



## 1.Contents

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## 2.Component List

| ITEM | PART NO.        | PART NAME          | DESCRIPTION                        | QUANTITY   | MATERIAL |
|------|-----------------|--------------------|------------------------------------|------------|----------|
| 1    | 601006340-GP    | Mix closely Sample | Fin-ALL1100+CU Base+Heat pipe+sink | 1          | -----    |
| 2    | 310010160-GP    | FAN COVER          | CVR-by socket-92*92*25             | 1          | PC 94V2  |
| 3    | 200022960-GP    | FAN                | Datel 9025                         | 1          | -----    |
| 4    | 520000220-GP    | INTERFACE          | ShinEtsu X-23-7783D                | 0.30/1000g | GREASE   |
| 5    | 150029950-GP3   | CPU SCREW          | SCW-AISI1018-M3                    | 4          | AISI1018 |
| 6    | 450005470-GP    | SPRING             | SPRING- $\phi$ 1.2                 | 4          | SWPC     |
| 7    | 359000530-GP    | FAN LABEL          | LB-25-Pantone 320C                 | 1          | -----    |
| 8    | 300002012-GP    | E_RING             | E_RING                             | 4          | SK5      |
| 9    | 450005290-GP    | FAN Duct           | Fan-duct-91.8*61.98*21.07          | 1          | PC 94V2  |
| 10   | 261003580-GP    | Pipe1              | Heat pipe- $\Phi$ 6.0              | 1          | C1020    |
| 11   | 261003560-GP    | Pipe2              | Heat pipe- $\Phi$ 6.0              | 1          | C1020    |
| 12   | 261003550-GP    | Pipe3              | Heat pipe- $\Phi$ 6.0              | 1          | C1020    |
| 13   | 250030100-01-GP | SINK               | HS-EX-42.77*37.07                  | 1          | Al6063   |
| 14   | 270005870-GP    | CU BASE            | Cu-59*50*5.2                       | 1          | C1100    |
| 15   | 150005630-GP    | CLIP Screw         | SCW-AISI1018-M3*5                  | 4          | AISI1018 |
| 16   | 150008730-GP    | FAN Screw          | SCW-AISI1018-M5*7                  | 4          | AISI1018 |
| 17   | 150014740-GP    | COVER Screw        | SCW-AISI1018-M3                    | 5          | AISI1018 |
| 18   | 450005460-GP    | CLIP               | CLP-BY SOCKET-SUS304               | 2          | SUS304   |
| 19   | 500018860-GP    | FAN GRILL          | FAN GRILL                          | 1          | C1008    |
| 20   | 310010610-GP    | AL_cover           | AL_cover                           | 1          | AL 1100  |

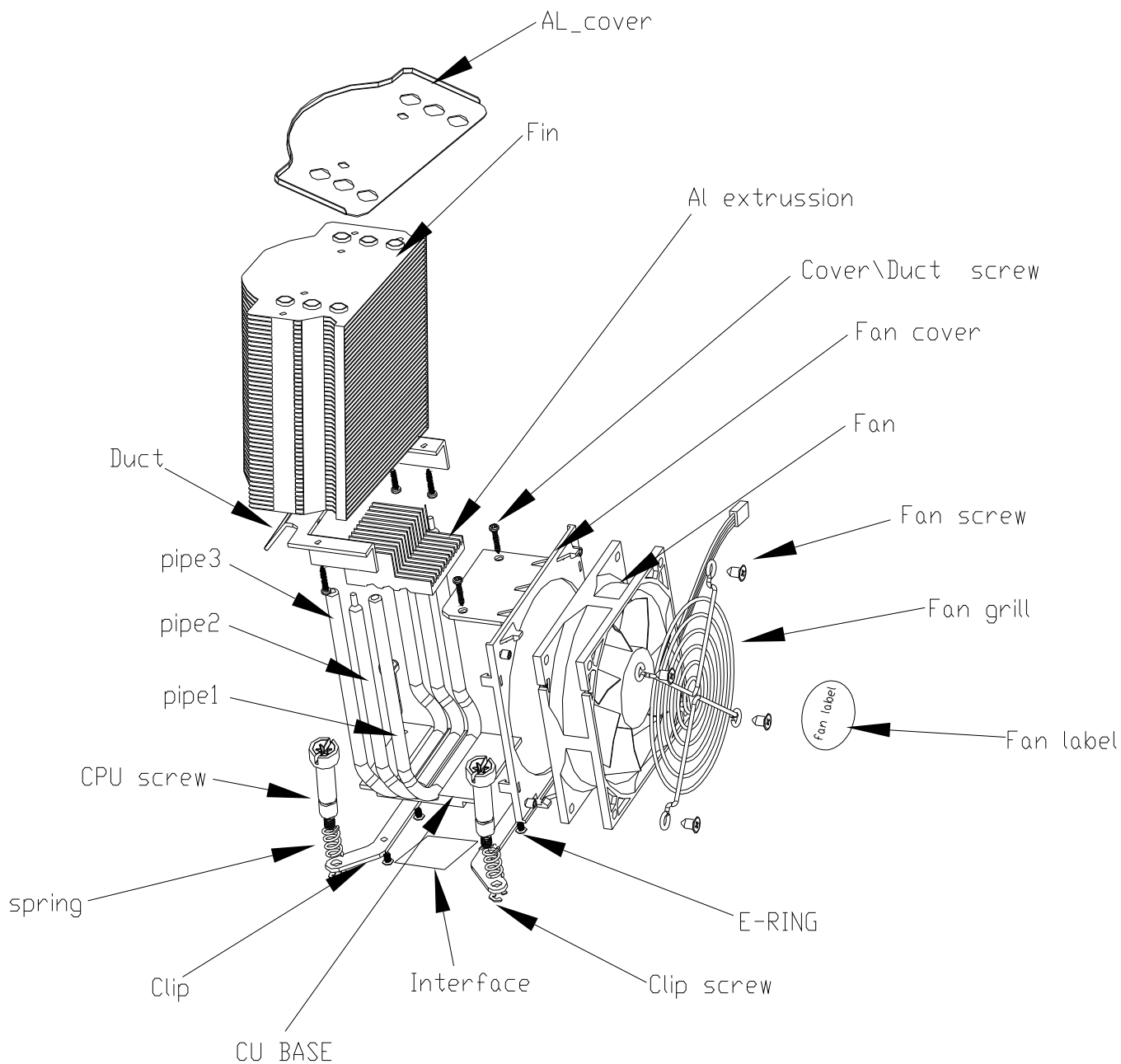


## **3. Whole Set Dimension**

### **3.1 SAMPLE PHOTO**



## 3.2 COOLER EXPLOD

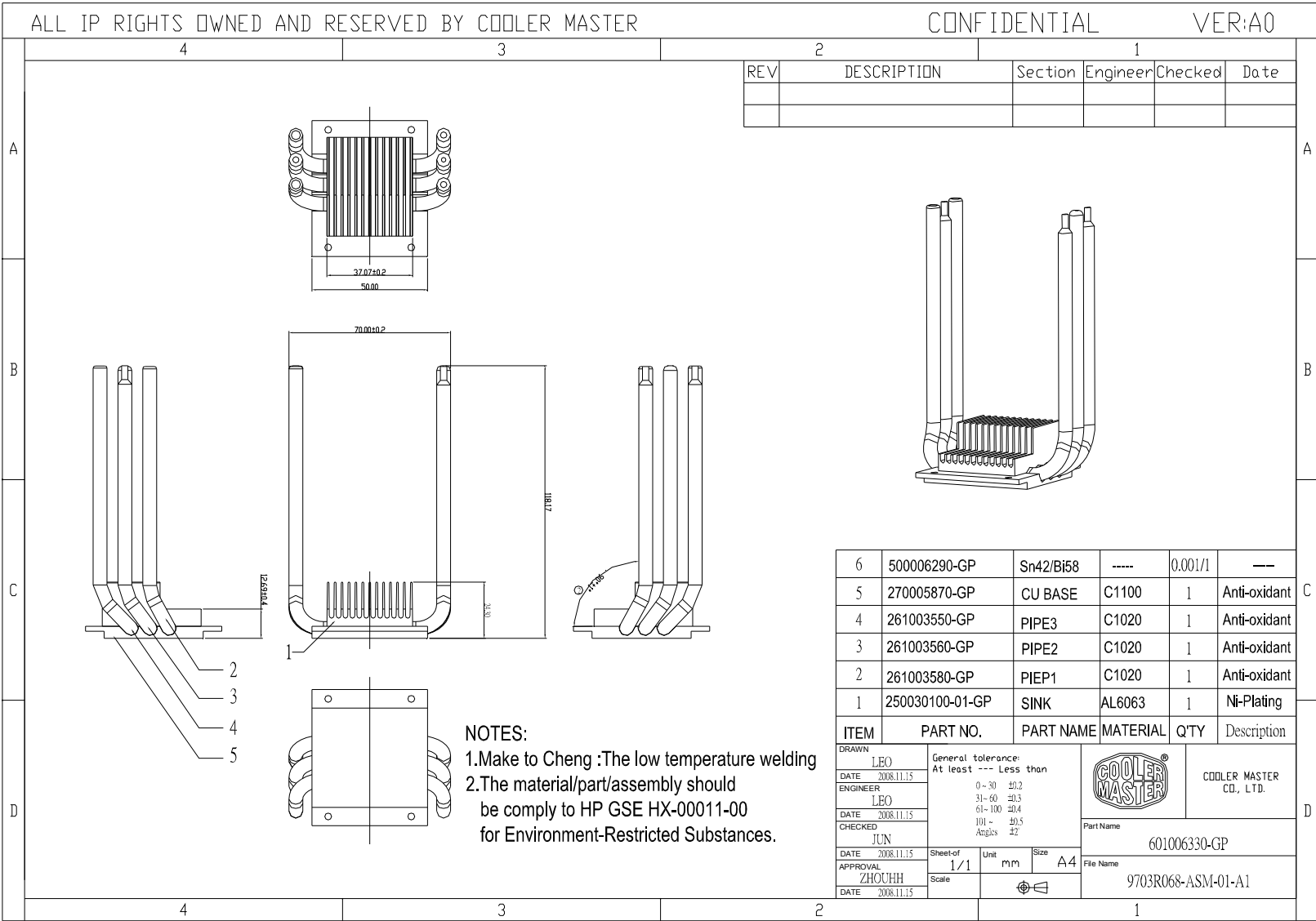




### 3.3 COOLER ASSEMBLY

| ALL IP RIGHTS OWNED AND RESERVED BY COOLER MASTER |  |   |  | CONFIDENTIAL |  | VER:A1 |  |
|---------------------------------------------------|--|---|--|--------------|--|--------|--|
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4.2 Welding Sample



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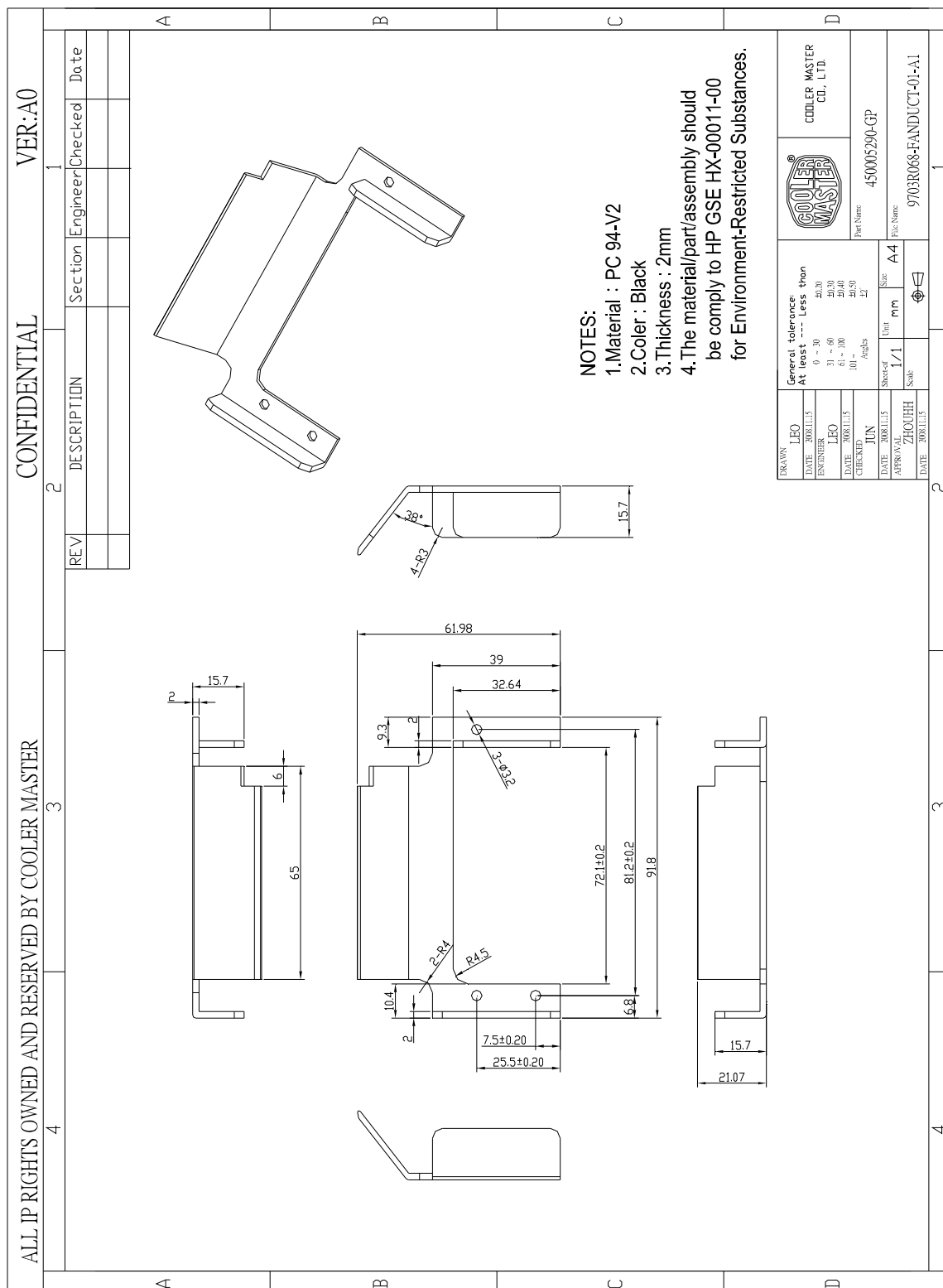




