_\_

DATE : \_\_\_\_\_

Engineering Department  
 工程師  
 周景华  
 18 MAR 2005

Delta Electronics Component Co., Ltd.  
 Xi Nan District Shi Jie Town.  
 Dong Guan City. Guangdong Province,  
 China. P. R. C.  
 TEL : 86-769-6329008  
 FAX : 86-769-6631589







Delta Electronics Component Co., Ltd.  
Xi Nan District Shi Jie Town,  
Dong Guan City. Guangdong Province,  
China. P. R. C.

TEL : 86-769-6329008  
FAX : 86-769-6631589

### SPECIFICATION FOR APPROVAL

Customer:	COOLERMMASTER		
Description:	DC FAN		
Customer P/N:	200007180-GP	REV:	02
Delta Model NO.:	AFB0912VH-4E91		
Sample Rev:	02	Issue NO:	5307
Sample Issue Date:	MAR-12-2005	Quantity:	10PCS

#### 1. SCOPE:

THIS SPECIFICATION DEFINES THE ELECTRICAL AND MECHANICAL CHARACTERISTICS OF THE DC BRUSHLESS AXIAL FLOW FAN. THE FAN MOTOR IS WITH TWO PHASES AND FOUR POLES. FOLLOWING DATA IS BASED ON PROTOTYPE SAMPLES, ONLY FOR REFERENCE.

#### 2. CHARACTERS:

ITEM	DESCRIPTION
RATED VOLTAGE	12.0 VDC
OPERATION VOLTAGE	7.0 - 12.5 VDC
INPUT CURRENT	0.40 (MAX. 0.60) A
INPUT POWER	4.80 (MAX. 7.20) W
SPEED (REF.)	4500 R.P.M.±10%
MAX. AIR FLOW (AT ZERO STATIC PRESSURE)	1.634 (MIN. 1.471 ) M <sup>3</sup> /MIN. 57.70 (MIN. 51.93 ) CFM
MAX. AIR PRESSURE (AT ZERO AIRFLOW)	8.60 (MIN. 6.97 ) mmH <sub>2</sub> O 0.338 (MIN. 0.274 ) inchH <sub>2</sub> O
ACOUSTICAL NOISE (AVG.)	47.5 (MAX. 51.5) dB-A
INSULATION TYPE	UL: CLASS A

(continued)



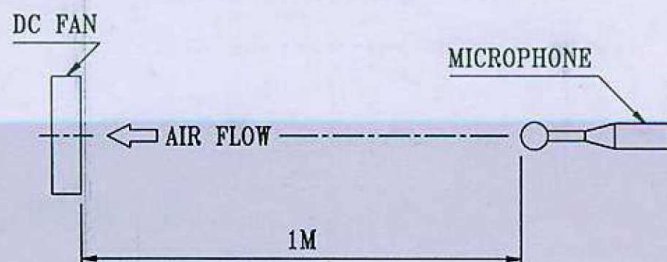
# Cooler Master Co., Ltd.

www.coolermaster.com

PART NO: 200007180-GP  
DELTA MODEL: AFB0912VH-4E91

INSULATION STRENGTH	10 MEG OHM MIN. AT 500 VDC (BETWEEN FRAME AND (+) TERMINAL)
DIELECTRIC STRENGTH	5 mA MAX. AT 500 VAC 60 Hz ONE MINUTE, (BETWEEN FRAME AND (+) TERMINAL)
EXTERNAL COVER	OPEN TYPE
LIFE EXPECTANCE	70,000 HOURS CONTINUOUS OPERATION AT 40 °C WITH 15 ~ 65 %RH.
ROTATION	CLOCKWISE VIEW FROM NAME PLATE SIDE
OVER CURRENT SHUT DOWN	THE CURRENT WILL SHUT DOWN WHEN LOCKING ROTOR
LEAD WIRE	UL 1061 -F- AWG #26 BLACK WIRE:NEGATIVE(-) RED WIRE:POSITIVE(+) YELLOW WIRE:TACHOMETER OUTPUT (FOO) BLUE WIRE:SPEED CONTROL (PWM)

- NOTES: 1. ALL READINGS ARE MEASURED AFTER STABLY WARMING UP THROUGH 10 MINUTES.  
2. THE VALUES WRITTEN IN PARENS , ( ), ARE LIMITED SPEC.  
3. ACOUSTICAL NOISE MEASURING CONDITION:



NOISE IS MEASURED AT RATED VOLTAGE IN FREE AIR IN ANECHOIC CHAMBER WITH B & K SOUND LEVEL METER WITH MICROPHONE AT A DISTANCE OF ONE METER FROM THE FAN INTAKE.