### 4.3 FAN COVER



## 4.4 FAN DUCT

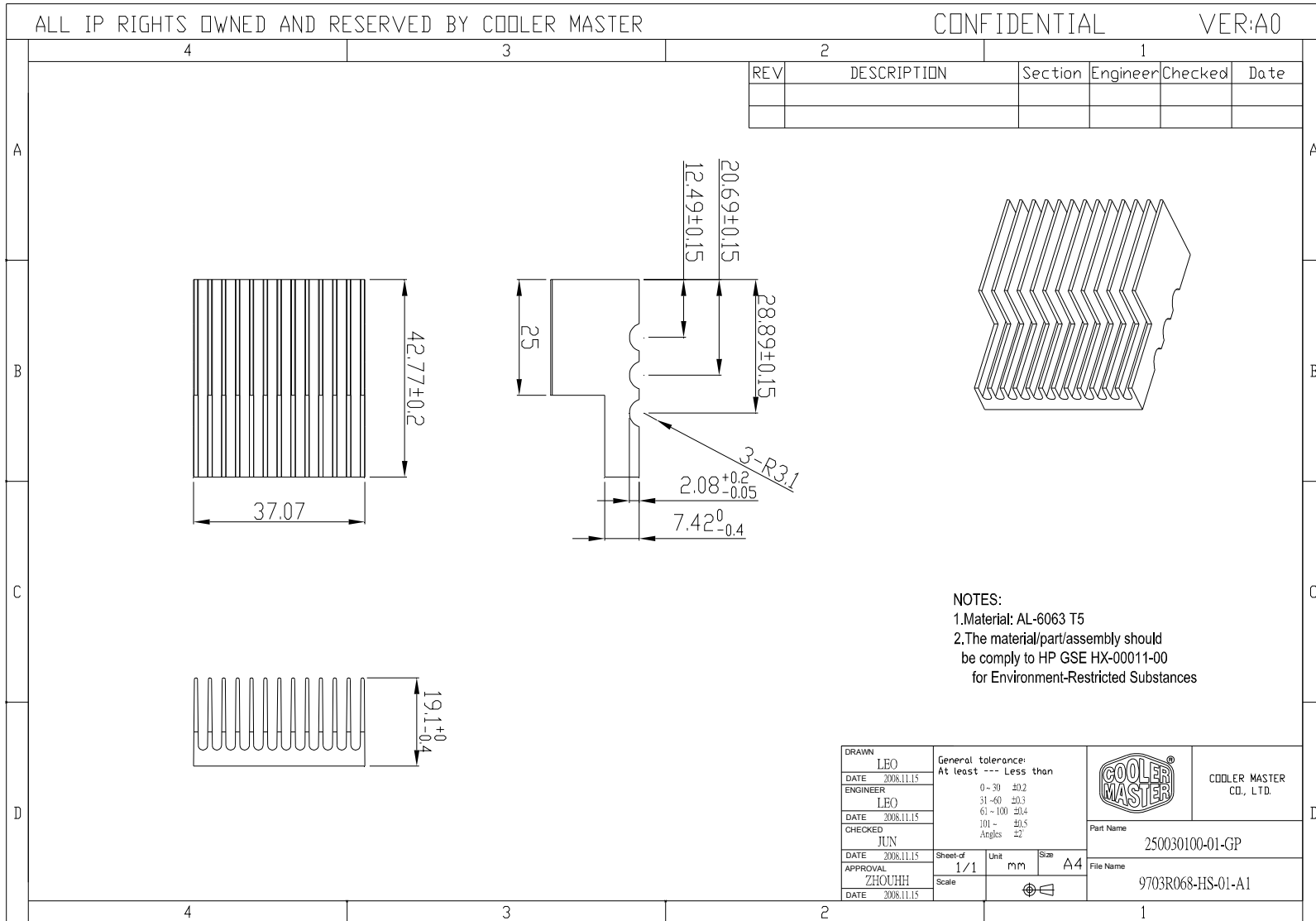




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## 4.5 SINK





## 4.6 AL BASE



## 4.7 FAN LABEL

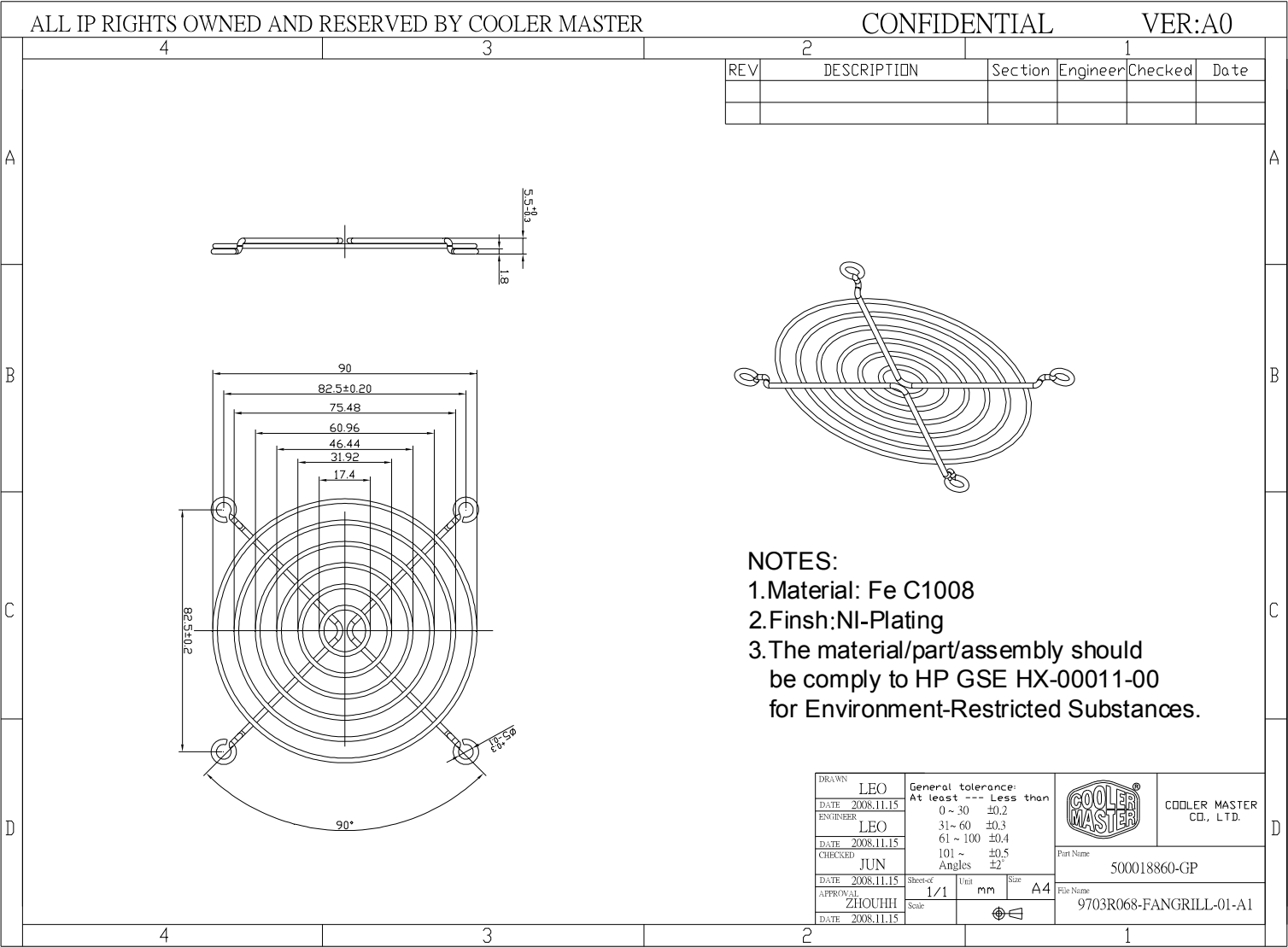
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|-------------------------------------------------------------------------------------|--|-----------------------------------------------------------------------------------------------------------|--|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|---------|-------------|---------|----------|---------|------|--|--|--|--|--|--|--|--|--|--|--|--|
| 4                                                                                   |  | 3                                                                                                         |  | 2                                                                                                                                                                                                                                                                                                            |  | 1                                                                                                                                                                                                                                                                                                         |             |         |             |         |          |         |      |  |  |  |  |  |  |  |  |  |  |  |  |
| D                                                                                   |  | C                                                                                                         |  | B                                                                                                                                                                                                                                                                                                            |  | A                                                                                                                                                                                                                                                                                                         |             |         |             |         |          |         |      |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | <br><b>Pantone 320C</b> |  | <p>Notes:</p> <ol style="list-style-type: none"><li>1. Material: 25% subdue the silver dragon</li><li>2. Color: Pantone 320C.</li><li>3. The surface adds and protects the membrane</li></ol> <p>The material/part assembly should be comply to HP GSE HX-00011-00 for Environment-Restricted Substances</p> |  | <table border="1"><thead><tr><th>REV</th><th>DESCRIPTION</th><th>SECTION</th><th>ENGINEER</th><th>CHECKED</th><th>DATE</th></tr></thead><tbody><tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr></tbody></table> |             | REV     | DESCRIPTION | SECTION | ENGINEER | CHECKED | DATE |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                                                     |  |                                                                                                           |  |                                                                                                                                                                                                                                                                                                              |  | REV                                                                                                                                                                                                                                                                                                       | DESCRIPTION | SECTION | ENGINEER    | CHECKED | DATE     |         |      |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                                                     |  |                                                                                                           |  |                                                                                                                                                                                                                                                                                                              |  |                                                                                                                                                                                                                                                                                                           |             |         |             |         |          |         |      |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                                                     |  |                                                                                                           |  |                                                                                                                                                                                                                                                                                                              |  |                                                                                                                                                                                                                                                                                                           |             |         |             |         |          |         |      |  |  |  |  |  |  |  |  |  |  |  |  |
| DRAWN<br>Sungnyan<br>DATE: 2005/9/13                                                |  | General tolerance<br>At Least --- Less than<br>0~30 1mm                                                   |  | Cooler Master<br>CO., LTD                                                                                                                                                                                                                                                                                    |  |                                                                                                                                                                                                                                                                                                           |             |         |             |         |          |         |      |  |  |  |  |  |  |  |  |  |  |  |  |
| ENGINEER<br>Sungnyan<br>DATE: 2005/9/13                                             |  | Units<br>1 - 1 MM A4                                                                                      |  | Part Name<br><b>359000530-GP</b>                                                                                                                                                                                                                                                                             |  |                                                                                                                                                                                                                                                                                                           |             |         |             |         |          |         |      |  |  |  |  |  |  |  |  |  |  |  |  |
| CHECKED<br>Lilingling<br>DATE: 2005/9/13                                            |  | Scale<br>1:1                                                                                              |  | File Name<br><b>HM0507079-fanlabel-01-A1</b>                                                                                                                                                                                                                                                                 |  |                                                                                                                                                                                                                                                                                                           |             |         |             |         |          |         |      |  |  |  |  |  |  |  |  |  |  |  |  |
| APPROVAL<br>Lancinlun<br>DATE: 2005/9/13                                            |  |                                                                                                           |  |                                                                                                                                                                                                                                                                                                              |  |                                                                                                                                                                                                                                                                                                           |             |         |             |         |          |         |      |  |  |  |  |  |  |  |  |  |  |  |  |
| 4                                                                                   |  | 3                                                                                                         |  | 2                                                                                                                                                                                                                                                                                                            |  | 1                                                                                                                                                                                                                                                                                                         |             |         |             |         |          |         |      |  |  |  |  |  |  |  |  |  |  |  |  |
| D                                                                                   |  | C                                                                                                         |  | B                                                                                                                                                                                                                                                                                                            |  | A                                                                                                                                                                                                                                                                                                         |             |         |             |         |          |         |      |  |  |  |  |  |  |  |  |  |  |  |  |

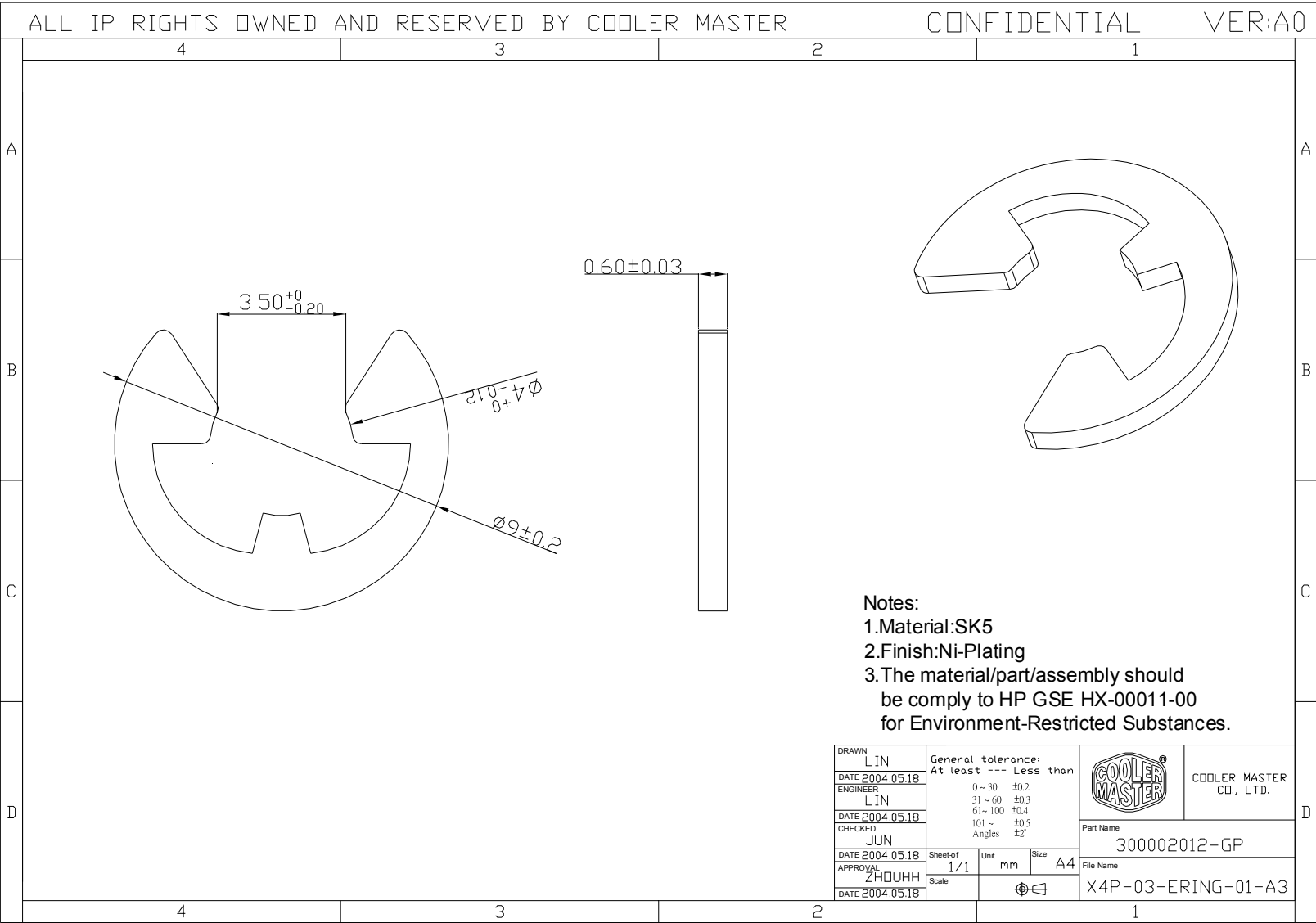


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# 4.8 FAN GRILL





## 4.9 E-RING



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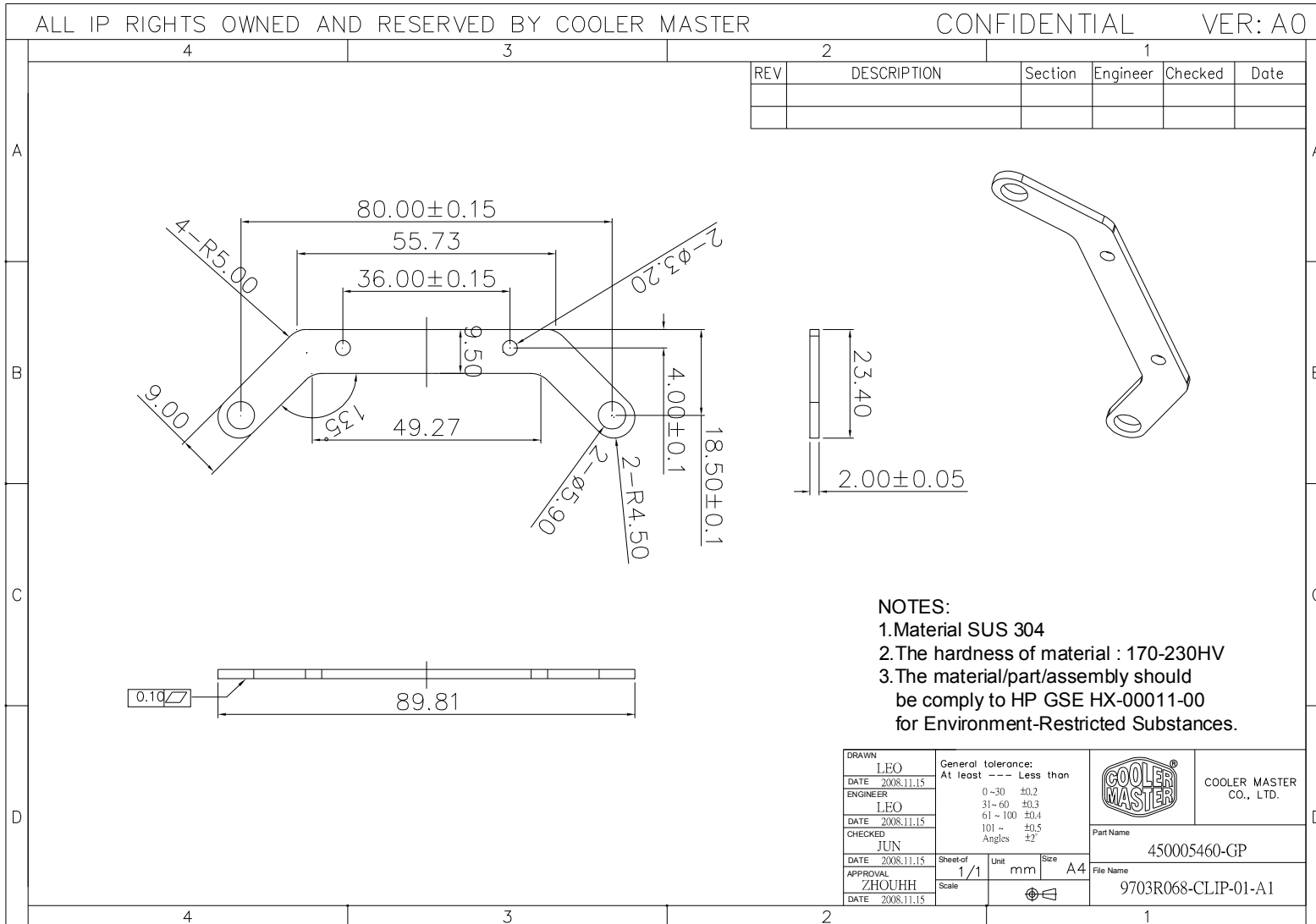
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## 4.10 CLIP