page: 2

A00





PART NO: 200007180-GP

DELTA MODEL: AFB0912VH-4E91

### 3. MECHANICAL:

- 3-1. DIMENSIONS ----- SEE DIMENSIONS DRAWING
- 3-2. FRAME ----- PLASTIC UL: 94V-0
- 3-3. IMPELLER ----- PLASTIC UL: 94V-0
- 3-4. BEARING SYSTEM ----- TWO BALL BEARINGS
- 3-5. WEIGHT ----- 90 GRAMS

### 4. ENVIRONMENTAL:

- 4-1. OPERATING TEMPERATURE ----- -10 TO +60 DEGREE C
- 4-2. STORAGE TEMPERATURE ----- -40 TO +70 DEGREE C
- 4-3. OPERATING HUMIDITY ----- 5 TO 90 % RH
- 4-4. STORAGE HUMIDITY ----- 5 TO 95 % RH

### 5. PROTECTION:

#### 5-1. LOCKED ROTOR PROTECTION

IMPEDANCE OF MOTOR WINDING PROTECTS MOTOR FROM FIRE IN 96 HOURS OF LOCKED ROTOR CONDITION AT THE RATED VOLTAGE.

#### 5-2. POLARITY PROTECTION

BE CAPABLE OF WITHSTANDING IF REVERSE CONNECTION FOR POSITIVE AND NEGATIVE LEADS.

### 6. RE OZONE DEPLETING SUBSTANCES:

- 6-1. NO CONTAINING PBBs, PBBOs, CFCs, PBBEs, PBDPEs AND HCFCs.

### 7. PRODUCTION LOCATION

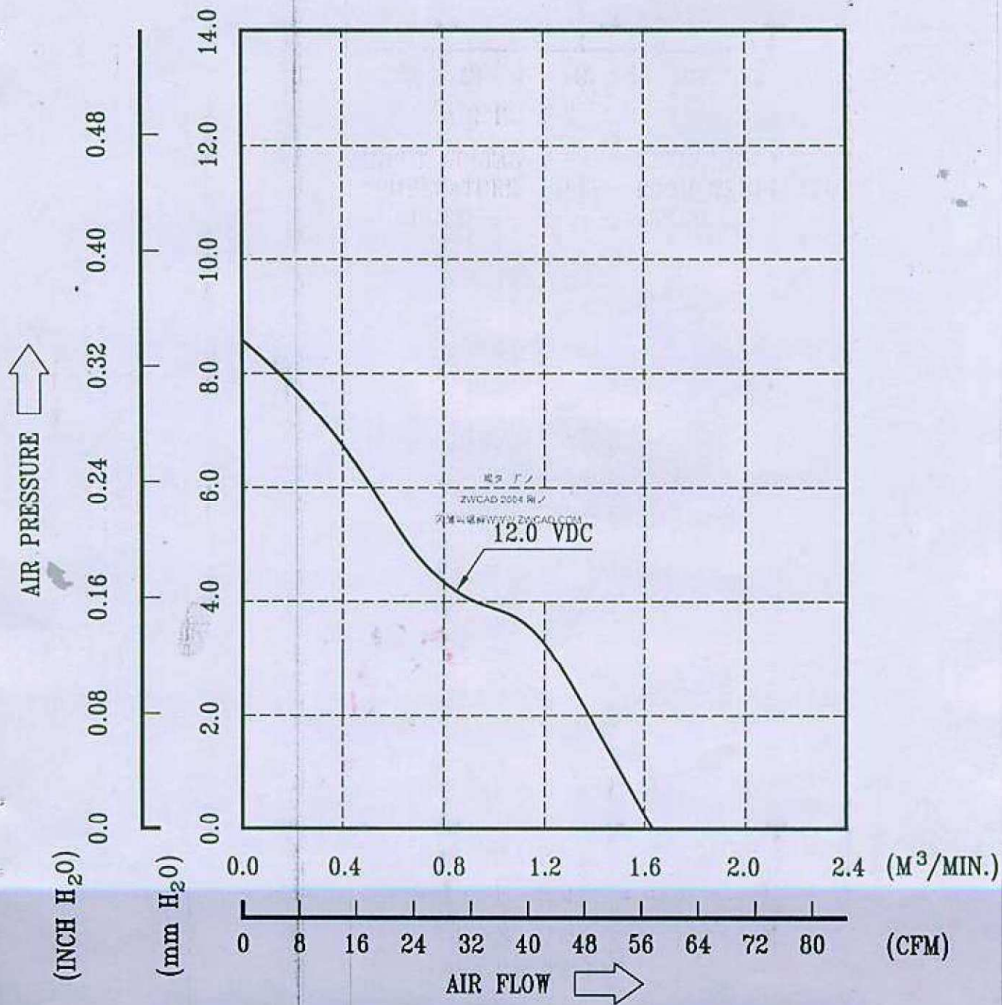
- 7-1. PRODUCTS WILL BE PRODUCED IN CHINA OR THAILAND