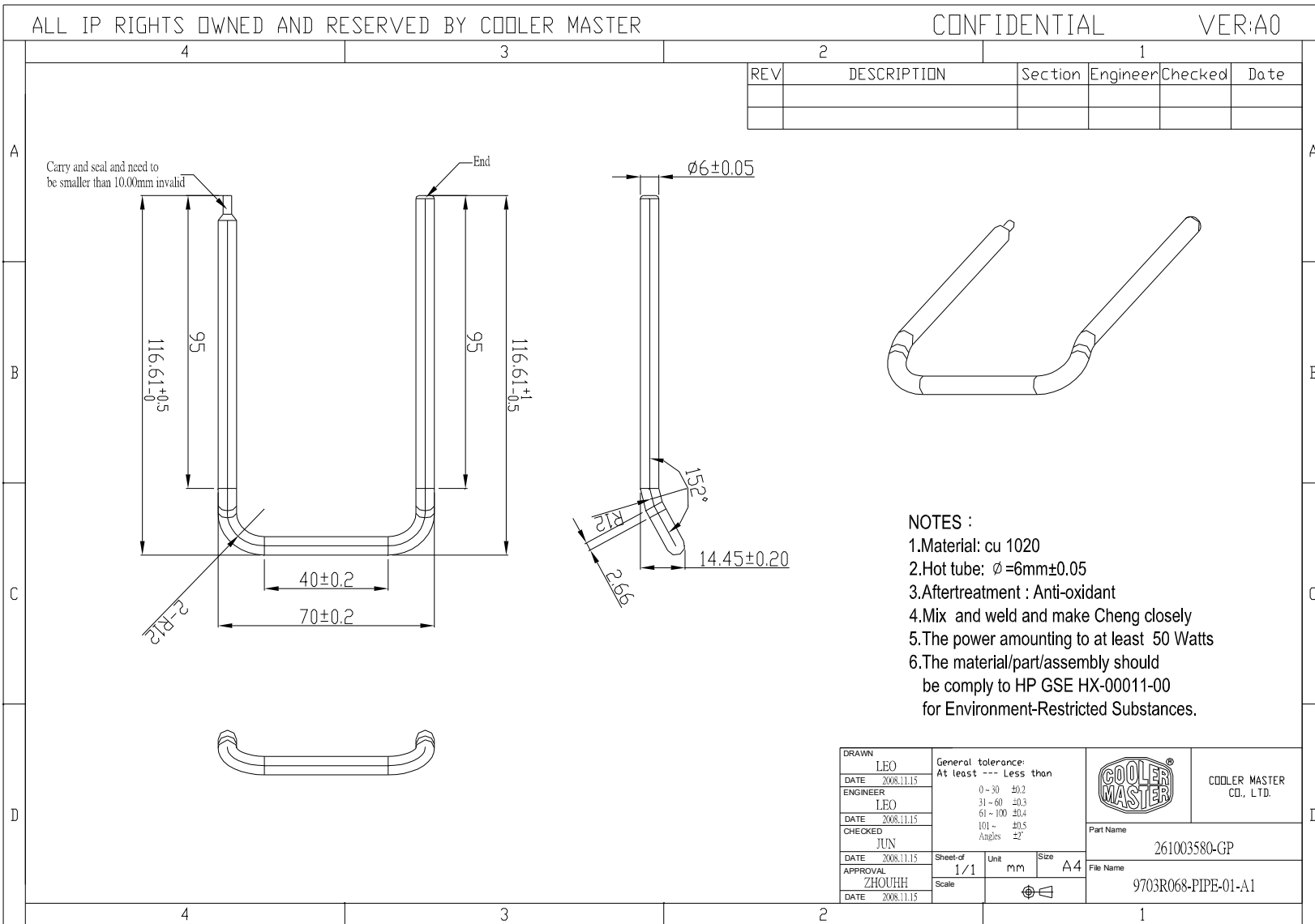




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## 4.11 PIPE1

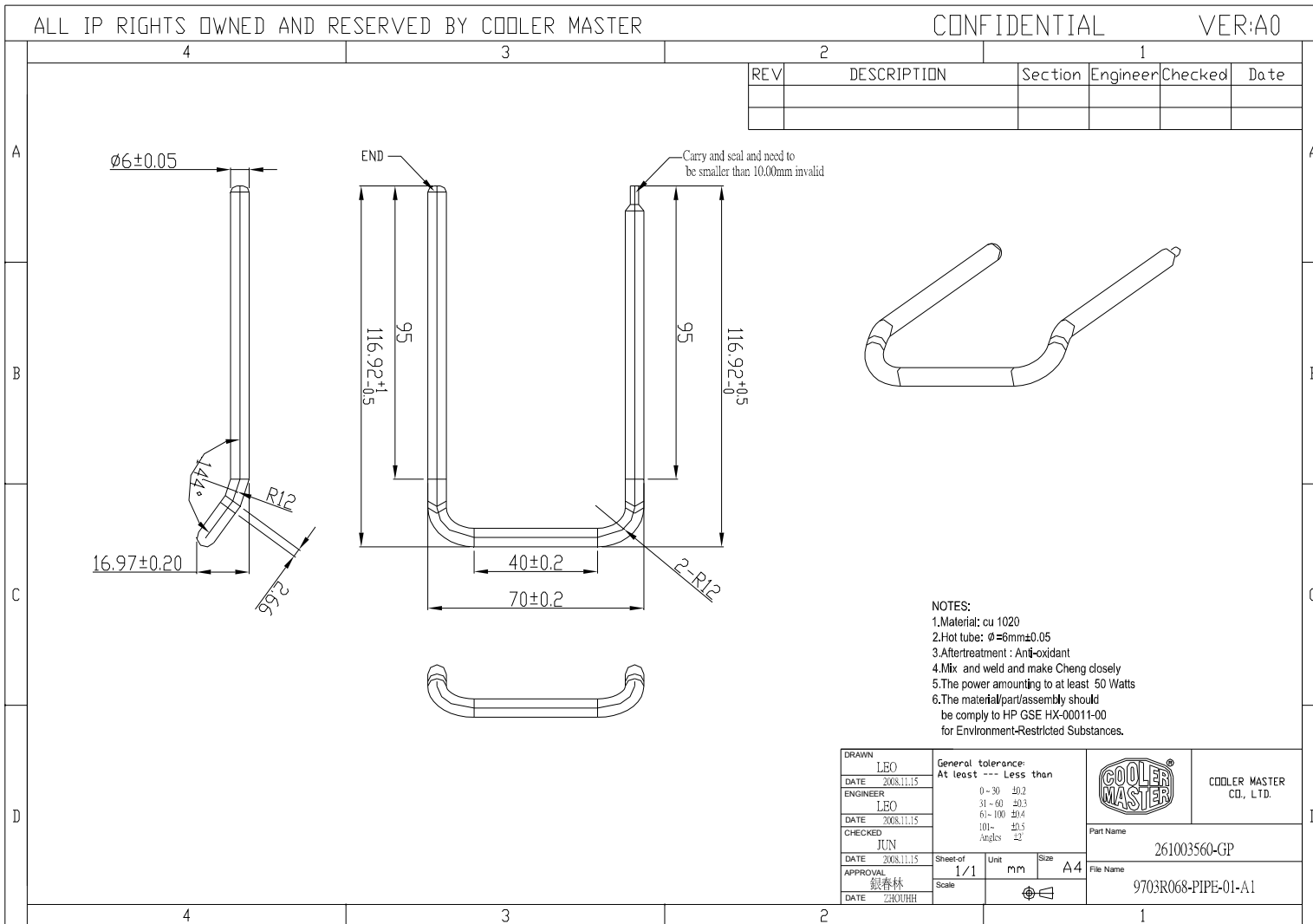




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## 4.12 PIPE2

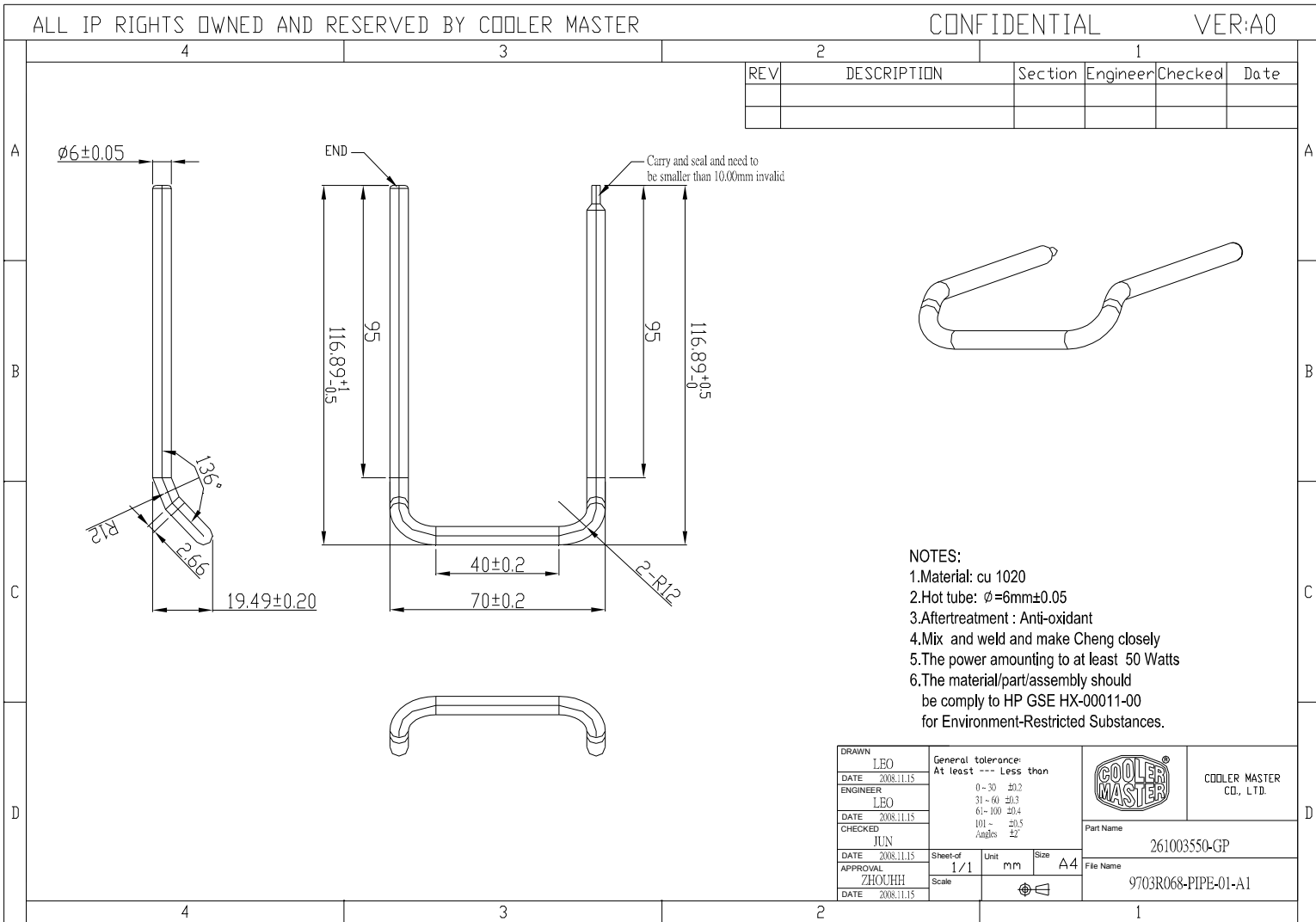




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## 4.13 PIPE3





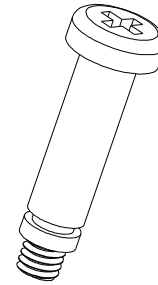
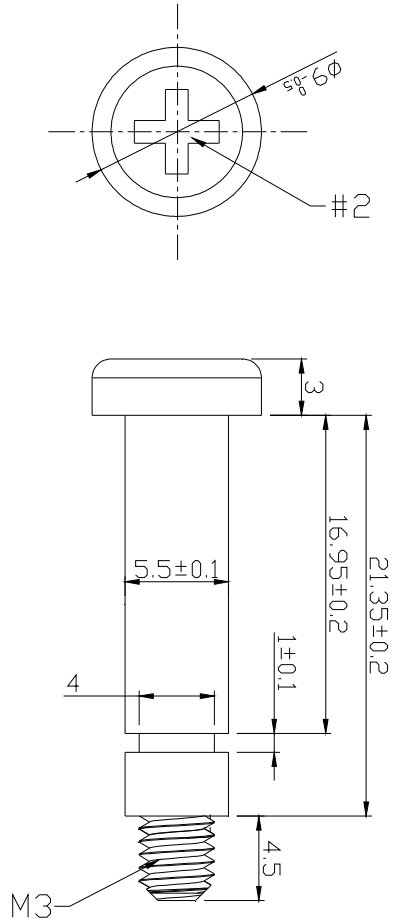
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## 4.14 CPU SCREW

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| 2   |             | 1       |          |         |      |
|-----|-------------|---------|----------|---------|------|
| REV | DESCRIPTION | Section | Engineer | Checked | Date |
|     |             |         |          |         |      |
|     |             |         |          |         |      |



Notes:  
1.Material:AISI1018  
2.Finish:Ni

|                    |          |                                                                                       |                 |            |            |                   |     |                                                                                       |                            |
|--------------------|----------|---------------------------------------------------------------------------------------|-----------------|------------|------------|-------------------|-----|---------------------------------------------------------------------------------------|----------------------------|
| DRAWN<br>wilson    | TOL ±    | General tolerance:<br>Don't use the crossed items                                     |                 |            |            |                   |     |  | COOLER MASTER<br>CO., LTD. |
| DATE 2011.9.19     | Range    | 0 ~ 10                                                                                | 0.1             | 0.1        | 0.15       | 0.2               | 0.3 |                                                                                       |                            |
| ENGINEER<br>wilson | 10 ~ 30  | 0.15                                                                                  | 0.2             | 0.25       | 0.3        | 0.4               | 0.6 |                                                                                       |                            |
| DATE 2011.9.19     | 30 ~ 50  | 0.2                                                                                   | 0.3             | 0.35       | 0.4        | 0.6               | 0.8 |                                                                                       |                            |
| CHECKED<br>zhouhh  | 50 ~ 100 | 0.25                                                                                  | 0.4             | 0.4        | 0.6        | 0.8               | 1.0 |                                                                                       |                            |
| DATE 2011.9.19     | 100 ~    | 0.3                                                                                   | 0.5             | 0.6        | 0.8        | 1.0               | 1.5 |                                                                                       |                            |
| APPROVAL<br>zhouhh | Angles   | 1°                                                                                    | 2°              | 3°         | 3°         | 5°                | 6°  |                                                                                       |                            |
| DATE 2011.9.19     | Scale    |  | Sheet of<br>1/1 | Unit<br>mm | Size<br>A4 | 9703R068-SCREW-A1 |     |                                                                                       |                            |



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# 4.15 SPRING

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CONFIDENTIAL

VER:A0

| 4   |             | 3       |          | 2       |      | 1 |  |
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| REV | DESCRIPTION | Section | Engineer | Checked | Date |   |  |
|     |             |         |          |         |      |   |  |

NOTES:  
1.Material:Piano Wires  
2.Finish: Ni-Plating  
3.The material/part/assembly should be comply to HP GSE HX-00011-00 for Environment-Restricted Substances.

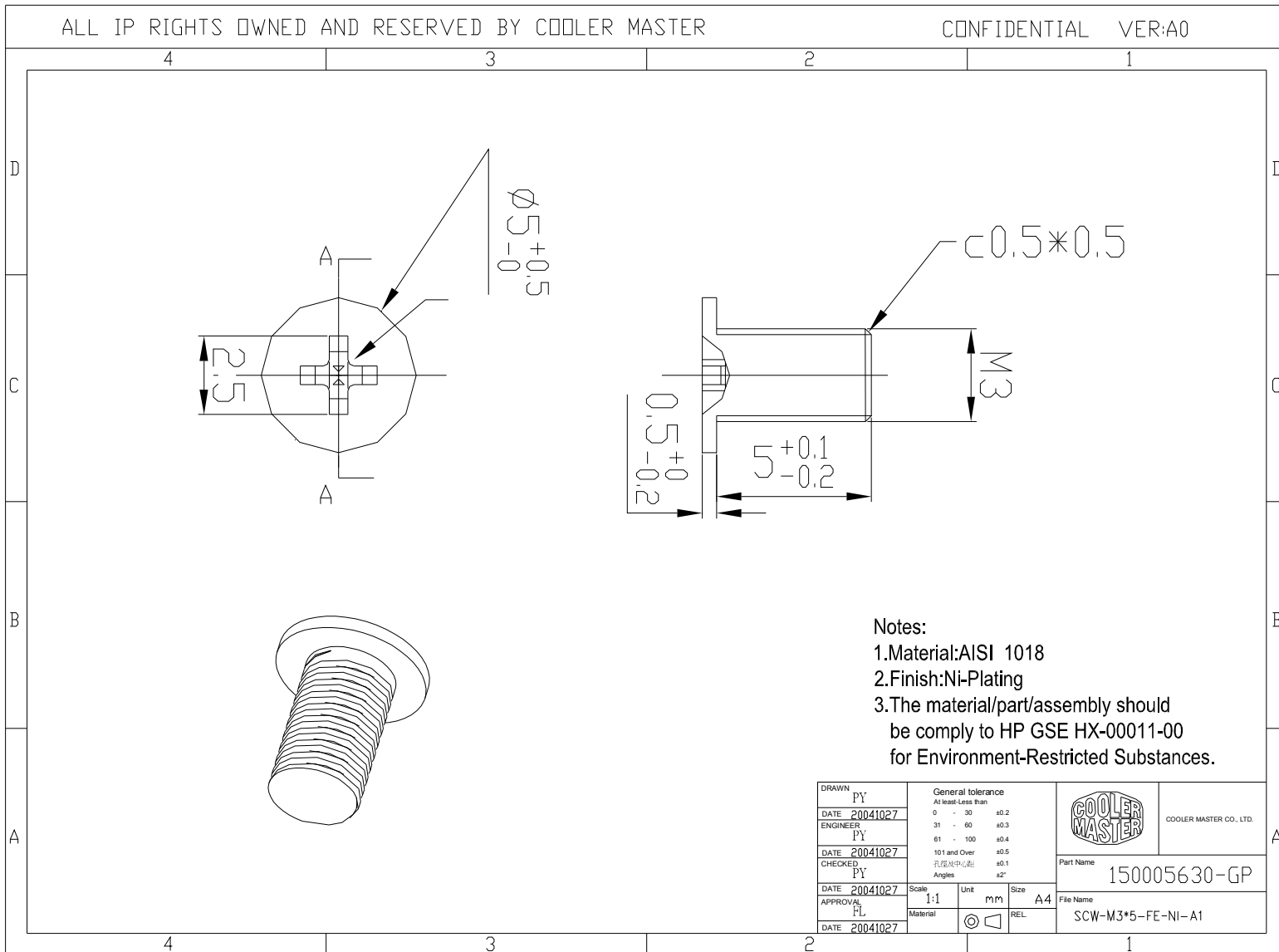
|                                       |                                                                                                                         |            |                            |                                    |
|---------------------------------------|-------------------------------------------------------------------------------------------------------------------------|------------|----------------------------|------------------------------------|
| DRAWN<br>LEO<br>DATE 2008.11.15       | General tolerance:<br>At least --- Less than<br>0 ~ 30 ±0.2<br>31 ~ 60 ±0.3<br>61 ~ 100 ±0.4<br>101 ~ ±0.5<br>Angles ±2 |            | COOLER MASTER<br>CO., LTD. |                                    |
| ENGINEER<br>LEO<br>DATE 2008.11.15    |                                                                                                                         |            |                            |                                    |
| CHECKED<br>JUN                        |                                                                                                                         |            |                            |                                    |
| DATE 2008.11.15                       |                                                                                                                         |            |                            |                                    |
| APPROVAL<br>ZHOUHH<br>DATE 2008.11.15 | Sheet of<br>1/1                                                                                                         | Unit<br>mm | Size<br>A4                 | Part Name<br>450005470-GP          |
|                                       | Scale                                                                                                                   |            |                            | File Name<br>9703R068-SPRING-01-A1 |



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## 4.16 CLIP SCREW

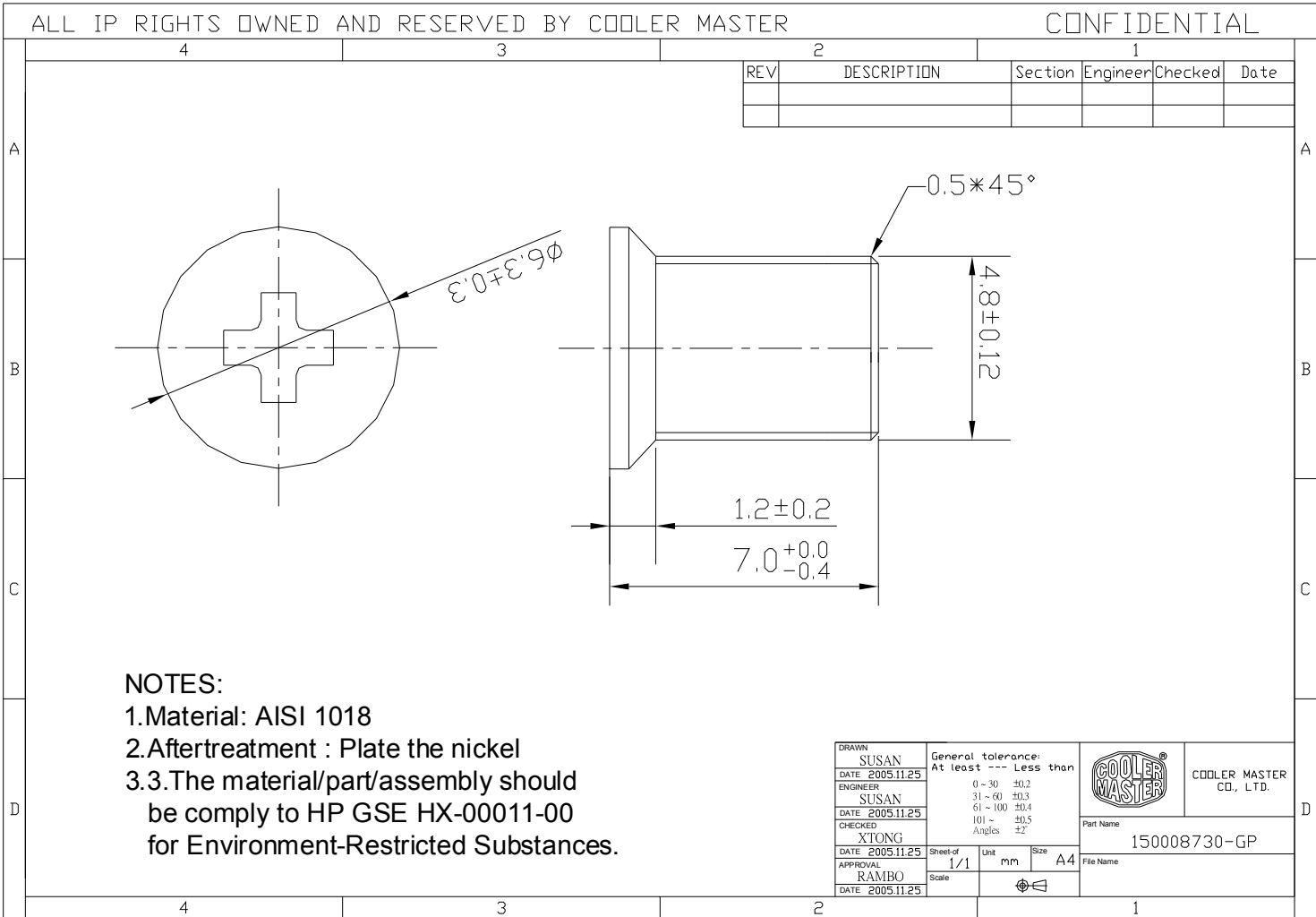




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## 4.17 FAN SCREW

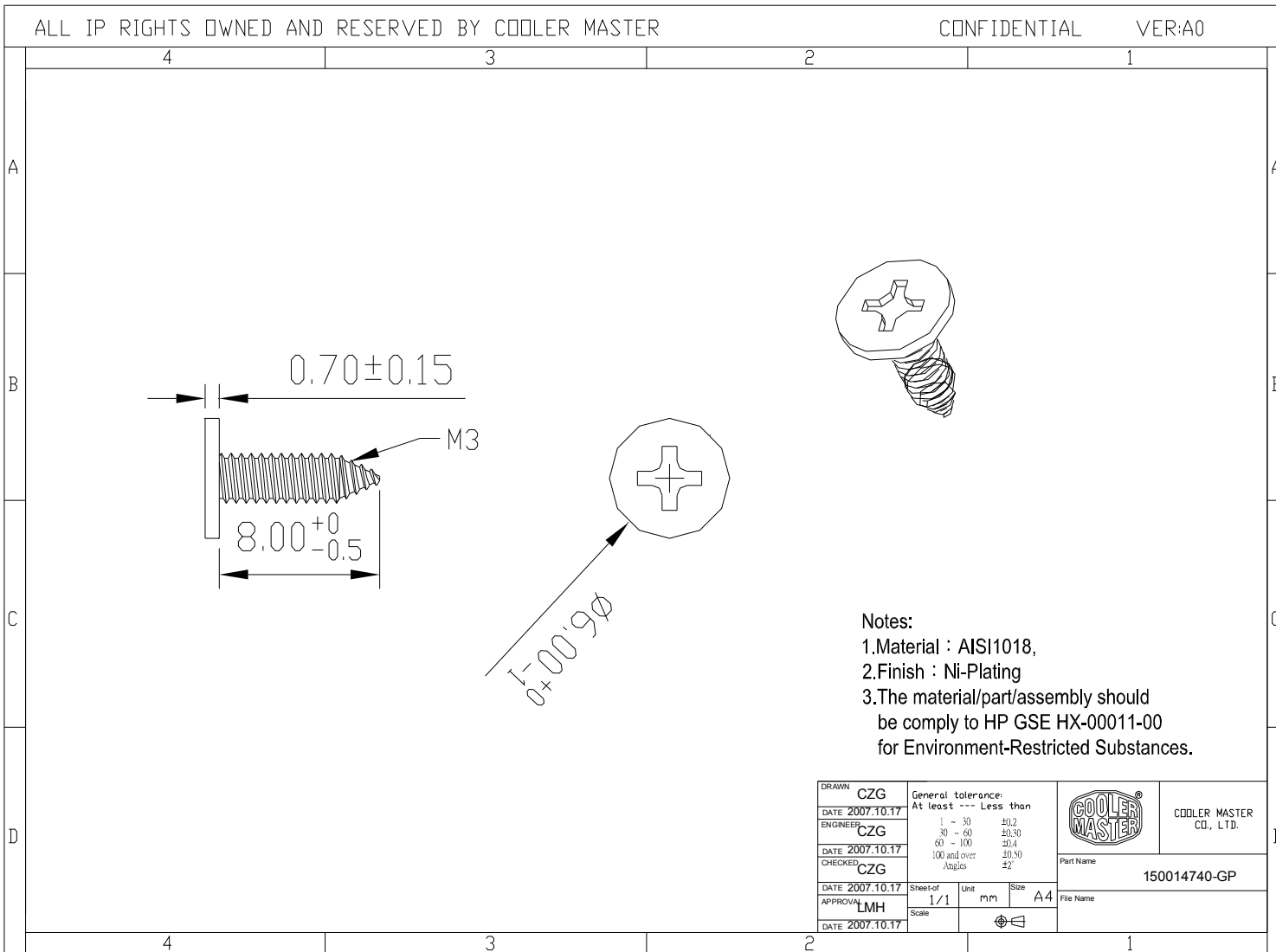




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## 4.18 COVER/DUCT SCREW







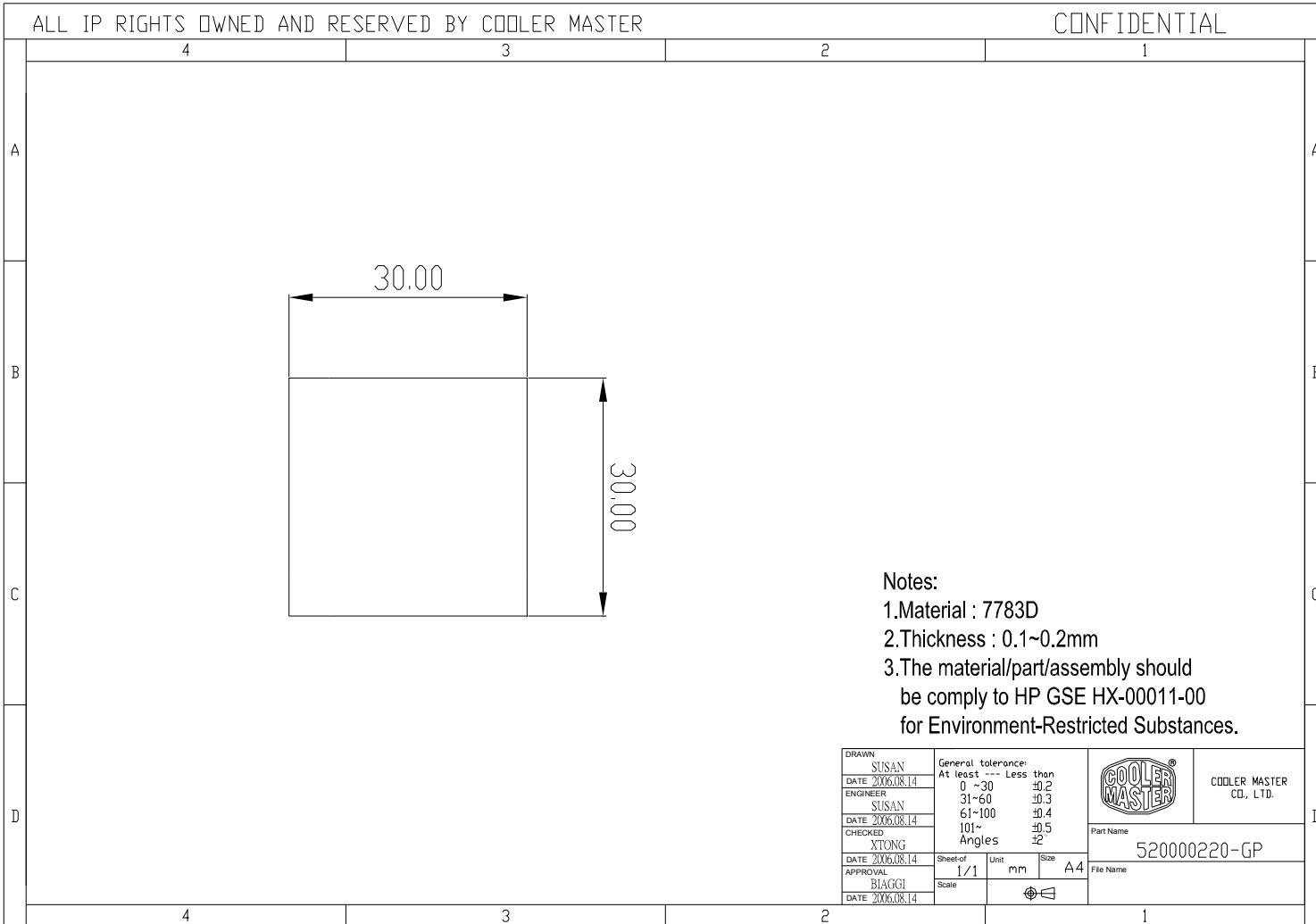
#### 4.19 Al\_cover



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## 4.20 INTERFACE





## 4.21 FAN



### SPECIFICATION FOR APPROVAL

|                    |                |      |    |
|--------------------|----------------|------|----|
| Customer.          | COOLERMATER    |      |    |
| Description.       | DC FAN         |      |    |
| Part No.           | 200022960-GP   | REV. |    |
| Delta Model No.    | AFB0912SH-BU35 | REV. | 02 |
| Sample Issue No.   |                |      |    |
| Sample Issue Date. | AUG-24-2011    |      |    |

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

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

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

Delta Electronics, Inc.  
HeTianXia High-Tech Industrial Park.  
Shi Jie Town, Dong Guan City.  
Guangdong Province, China. P. R. C.  
TEL : 86-769-86329008  
FAX : 86-769-86631589



Delta Electronics, Inc.