PART NO: 200007180-GP

DELTA MODEL: AFB0912VH-4E91

### 9. P & Q CURVE:



\* TEST CONDITION: INPUT VOLTAGE ----- OPERATION VOLTAGE  
TEMPERATURE ----- ROOM TEMPERATURE  
HUMIDITY ----- 65%RH





PART NO: 200007180-GP

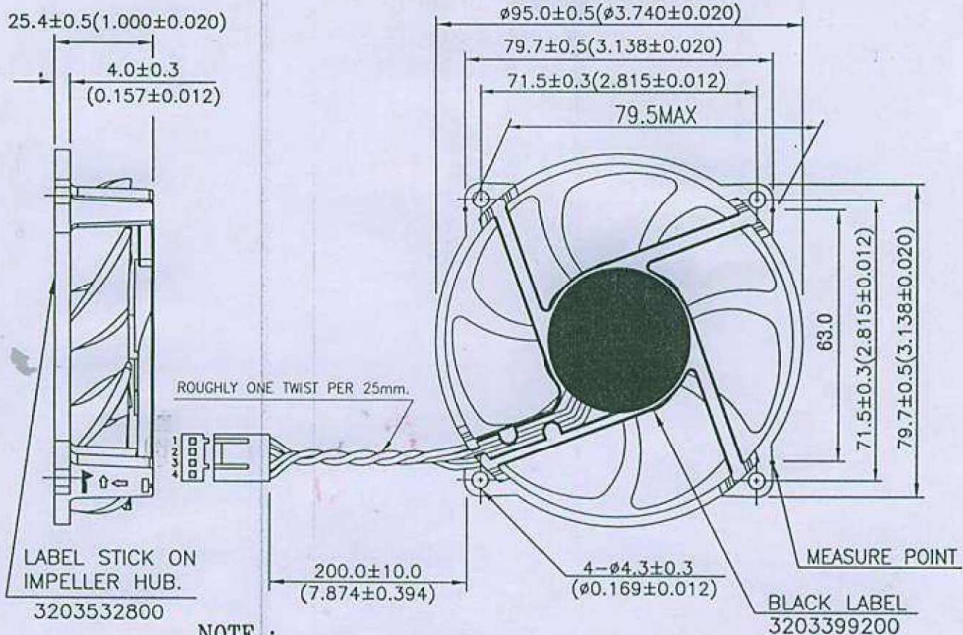
DELTA MODEL: AFB0912VH-4E91

### 10. DIMENSION DRAWING:

LABEL:



OR



#### NOTE :

- LEAD WIRE UL 1061 AWG #26  
 PIN 1 : BLACK WIRE: NEGATIVE(-)      UNIT: MM(INCH)  
 PIN 2 : RED WIRE: POSITIVE(+)  
 PIN 3 : YELLOW WIRE: TACHOMETER OUTPUT (FO)  
 PIN 4 : BLUE WIRE: SPEED CONTROL (PWM)
- HOUSING : WIESON G2510C888-001 OR EQUIVALENT
- TERMINAL : WIESON G2511-T1 OR EQUIVALENT
- LEAD FREE MODEL

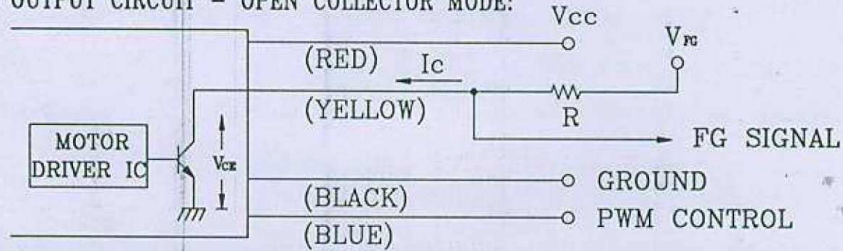


PART NO: 200007180-GP

DELTA MODEL: AFB0912VH-4E91

### 11. ROTATION DETECT (FG) SIGNAL:

#### 1. OUTPUT CIRCUIT - OPEN COLLECTOR MODE:



CAUTION: THE FG SIGNAL LEAD WIRE MUST BE KEPT AWAY FROM "+" LEAD WIRE & "-" LEAD WIRE.

#### 2. SPECIFICATION:

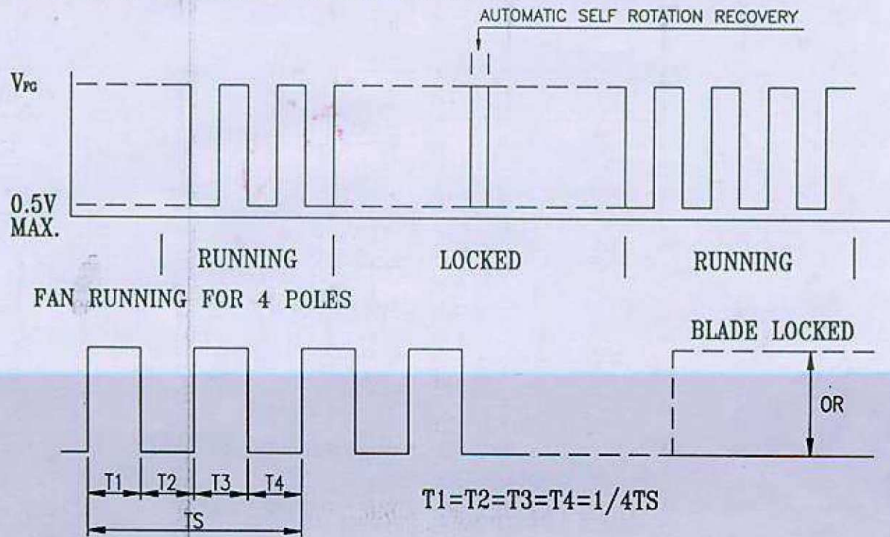
$V_{ce(sat)} = 0.5V \text{ MAX}$

$V_{FG} = 13.8V \text{ MAX}$

$I_c = 5mA \text{ MAX.}$

$$R \geq V_{FG} / I_c$$

#### 3. FREQUENCY GENERATOR WAVEFORM:



$N = \text{R.P.M}$

$TS = 60/N(\text{SEC})$

\*VOLTAGE LEVEL AFTER BLADE LOCKED

\*4 POLES

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A00



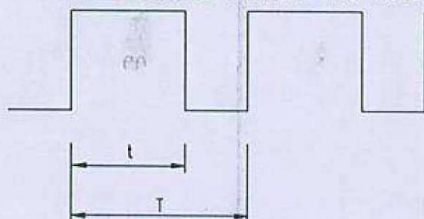


PART NO: 200007180-GP

DELTA MODEL: AFB0912VH-4E91

### 12. PWM CONTROL SIGNAL:

SIGNAL VOLTAGE RANGE: -0.8~20VDC



HIGH SIGNAL: 20 VDC MAX.  
2.8 VDC MIN.

LOW SIGNAL: 0.4 VDC MAX.  
-0.8 VDC MIN.

$$\text{DUTY CYCLE} = \frac{t}{T} * 100(\%)$$

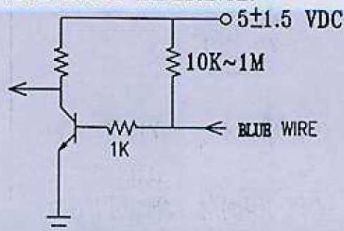
- THE FREQUENCY FOR CONTROL SIGNAL OF THE FAN SHALL BE ABLE TO ACCEPT A 30HZ~300 KHZ.
- THE PREFERRED OPERATING POINT FOR THE FAN IS 20K HZ.
- AT 100% DUTY CYCLE,THE ROTOR WILL SPIN AT MAXIMUM SPEED.
- AT 0% DUTY CYCLE,THE ROTOR WILL STOP SPIN .
- WITH CONTROL SIGNAL LEAD DISCONNECTED,THE FAN WILL SPIN AT MAXIMUM SPEED.
- AT 20K HZ 30% DUTY CYCLE ,THE FAN WILL BE ABLE TO STAR FROM A DEAD STOP .

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### 13. SPEED VS PWM CONTROL SIGNAL: (AT RATED VOLTAGE & PWM FREQUENCY=20KHZ)

DUTY CYCLE (%)	SPEED R.P.M. (REF.)	CURRENT (A) TYP.
100	4500±10%	0.40
75	3600±10%	0.22
50	2500±10%	0.10
25	1200±150	0.04
0	0	0.01

### 14. PWM CONTROL LEAD WIRE INPUT IMPEDANCE:



14-1. THE FAN SPEED WILL DEFAULT TO MAXIMUM WHEN THE SPEED CONTROLL INPUT IS LEFT UNCONNECTED.