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Guangdong Province, China. P. R. C.

TEL : 86-769-86329008

FAX : 86-769-86631589

## SPECIFICATION FOR APPROVAL

Customer: COOLERMATER

Description: DC FAN

Customer P/N: 200022960-GP REV:

Delta Model NO.: AFB0912SH-BU35 Delta Safety Model NO.: AFB0912SH-A

Sample Rev: 02 Issue NO:

Sample Issue Date: AUG-24-2011 Quantity:

### 1. SCOPE:

THIS SPECIFICATION DEFINES THE ELECTRICAL AND MECHANICAL CHARACTERISTICS OF THE DC BRUSHLESS AXIAL FLOW FAN. THE FAN MOTOR IS WITH SINGLE PHASE AND FOUR POLES.

### 2. CHARACTERS:

ALL CHARACTERS ARE MEASURED UNDER THE STANDARD ENVIRONMENTAL CONDITION (25°C AND 1 ATM).

| ITEM                                       | DESCRIPTION                                                                       |
|--------------------------------------------|-----------------------------------------------------------------------------------|
| RATED VOLTAGE                              | 12.0 VDC                                                                          |
| OPERATION VOLTAGE                          | 10.8 - 12.6 VDC                                                                   |
| INPUT CURRENT                              | 0.75 (MAX. 1.00) A<br>(SAFETY CURRENT 1.00A)                                      |
| INPUT POWER                                | 9.0 (MAX. 12.00) W                                                                |
| SPEED (REF.)                               | 5000 R.P.M.±10%                                                                   |
| MAX. AIR FLOW<br>(AT ZERO STATIC PRESSURE) | 3.062 (MIN. 2.756 ) M <sup>3</sup> /MIN.<br>108.08 (MIN. 97.27 ) CFM              |
| MAX. AIR PRESSURE<br>(AT ZERO AIRFLOW)     | 13.57 (MIN.10.99 ) mmH <sub>2</sub> O<br>0.534 (MIN. 0.433 ) inchH <sub>2</sub> O |
| ACOUSTICAL NOISE (AVG.)                    | 55.0 (MAX. 59.0) dB-A                                                             |
| INSULATION TYPE                            | UL: CLASS A                                                                       |

(continued)

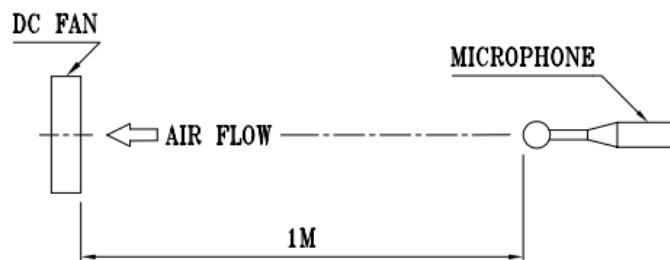


PART NO: 200022960-GP

DELTA MODEL: AFB0912SH-BU35

|                        |                                                                                                                                     |
|------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| INSULATION STRENGTH    | 10 MEG OHM MIN. AT 500 VDC<br>(BETWEEN FRAME AND (+) TERMINAL)                                                                      |
| DIELECTRIC STRENGTH    | 5 mA MAX. AT 500 VAC 60 Hz<br>ONE MINUTE, (BETWEEN FRAME AND<br>(+) TERMINAL)                                                       |
| EXTERNAL COVER         | OPEN TYPE                                                                                                                           |
| LIFE EXPECTANCE        | 70,000 HOURS CONTINUOUS OPERATION<br>AT 40 °C WITH 15 ~ 65 %RH.                                                                     |
| ROTATION               | CLOCKWISE VIEW<br>FROM NAME PLATE SIDE                                                                                              |
| OVER CURRENT SHUT DOWN | THE CURRENT WILL SHUT DOWN WHEN<br>LOCKING ROTOR                                                                                    |
| LEAD WIRE              | UL 1061 -F- AWG #26<br>BLACK WIRE:NEGATIVE(-)<br>RED WIRE:POSITIVE(+)<br>YELLOW WIRE: FREQUENCY (F00)<br>BLUE WIRE: FREQUENCY (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.



PART NO: 200022960-GP

DELTA MODEL: AFB0912SH-BU35

### 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 ----- 120 GRAMS

### 4. ENVIRONMENTAL:

- 4-1. OPERATING TEMPERATURE ----- -10 TO +70 DEGREE C
- 4-2. STORAGE TEMPERATURE ----- -40 TO +75 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.

#### 5-3. SOFT-START/REDUCE FUNCTION FOR PWM (ENVIRONMENT TEMPERATURE AT 25°C)

WHEN IT CHANGE PWM DUTY FROM 0% TO 100%, THE SOFT START TIME IS LARGER THAN 13 SECS TO MAXIMUM SPEED.

### 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: 200022960-GP

DELTA MODEL: AFB0912SH-BU35

## 8. BASIC RELIABILITY REQUIREMENT:

8-1. THERMAL CYCLING  
LOW TEMPERATURE: -40°C  
HIGH TEMPERATURE: +80°C  
SOAK TIME: 30 MINUTES  
TRANSITION TIME < 5 MINUTES  
DUTY CYCLES: 5

8-2. HUMIDITY EXPOSURE  
TEMPERATURE: +25°C ~ +65°C  
HUMIDITY: 90-98% RH @ +65°C  
FOR 4 HOURS/CYCLE  
POWER: NON-OPERATING  
TEST TIME: 168 HOURS

8-3. VIBRATION  
TEMPERATURE: +25°C  
ORIENTATION: X, Y, Z  
POWER: NON-OPERATING  
VIBRATION LEVEL: OVERALL  $g_{RMS}=3.2$

| FREQUENCY(Hz) | PSD( $G^2/Hz$ ) |
|---------------|-----------------|
| 10            | 0.040           |
| 20            | 0.100           |
| 40            | 0.100           |
| 800           | 0.002           |
| 1000          | 0.002           |

TEST TIME: 2 HOURS ON EACH ORIENTATION

8-4. MECHANICAL SHOCK  
TEMPERATURE: +25°C  
ORIENTATION: X, Y, Z  
POWER: NON-OPERATING  
ACCELERATION: 20 G MIN.  
PULSE: 11 ms HALF-SINE WAVE  
NUMBER OF SHOCKS: 5 SHOCKS  
FOR EACH DIRECTION

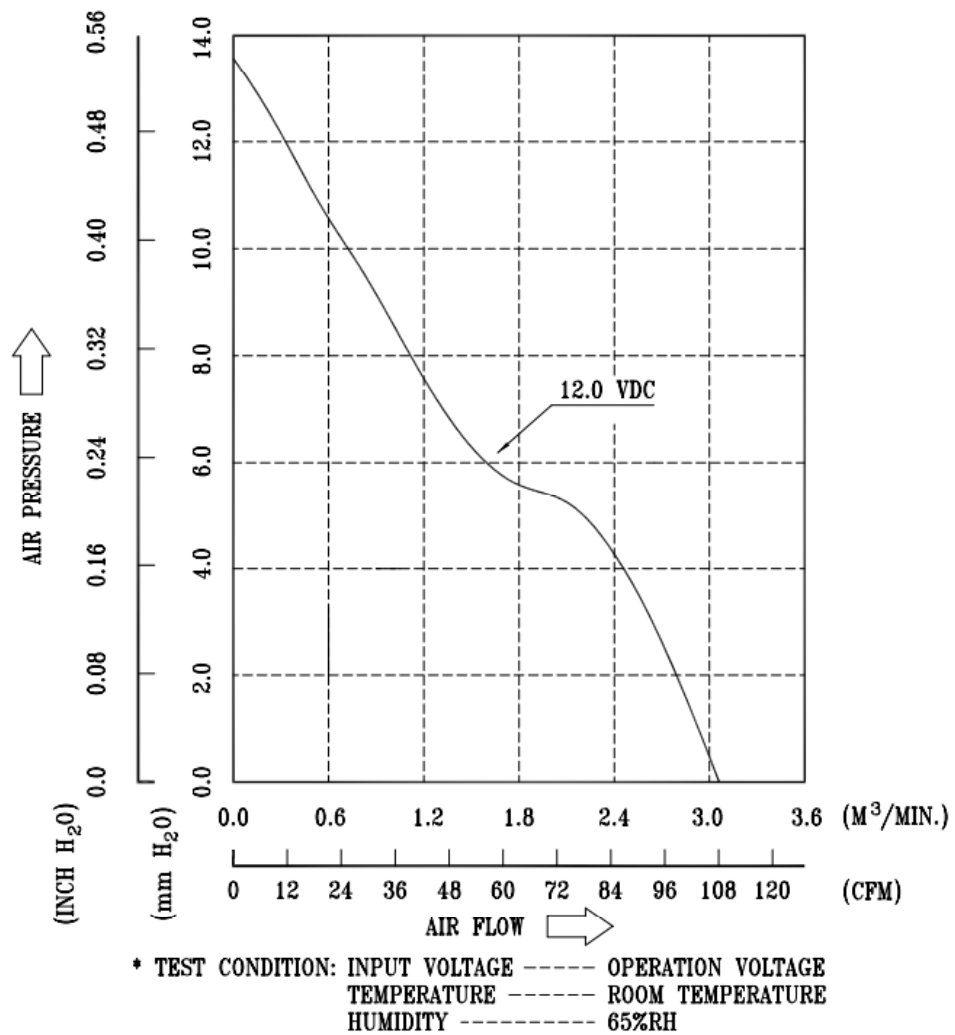
8-5. LIFE  
TEMPERATURE: MAX , OPERATING TEMPERATURE  
POWER: OPERATING  
DURATION: 1000 HOURS MIN.



PART NO: 200022960-GP

DELTA MODEL: AFB0912SH-BU35

## 9. P & Q CURVE:







PART NO: 200022960-GP

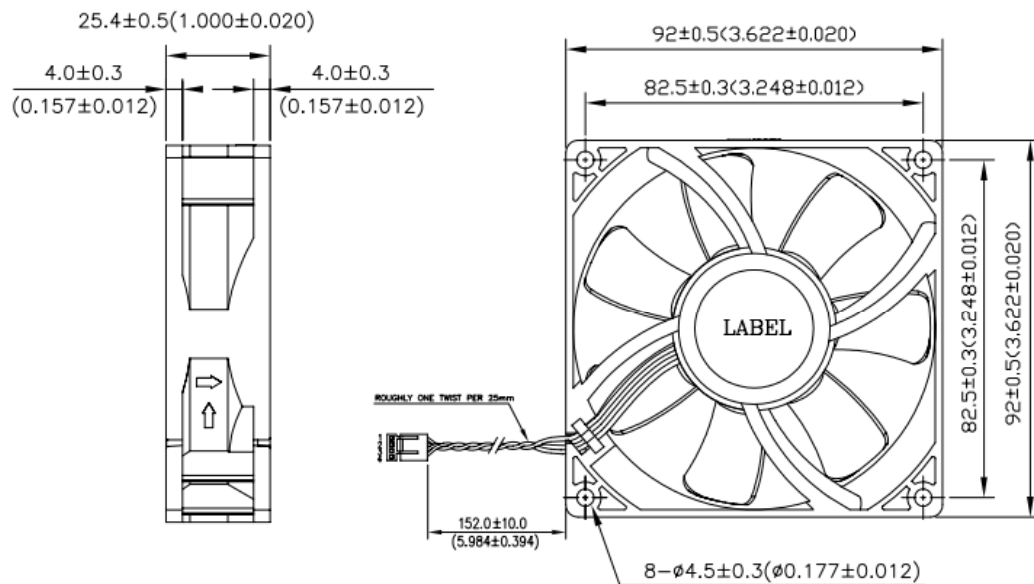
DELTA MODEL: AFB0912SH-BU35

## 10. DIMENSION DRAWING:

LABEL:



OR



UNIT: MM(INCH)

### NOTES:

1. LEAD WIRE: UL1061 AWG#26  
PIN 1: BLACK WIRE---(-)  
PIN 2: RED WIRE----(+)  
PIN 3: YELLOW WIRE---(F00)  
PIN 4: BLUE WIRE---(PWM)
2. HOUSING: MOLEX 47054-1000 (WHITE) OR EQUIVALENT
3. TERMINAL: MOLEX 2759T 08-50-0113 OR EQUIVALENT
4. THIS PRODUCT IS RoHS COMPLIANT

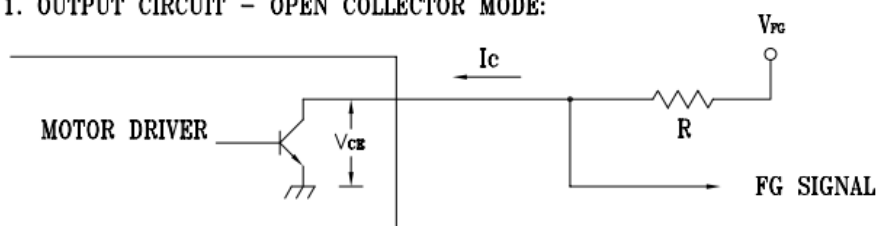


PART NO: 200022960-GP

DELTA MODEL: AFB0912SH-BU35

## 11. FREQUENCY GENERATOR (FG) SIGNAL:

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



#### CAUTION:

THE LEAD WIRE OF FG SIGNAL CAN NOT TOUCH  
THE LEAD WIRE OF POSITIVE OR NEGATIVE.