CSA INTERNATIONAL

## CERTIFICATION RECORD

The company named below has been authorized by CSA to represent the products listed in this record as "CSA Certified" and to affix the CSA Mark to these products according to the terms and conditions of the CSA Service Agreement and applicable CSA program requirements (including additional Markings).

File No: 091949 0 000  
Class No: 3812 01 FANS AND BLOWERS

### SUBMITTOR

4510824 Delta Electronics, Inc.  
31-1 Shien Pam Rd  
Kuei Shan Industrial Zone  
Taoyuan Hsien, 333  
Taiwan

### FACTORIES

4510824 Delta Electronics, Inc.  
31-1 Shien Pam Rd  
Kuei Shan Industrial Zone  
Taoyuan Hsien, 333  
Taiwan

4554827 Delta Electronics Component  
(Dongguan) Co., Ltd.  
Yue Yun Central Rd  
Xinan District Shijie Town  
Dongguan, Guangdong 511724  
China

4562908 Delta Electronics Components  
(Thailand) Ltd.  
699 SOI E5 E.P.Z  
Bangpoo Ind Estate Sukhumvit Rd  
Km 37 Praksa District Amphur  
Samutprakran, 10280  
Thailand

November 17, 2000 (Replaces: August 17, 2000)

### CATEGORIES:

- Extra Low Voltage Fans and Ventilators

### Notes:

1. The above categories are components of other certified equipment, where the suitability of the combination is to be determined by CSA International.

DQD No. 548 99/04/08



# Cooler Master Co., Ltd.

www.coolermaster.com



Certification Record No: 091949 0 000

Class No: 3812 01

AFB0824VHB	24	180	STD R00 F00
AFB0848L	48	90	-
AFB0848M	48	110	-
AFB0848H	48	110	-
AFB0848HH	48	120	-
AFB0912H	12	300	STD R00 F00
AFB0912HH	12	400	STD R00 F00
AFB0912L	12	150	STD R00 F00
AFB0912L-SB	12	150	-
AFB0912M-SB	12	200	-
AFB0912H-SB	12	300	-
AFB0912M	12	200	STD R00 F00
AFB0912VH	12	600	STD R00 F00
AFB0924H	24	290	STD R00 F00
AFB0924HH	24	250	STD R00 F00
AFB0924L	24	100	STD R00 F00
AFB0924M	24	150	STD R00 F00
AFB0924VH	24	400	STD R00 F00
AFB0948L	48	80	-
AFB0948M	48	80	-
AFB0948H	48	90	-
AFB0948HH	48	140	-
AFB1212LE	12	300	-
AFB1212ME	12	400	-
AFB1212HE	12	480	-
AFB1212HHE	12	700	-
AFB1212SHE	12	1600	STD R00 F00
AFB1212VHE	12	900	-
AFB1224HE	24	360	-

DGD No. 548 990403

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## Online Certifications Directory

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### Fans,Electric-Component

#### Guide Information

DELTA ELECTRONICS INC  
14TH FL  
266 2ND WEN-HWA RD,SEC 1  
LINKOU  
TAIPEI HSIEN 244,TAIWAN

E132003

Model AFB followed by 0405,0412, followed by HA, HHA, LA or MA; Model AFB followed by 0505, followed by HB, LB or MB; Model AFB followed by 0512, followed by HB, HHB LB or MB; Model AFB followed by 0605, followed by H, L or M, followed by R00, R05, RR 0 or RR05; Model AFB followed by 0605 or 0805, followed by H, L or M; Model AFB followed by 0612, 0624, followed by EH, SH VH; Model AFB0612LB; Model AFB followed by 0612, 0624, 0812, 0824, 0912 or 0924, followed by H, HB, HH, HHB, LB, LLB, MB, SHB or VHB; Models ASB0412MA, ASB0412LA, ASB0405MA; Model ASB followed by 0405,0412, followed by HA, HHA, LA or MA; Model ASB followed by 0505, followed by HB, LB or MB; Model ASB followed by 0512, 0524, followed by HB, HHB, LB or MB; Model ASB followed by 0812, 0824, followed by HB, HHB, LB, LLB, MB, SHB or VHB; Model ASB followed by 0612 or 0624, followed by H, HH, L or M; Model ASB followed by 0812, followed by L or M; Model ASB followed by 0912 or 0924, followed by H, L, or M; Model AUB followed by 0505, 0512 or 0524, followed by HB, HHB, LB or MB, Model AUB followed by 0612, 0624, followed by H, HH, L or M; Model AUB followed by 0912, K 0924, followed by H, HH, L, M or VH; Model AUB followed by 0612 or 0624, followed by L, M, H or HH; Model AUB followed by 0812 or 0824, followed by HB, HHB, LB, LLB, MB, SHB or VHB; Model AUB followed by 0924, followed by L, M, H, HH or VH, Model BFB followed by 1212, followed by H, HH, L, LL, M or VH; Model BFB followed by 1224, followed by H, HH, L, LL, M or VH; Model BFB followed by 1248, followed by H, HH, L, LL, M; Model BFC followed by 1012, followed by A, B or C; Model DFB followed by 0405 or 0412, followed by H, L, LL, M; Model DFB followed by 0612, 0812, 0912, 0824 or 0924, followed by H, L or M; Model DFB followed by 0612, 0812, 0824, 0912 or 0924, followed by HH; Model DFB followed by 0424,

.../showpage.html?name=GPWV2.E132003&ccnshorttitle=Fans,+Electric+-Component&objid=102002/3/15





GPWV2.E132003 - Fans, Electric - Component

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followed by H, L, LL, M; Model DFB followed by 0612, 0624, followed by H, HH, L or M; Model DFC followed by 0612, 0624 or 0912, followed by "A" or "B"; Model DFL followed by 0612 or 0624, followed by H, HH, L or M; Model SB followed by 0412, followed by H, L, LL or M; Model SB followed by 0612, 0624, followed by H; Model SB followed by 0612, 0624, 0812, 0824, followed by H, L or M; Model SB followed by 0612, 0624, followed by HD, LD or MD; Model SB followed by 0812, 0824, followed by HH; Model SB followed by 0812, followed by MSA or MSG.

Model AFB followed by 02505, followed by HA, HHA, LA or MA; Model AFB followed by 02512, followed by HA, HHA, LA or MA; Model AFB followed by 0305, followed by HA, LA, LLA, MA; Model AFB followed by 0312, followed by HA, LA, LLA, MA; Model AFB followed by 03505, followed by HA, LA, MA; Model AFB followed by 0405, followed by HD, LD or MD; Model AFB followed by 03512, followed by LA, MA or HA; Model AFB followed by 0405, 0412 or 0424, followed by HD, HHD, LD, MD; Model AFB followed by 0412 or 0424, followed by HD, HHD, LD or MD; Model AFB followed by 0505, 0512, followed by HA, LA or MA; Model AFB followed by 0524, followed by HB, HHB, LB or MB; Model AFB followed by 0605, followed by HB, HHB, HD, HHD, LB, LD, LLD, MB or MD; Model AFB followed by 0605, followed by HD, HHD, LD, LLD or MD; Model AFB followed by 0605, followed by HA, LA or MA; Model AFB followed by 0612, followed by HA, HB, HHB, LA, MA or MB; Model AFB followed by 0612 or 0624, followed by HD, HHD, LB, LD, LLD, MD, VHB or VHD; Model AFB followed by 0624, followed by HB, HHB, LB, MB or VHB; Model AFB followed by 0648, followed by EH, H, H-H, L, M; SH or VH; Model AFB followed by 0705, followed by H, L or M; Model AFB followed by 0712 or 0724, followed by H, HA, HH, HHA, L, LA, M, MA, VH or VHA; Model AFB followed by 0748, followed by H, HH, L or MM; Model AFB followed by 0805, followed by H, L, LL or M; Model AFB followed by 0805, 0812 or 0824, followed by LL; Model AFB followed by 0812 or 0824, followed by H, L, LL, MA, SH or VH; Model AFB followed by 0812 or 0824, followed by HB, HHB, LB, MB, SHB or VHB; Model AFB followed by 0848, followed by H, HH, L or M; Model AFB followed by 0912 or 0924, followed by H, HH, L, M or VH; Model AFB followed by 0948, followed by H, HH, L or M; Model WFB followed by 1212, followed by ME-RDA; Model WFB followed by 1212, followed by ME; Model WFB followed by 1212, 1224 or 1248, followed by VHE; Model WFB followed by 1248, followed by HHE.

Model EFB followed by 0912 or 0924, followed by H, HH, L, M, SH or VH.

Model WFB followed by 1212 or 1224, followed by H, HI, HH, HBE, L, LE, M or ME; Model WFB followed by 1248, followed by HE, LE or ME; Model WFC followed by 1212, 1212, followed by B or BE.