### 2. SPECIFICATION:

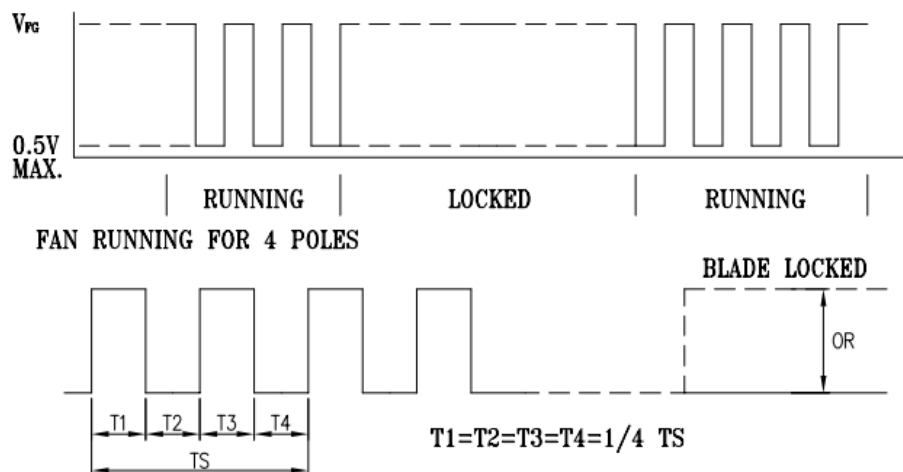
$V_{ce(sat)} = 0.5V$  MAX

$V_{FG} = 12.6V$  MAX

$I_c = 5mA$  MAX.

$R \geq V_{FG} / I_c$

### 3. FREQUENCY GENERATOR WAVEFORM:



$N = R.P.M$

$TS = 60/N(SEC)$

\*VOLTAGE LEVEL AFTER BLADE LOCKED

\*4 POLES

page: 7

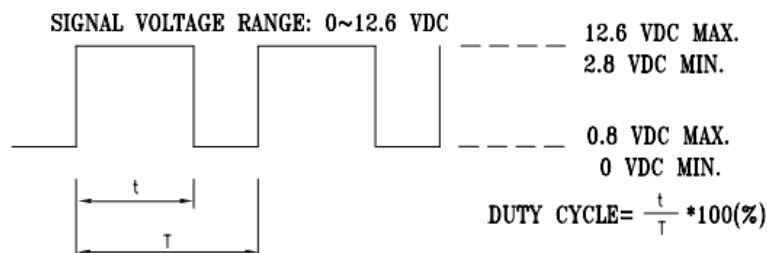
A00



PART NO: 200022960-GP

DELTA MODEL: AFB0912SH-BU35

## 12. PWM CONTROL SIGNAL:



- THE FREQUENCY FOR CONTROL SIGNAL OF THE FAN SHALL BE ABLE TO ACCEPT A 20KHZ~30KHZ.
- THE PREFERRED OPERATING POINT FOR THE FAN IS 25K HZ.
- AT 100% DUTY CYCLE, THE ROTOR WILL SPIN AT MAXIMUM SPEED.
- WITH CONTROL SIGNAL LEAD DISCONNECTED, THE FAN WILL SPIN AT MAXIMUM SPEED.

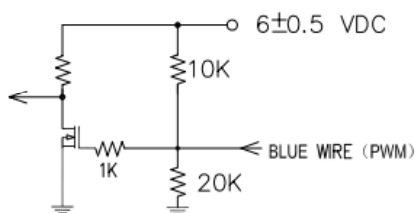
## 13. SPEED VS PWM CONTROL SIGNAL: (AT RATED VOLTAGE & PWM FREQUENCY=25KHZ)

| DUTY CYCLE (%) | SPEED R.P.M. | CURRENT (A) TYP. |
|----------------|--------------|------------------|
| 100            | 5000±10%     | 0.75             |
| 70             | 2600±300     | 0.15(REF)        |
| 0~30           | 1400±300     | 0.05(REF)        |

\* PWM SIGNAL  
PWM FREQUENCY = 25KHz



## 14. PWM CONTROL LEAD WIRE INPUT IMPEDANCE:



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



## *Application Notice*

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 fan was 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, if there is no foolproof method to protect against such error specifically mentioned in this spec.
7. Delta fans without special protection 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 room (ambient) temperature and relative humidity conditions of 25°C, 65% RH. The test value is only for fan performance itself.
13. Be certain to connect an “4.7μF or greater” capacitor to the fan externally when the application calls for using multiple fans in parallel, to avoid any unstable power.



## GPWV2.E132003

### Fans, Electric - Component

[Page Bottom](#)
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### Fans, Electric - Component

[See General Information for Fans, Electric - Component](#)

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, followed by (Y), where (Y) may be xxxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model AFB followed by 0505, followed by HB, LB or MB, followed by (Y), where (Y) may be xxxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model AFB followed by 0512, followed by HB, HHB, LB or MB, followed by (Y), where (Y) may be xxxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model AFB followed by 0605, followed by H, L or M, followed by R00, R05, RR0 or RR05, followed by (Y), where (Y) may be xxxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model AFB followed by 0805, followed by H, L or M; Model AFB followed by 0612, 0624, followed by EH, SH VH; Model AFB0612LB followed by (Y), where (Y) may be xxxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model AFB followed by 0612, 0624, 0812, 0824, 0912 or 0924, followed by H, HB, HH, HHB, LB, LLB, MB, SHB or VHB, followed by (Y), where (Y) may be xxxxxx, where x may be A through Z, 0 through 9, "-" or blank; Models ASB0412MA, ASB0412LA, ASB0405MA; Model ASB followed by 0405, 0412, followed by HA, HHA, LA or MA, followed by (Y), where (Y) may be xxxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model ASB followed by 0505, followed by HB, LB or MB, followed by (Y), where (Y) may be xxxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model ASB followed by 0512, 0524, followed by HB, HHB, LB or MB, followed by (Y), where (Y) may be xxxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model ASB followed by 0812, 0824, followed by HB, HHB, LB, LLB, MB, SHB or VHB, followed by (Y), where (Y) may be xxxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model ASB followed by 0612 or 0624, followed by H, HH, L or M, followed by (Y), where (Y) may be xxxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model ASB followed by 0812, followed by L or M; Model ASB followed by 0912 or 0924, followed by H, L or M, followed by (Y), where (Y) may be xxxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model AUB followed by 0505, 0512 or 0524, followed by HB, HHB, LB or MB, followed by (Y), where (Y) may be xxxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model AUB followed by 0612, 0624, followed by H, HH, L or M, followed by (Y), where (Y) may be xxxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model AUB followed by 0612 or 0624, followed by L, M, H or HH, followed by (Y), where (Y) may be xxxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model AUB followed by 0812 or 0824, followed by HB, HHB, LB, LLB, MB, SHB or VHB, followed by (Y), where (Y) may be xxxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model AUB followed by 0924, followed by L, M, H, HH or VH, followed by (Y), where (Y) may be xxxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model BFB followed by 1212, followed by H, HH, L, LL, M or VH, followed by (Y), where (Y) may be xxxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model BFB followed by 1224, followed by H, HH, L, LL, M or VH, followed by (Y), where (Y) may be xxxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model BFB followed by 1248, followed by H, HH, L, LL, M, followed by (Y), where (Y) may be xxxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model BFC followed by 1012, followed by A, B or C, followed by (Y), where (Y) may be xxxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model DFB followed by 0405 or 0412, followed by H, L, LL, M, followed by (Y), where (Y) may be xxxxxx, where x may be A through Z, 0 through 9, "-"







Cooler Master Co., Ltd.

www.coolermaster.com

## VDE Prüf- und Zertifizierungsinstitut

### GUTACHTEN MIT FERTIGUNGSÜBERWACHUNG CERTIFICATE OF CONFORMITY WITH FACTORY SURVEILLANCE

Delta Electronics Inc.  
186 Ruey Kuang Road  
NEIHU TAIPEI (114)  
TAIWAN

ist berechtigt, für ihr Produkt /  
*is authorized to use for their product*

**Einbauventilator für IT-Geräte**  
**Fan for building-in, IT-equipment**

die hier abgebildeten markenrechtlich geschützten Zeichen  
für die ab Blatt 2 aufgeführten Typen zu benutzen /  
*the legally protected Marks as shown below for the types referred to on page 2 ff.*



REG.-Nr. 1764 oder/and



oder/and VDE-REG.-Nr. 1764

REG.-Nr. 1764

Geprüft und zertifiziert nach /  
*Tested and certified according to*

DIN EN 60950-1 (VDE 0805 Teil 1):2003-03; EN 60950-1:2001  
IEC 60950-1(ed.1)

VDE Prüf- und Zertifizierungsinstitut  
VDE Testing and Certification Institute  
Zertifizierungsstelle  
Certification

VDE VERBAND DER ELEKTROTECHNIK  
ELEKTRONIK INFORMATIONSTECHNIK e.V.

Aktenzeichen: 1164100-2611-0001 / 50676

File ref.:

Ausweis-Nr. 1764

Blatt 1

Certificate No.

Page

Weitere Bedingungen siehe Rückseite und Folgeblätter /  
*further conditions see overleaf and following pages*

Offenbach, 1994-06-08

(letzte Änderung/updated 2005-01-26)





## 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. letzte Änderung / updated Datum / Date  
1164100-2611-0001 / 50676 / FG13 / DO 2005-01-26 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.*

|                          |         |
|--------------------------|---------|
| AFB0405LA/MA/HA/HHA      | DC 5 V  |
| AFB0412LA/MA/HA/HHA      | DC 12 V |
| ASB0405LA/MA/HA/HHA      | DC 5 V  |
| ASB0412LA/MA/HA/HHA      | DC 12 V |
| AFB0612LB                | DC 12 V |
| AFB0612MB                | DC 12 V |
| AFB0612HB                | DC 12 V |
| AFB0612HMB               | DC 12 V |
| AFB0624LB                | DC 24 V |
| AFB0624MB                | DC 24 V |
| AFB0624HB                | DC 24 V |
| AFB0624HMB               | DC 24 V |
| ASB0605L                 | DC 5 V  |
| ASB0605M                 | DC 5 V  |
| ASB0605H                 | DC 5 V  |
| WFB1248HHE/VHE           | DC 48 V |
| WFB1212VHE               | DC 12 V |
| WFB1224VHE               | DC 24 V |
| DSB0812L/M/H             | DC 12 V |
| AFC0812A/B               | DC 12 V |
| AFC0912A/B               | DC 12 V |
| BFC1212A/B               | DC 12 V |
| BFB1212LL/L/M/H/HH/VH    | DC 12 V |
| BFB1224LL/L/M/H/HH/VH    | DC 24 V |
| AFB0405LD/MD/HD          | DC 5 V  |
| AFB0412LD/MD/HD/HHD      | DC 12 V |
| AFB0424LD/MD/HD/HHD      | DC 24 V |
| AFB0612LA/MA/HA          | DC 12 V |
| ASB0812LL/L/M/H/HH       | DC 12 V |
| ASB0912L/M/H/HH          | DC 12 V |
| ASB0824LL/L/M/H/HH       | DC 24 V |
| ASB0924L/M/H/HH          | DC 24 V |
| AFB0705L/M/H             | DC 5 V  |
| AFB0712L/M/H/HH/VH       | DC 12 V |
| AFB0724L/M/H/HH/VH       | DC 24 V |
| AFB0805LL/L/M/H          | DC 5 V  |
| AFB0812LL/L/M/H/HH/VH/SH | DC 12 V |
| AFB0824LL/L/M/H/HH/VH/SH | DC 24 V |
| AFB0912L/M/H/HH/VH       | DC 12 V |
| AFB0924L/M/H/HH/VH       | DC 24 V |
| AFC0612A                 | DC 12 V |