Model BFB followed by 1212, 1224 followed by HE.

Model BFB followed by 0305, 0305, followed by HP, or MP.

Model AFB or ASB followed by 0505 or 0512, followed by HA, LA or MA.

Model DFB followed by 0712, 0724, followed by H, L, M.

Model BFC followed by 1212, followed by A, B; Models BFC1212C, BFC1224C, BFC1248C.

Model EFB followed by 0512, followed by HA, LA or MA, followed by FOO or STD.

showpage.html?main=GPWV2.E132003&encshorttitle=Fans, Electric - Component&objid=1 2002/3/15





## VDE Prüf- und Zertifizierungsinstitut Gutachten mit Fertigungsüberwachung

Ausweis-Nr. / Blatt /  
Licence No. / page  
1764 5

Name und Sitz des Genehmigungs-Inhabers / Name and registered seat of the Licence-holder  
Delta Electronics Inc., 186 Ruey Kuang Road, NEIHU TAIPEI (114), TAIWAN

Aktenzeichen / File ref.  
1164100-2611-0001 / 11826 / F101 / S

letzte Änderung / updated Datum / Date  
2002-02-26 1994-06-08

Dieses Blatt gilt nur in Verbindung mit Blatt 1 des Gutachtens mit Fertigungsüberwachung Nr. 1764.  
*This supplement is only valid in conjunction with page 1 of the Certificate of Conformity with factory surveillance No. 1764.*

Jahresgebühren-Einheiten /  
Annual fee units

BFB0712H/L/M	DC 12 V	3,00
BFB0724H/L/M	DC 24 V	3,00
AFB0405LA/MA/HA/HHA	DC 5 V	4,00
AFB0412LA/MA/HA/HHA	DC 12 V	4,00
ASB0405LA/MA/HA/HHA	DC 5 V	4,00
ASB0412LA/MA/HA/HHA	DC 12 V	4,00
AFB0612LB	DC 12 V	2,00
AFB0612MB	DC 12 V	1,00
AFB0612HB	DC 12 V	1,00
AFB0612HHB	DC 12 V	1,00
AFB0624LB	DC 24 V	2,00
AFB0624MB	DC 24 V	1,00
AFB0624HB	DC 24 V	1,00
AFB0624HHB	DC 24 V	1,00
ASB0605L	DC 5 V	2,00
ASB0605M	DC 5 V	1,00
ASB0605H	DC 5 V	1,00
WFB1248VHE/VHE	DC 48 V	2,00
WFB1212VHE	DC 12 V	2,00
WFB1224VHE	DC 24 V	2,00
DSB0612L/M/H	DC 12 V	3,00
AFC0812A/B	DC 12 V	2,00
AFC0912A/B	DC 12 V	2,00
BFC1212A/B	DC 12 V	2,00
BFB1212LL/L/M/H/HH/VH	DC 12 V	6,00
BFB1224LL/L/M/H/HH/VH	DC 24 V	6,00
AFB0405LD/MD/HD	DC 5 V	3,00
AFB0412LD/MD/HD/HHD	DC 12 V	4,00
AFB0424LD/MD/HD/HHD	DC 24 V	4,00
AFB0612LA/MA/HA	DC 12 V	3,00
ASB0612L/L/M/H/HH	DC 12 V	5,00
ASB0912L/M/H/HH	DC 12 V	4,00
ASB0924LL/L/M/H/HH	DC 24 V	5,00
ASB0924L/M/H/HH	DC 24 V	4,00
AFB0705L/M/H	DC 5 V	3,00
AFB0712L/M/H/HH/VH	DC 12 V	5,00
AFB0724L/M/H/HH/VH	DC 24 V	5,00
AFB0805LL/L/M/H	DC 5 V	4,00
AFB0812LL/L/M/H/HH/VH/SH	DC 12 V	7,00
AFB0824LL/L/M/H/HH/VH/SH	DC 24 V	7,00
AFB0912L/M/H/HH/VH	DC 12 V	4,00

Fortsetzung siehe Blatt 6 /  
continued on page 6

VDE (Testing and Certification Institute) Institut VDE d'Essais et de Certification

Merkmale: 26, C-63078, G18-100



Telefon +49 (0) 69 83 08-0  
Telefax +49 (0) 69 83 08-555





## Descriptions:

1. Delta will not guarantee the performance of the products if the application condition falls outside the parameters set forth in the specification.
2. A written request should be submitted to Delta prior to approval if deviation from this specification is required
3. Please exercise caution when handling fans. Damage may be caused when pressure is applied to the impeller, if the fans are handled by the lead wires, or if the fans are hard-dropped to the production floor.
4. Except as pertains to some special designs, there is no guarantee that the products will be free from any such safety problems or failures as caused by the introduction of powder, droplets of water or encroachment of insect into the hub.
5. The above-mentioned conditions are representative of some unique examples and viewed as the first point of reference prior to all other information.
6. It is very important to establish the correct polarity before connecting the fan to the power source. Positive (+) and Negative (-). Damage may be caused to the fans if connection is with reverse polarity, as there is no foolproof method to protect against such error.
7. Delta fans are not suitable where any corrosive fluids are introduced to their environment.
8. Please ensure all fans are stored according to the storage temperature limits specified. Do not store fans in a high humidity environment. We highly recommend performance testing is conducted before shipping, if the fans have been stored over 6 months.
9. Not all fans are provided with the Lock Rotor Protection feature. If you impair the rotation of the impeller for the fans that do not have this function, the performance of those fans will lead to failure.
10. Please be cautious when mounting the fan. Incorrect mounting of fans may cause excess resonance, vibration and subsequent noise.
11. It is important to consider safety when testing the fans. A suitable fan guard should be fitted to the fan to guard against any potential for personal injury.
12. Except where specifically stated, all tests are carried out at relative (ambient) temperature and humidity conditions of 25°C, 65%. The test value is only for fan performance itself.
13. Be certain to connect an "over 4.7uF" capacitor to the fan externally when the application calls for using multiple fans in parallel, to avoid any unstable power.



SHINKONG SYNTHETIC FIBERS CO.

CERTIFICATE OF ANALYSIS

PBT D202G30 (BLACK)

DF4886

Pf

ITEM	UNIT	TEST METHOD	VALUE
ASH	%	ASTM D2584	29.8
TENSILE STRENGTH	kg/cm <sup>2</sup>	ASTM D638	1200
FLEXURAL STRENGTH	kg/cm <sup>2</sup>	ASTM D790	1840
FLEXURAL MODULUS	kg/cm <sup>2</sup>	ASTM D790	92200
IZOD IMPACT STRENGTH	kg-cm/cm	ASTM D256	8.6
SPECIFIC GRAVITY		ASTM D792	1.60

Lot No: M3084

P/O NO.: CFFE08701

P/N NO.: 4020303718

QA Manager: 廖志崑

Inspector: 鍾瑞蓮 2000年10月7日

成品單位: 送出日期:

C:\QUA\材質證明



## 6. Packing

ALL IP RIGHTS OWNED AND RESERVED BY COOLER MASTER

CONFIDENTIAL

VER:A1

REV	DESCRIPTION	Section	Engineer	Checked	Date

**A**

- 8 Encapsulation
- 7 BACKPLATE : 36PCS
- 6 EPE : 36PCS
- 5 Heatsink : 36PCS
- 4 Grease Cover : 36PCS
- 3 Box : 36pcs
- Die layer : 4\*3=12pcs
- Total Five layers : 3\*12=36pcs
- 2 Partition : 4PCS
- 1 Carton : 1pcs
- Total : 36pcs Heatsinks in one carton

**B**

ET BAND

ANGLE BOARD

Stretched pe film

**C**

Note:  
 Pallet dimension is 105(L)X96(W)X12(H)CM  
 Total dimension is 105(L)X96(W)X153.5(H)CM  
 Total 36 pcs Heatsinks in one carton  
 6 cartons/layer,5 layers  
 Total coolers unit is 1080 PCS  
 Carton dimension:L44.3cm\*W33.6cm\*H28.3cm

**D**

packages for each carton

Part NO	Dimension(mm)	Qty
EPE	105*105*2	1/1
Grease Cover	117*117*25	1/1
Box	107*107*78	1/1
Partition	405*300*3	4/36
Carton	443*336*283	1/36

**1**

Cooler Master Co.,Ltd  
 正式圖面  
 DATE 2016.11.14

**2**

DATE	Drawn	Range	General tolerance:	Part to use the crossed lines
2016.11.14	Jun_roo	0-10	0.1	0.15
2016.11.14	Jun_roo	10-30	0.15	0.2
2016.11.14	Jun_roo	30-50	0.2	0.25
2016.11.14	Jun_roo	50-100	0.25	0.3
2016.11.14	Jun_roo	100~	0.3	0.4

DATE 2016.11.14

**3**

Scale	Shrink Unit	Size	File Name
1/1	MM	A4	Packinging-01-A1