Fortsetzung siehe Blatt 6 /  
continued on page 6

VDE Testing and Certification Institute \* Institut VDE d'Essais et de Certification

Marienspromenade 28, D-63069 Offenbach

Phone +49 (0) 69 83 08-0  
Teletax +49 (0) 69 83 08-555







## 6. Material Of Certificate

### 6.1 AL 6063 T5(HEAT SINK)

東峰鋁型材製品有限公司  
材質檢驗報告

客戶料號: 101-604881-01  
檢驗日期: 30/5/2006

材質類型: AL: 6063T5

| 化學成份    | Si      | Fe     | Cu     | Mn     | Mg        | Cr     | Ni     | Zn     | Ti     | Al    |
|---------|---------|--------|--------|--------|-----------|--------|--------|--------|--------|-------|
| 國家標準(%) | 0.4-0.5 | <0.2   | <0.10  | <0.10  | 0.55-0.58 | <0.10  | —      | <0.10  | 0.1    | 餘量    |
| 化驗結果(%) | 0.4420  | 0.1230 | 0.0142 | 0.0130 | 0.5560    | 0.1000 | 0.0100 | 0.0120 | 0.0150 | 98.71 |
| 判定      | OK      | OK     | OK     | OK     | OK        | OK     | OK     | OK     | OK     | OK    |

綜合判定: ☒ 合格 ☐ 不合格

主營: 檢驗員: 龍昭晴

公司蓋章: 東峰鋁型材製品有限公司



Cooler Master Co., Ltd.

www.coolermaster.com

## 6.2 PC-L1250Y (Fan Cover&Duct)

**TEIJIN CHEMICALS LTD.**

2-2, UCHISAIWAICHO 1-CHOME, CHIYODA-KU  
TOKYO 100-0011, JAPAN



TELEPHONE: TOKYO 03506  
TELEX: 332-3098 TEICHE J  
FACSIMILE: TOKYO 030029028  
TOKYO 030074700  
TOKYO 035035580  
CABLE ADDRESS: TEIJINKAGE TOKYO

YOUR REF.  
OUR REF.

To whom it may concern

February 4, 1999

Re: Result of Panlite® Extraction Test

We hereby certify that Panlite® of the following grade complies with the FDA requirement of CFR 177.1580 polycarbonate resins as follows;

| Grade<br>(Panlite®)            | L-1225Y                     | L-1250Y                    |                                   |
|--------------------------------|-----------------------------|----------------------------|-----------------------------------|
| Solvent                        | Extractive<br>Quantity(wt%) | Extractable<br>matter(wt%) | Extractive<br>Limitation<br>(wt%) |
| Distilled<br>Water             | less than 0.15              | less than 0.02             | less than 0.15                    |
| 50 vol.%<br>Aqueous<br>Ethanol | less than 0.15              | less than 0.02             | less than 0.15                    |
| n-Heptane                      | less than 0.15              | less than 0.02             | less than 0.15                    |

  
Yasuo Inui  
Assistant Manager  
Environmental & Quality Management Dept.  
Teijin Chemicals Ltd.





www.coolermaster.com

## 6.4 PAINO WIRES(Spring)

王: 恩特 / 郭小女

FACTORY: #753-1, SOTO-HI, SANGBUK-MYUN, YANGSAN-CITY, KYOUNGNAI, (626-830), KOREA  
TEL.: +82-55-375-3500-4 FAX: +82-55-375-3505

Date of Shipment: 2003-12-09  
선적/출하일자

Date of Issue : 2003-12-08  
製圖及

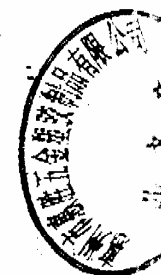
**TEST CERTIFICATE**  
**시험성적서**

|                                 |                                                |                                  |                                        |                                  |                                   |
|---------------------------------|------------------------------------------------|----------------------------------|----------------------------------------|----------------------------------|-----------------------------------|
| Customer's PG No. 03038<br>주주번호 | Customer's Lot No / EX No. H5-321-2002<br>지시번호 | Wire Dimension 1.0 mm SW-C<br>지수 | Commodity Hard Drawn Steel Wires<br>제품 | Specification JIS G 3533<br>제품규격 | *<br>JIS G 3533                   |
|                                 |                                                |                                  | 1/C No.(T/T No./B/A No) T/T            | Total Coils 수량 31                | Total Net weight 3,079 kgs<br>총중량 |

Heat No: X71952

|               | Chemical Composition(%) |       |       |       |       |    |    |   |    |                |    |                |
|---------------|-------------------------|-------|-------|-------|-------|----|----|---|----|----------------|----|----------------|
|               | C                       | Si    | Mn    | P     | S     | Cu | Cr | V | Al | O <sub>2</sub> | Ti | N <sub>2</sub> |
| Specification | 0.650                   | 0.154 | 0.690 |       |       |    |    |   |    |                |    |                |
| Ref           | 0.760                   | 0.354 | 0.990 | 0.030 | 0.030 |    |    |   |    |                |    |                |
| Actual        | 0.720                   | 0.204 | 0.890 | 0.014 | 0.012 |    |    |   |    |                |    |                |

### B. Mechanical Properties

[illegible]

W. H. H. H.

[illegible]









## 6.7 SUS304(CLIP)

业务专用章



**KOS WIRE LTD.**  
1338-2 Gongsong-ni Uyeong-eup, Uyeong-gun Kyungnam, Korea  
TEL : (055) 573-0788 FAX : (055) 573-0507  
E-mail : kos@koscable.com

### Inspection Certificate

DATE OF ISSUE: 2008-08-06

|                |                                         |           |                                       |
|----------------|-----------------------------------------|-----------|---------------------------------------|
| DESCRIPTION    | STAINLESS-STEEL WIRE FOR SPRING ( WTB ) |           |                                       |
| MILL CERT. NO. | CRD-0000387-0251                        | GRADE     | AISI 304                              |
| P.O. NO.       | 0012                                    | QUANTITY  | 1,400 kg                              |
| INVOICE NO.    | W000012/01 ( W00001-08 )                | PRICE     | ₩ (0000)                              |
| CONTRACTOR     | CHOI HANG-PING METAL WIRE CO. LTD.      | DENSITY   | 1,018.2 g/cm <sup>3</sup> ( 30-0015 ) |
| CUSTOMER       | CHOI HANG-PING METAL WIRE CO. LTD.      | APP. SPEC | JIS-B 4334                            |

### CHEMICAL COMPOSITION

(wt.%)

| ELEMENT | C      | SI     | Mn     | P      | S      | NI     | CR      |  |  |  |  |
|---------|--------|--------|--------|--------|--------|--------|---------|--|--|--|--|
| PERCENT | 0.0700 | 0.0050 | 1.0100 | 0.0070 | 0.0020 | 8.3000 | 18.2000 |  |  |  |  |

### INSPECTION RESULTS

| ITEM | SIZE  |       | T/A   | CLIP STYLE |  |  |  | ITEM NO.        | REMARK |
|------|-------|-------|-------|------------|--|--|--|-----------------|--------|
|      | mm    | inch  |       |            |  |  |  |                 |        |
| 1    | 1.925 | 0.075 | 0.000 |            |  |  |  | 10100-0100-0001 | SPRING |
| 2    | 1.925 | 0.075 | 0.000 |            |  |  |  | 10100-0100-0002 |        |
| 3    | 1.925 | 0.075 | 0.000 |            |  |  |  | 10100-0100-0003 |        |
| 4    | 1.925 | 0.075 | 0.000 |            |  |  |  | 10100-0100-0004 |        |
| 5    | 1.925 | 0.075 | 0.000 |            |  |  |  | 10100-0100-0005 |        |
| 6    | 1.925 | 0.075 | 0.000 |            |  |  |  | 10100-0100-0006 |        |
| 7    | 1.925 | 0.075 | 0.000 |            |  |  |  | 10100-0100-0007 |        |
| 8    | 1.925 | 0.075 | 0.000 |            |  |  |  | 10100-0100-0008 |        |
| 9    | 1.925 | 0.075 | 0.000 |            |  |  |  | 10100-0100-0009 |        |
| 10   | 1.925 | 0.075 | 0.000 |            |  |  |  | 10100-0100-0010 |        |
| 11   | 1.925 | 0.075 | 0.000 |            |  |  |  | 10100-0100-0011 |        |
| 12   | 1.925 | 0.075 | 0.000 |            |  |  |  | 10100-0100-0012 |        |
| 13   | 1.925 | 0.075 | 0.000 |            |  |  |  | 10100-0100-0013 |        |
| 14   | 1.925 | 0.075 | 0.000 |            |  |  |  | 10100-0100-0014 |        |
| 15   | 1.925 | 0.075 | 0.000 |            |  |  |  | 10100-0100-0015 |        |

REMARKS

L/C NO : 1001560

We hereby certify that the material described herein has been made in accordance with the specification of the order.

MANAGER OF Q.C. Dept.

END PAGE



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## 6.8 AL1100(FIN&Al cover)

1

[illegible]





## 6.9 INTERFACE(X-23-7783D)



MSDS NO: BV-06-GR903442

1/6

PRODUCT NAME: X-23-7783D

### MATERIAL SAFETY DATA SHEET

#### SECTION 1. COMPANY IDENTIFICATION

##### COMPANY IDENTIFICATION

MANUFACTURER'S NAME: Shin-Etsu Chemical Co., Ltd.

ADDRESS: 6-1, 2-Chome, Ohtemachi, Chiyodaku, Tokyo, JAPAN

EMERGENCY TELEPHONE NUMBER:

02-2751-6999 (Shin-Etsu Silicone Taiwan Co., Ltd.)

TELEPHONE NUMBER FOR INFORMATION:

03-3246-5121 (Tokyo, JAPAN)

02-2751-6999 (Shin-Etsu Silicone Taiwan Co., Ltd.)

DATA PREPARED : 08/07/2001

LAST REVISION : 08/30/2001

DATA ISSUED : 08/20/2002

ISSUE NO 200208001178

BASE NO 2

PRODUCT NAME :

X-23-7783D

PRODUCT CLASSIFICATION:

Silicone Grease

#### SECTION 2. COMPOSITION

SINGLE OR MIXTURE:

Mixture

CHEMICAL IDENTIFICATION:

Organopolysiloxane mixture

HAZARDOUS COMPONENT(S) / (CAS No.):

Synthetic paraffin/

(69551-20-2) [Combustible Liquid] : ca.2 %

(See Section 8 of this MSDS for Exposure Guideline)

#### SECTION 3. HAZARDS IDENTIFICATION

HAZARDS CLASSIFICATION:

None (based on IMO)

None (based on DOT)

FIRE AND EXPLOSION:

Not considered flammable nor combustible, but will burn if involved in a fire.

POTENTIAL HEALTH EFFECT:

SKIN contact ; May cause slight skin irritation, but no significant effect.

EYES contact ; May cause slight eyes irritation.



**ShinEtsu**

MSDS NO: BU-06-GR903442

2/6

PRODUCT NAME: X-23-7783D

INGESTION ; No information is available.

#### SECTION 4. FIRST AID MEASURES

SKIN contact ; Remove product from skin with dry cloth or towel, and wash exposed area with detergent.  
EYES contact ; Immediately flush with water for at least 15 minutes.  
INGESTION ; Wash out mouth with water provided person is conscious. Never give anything by mouth to an unconscious person. Call a physician immediately.

#### SECTION 5. FIRE FIGHTING MEASURES

FLASH POINT(method used) :

150 degrees C Min.(Open cup)

FLAMMABLE LIMITS:

[Synthetic paraffin] LOWER: Not measured  
UPPER: Not measured

EXTINGUISHING MEDIA:

Foam, dry chemical, carbon dioxide or fine water spray

SPECIAL FIRE FIGHTING PROCEDURE:

None

UNUSUAL FIRE AND EXPLOSION HAZARD:

Emits toxic fumes under fire conditions.

#### SECTION 6. ACCIDENTAL RELEASE MEASURES

STEP TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

Contain the spill or leak.

Scrape up with cardboard or rag and place in container.

#### SECTION 7. HANDLING AND STORAGE

PRECAUTION TO BE TAKEN IN HANDLING AND STORING:

Keep container closed when not in use.

Store in a cool place(Qualitatively under 25 degrees C).

Keep away from heat and flame.

Do not lay the container on its side.

Avoid contact with eyes and prolonged or repeated skin contact.

Keep out of reach of children.

\* \* \* \* \* Information about the emptied container \* \* \* \* \*

Do not re-use this container.

Keep away from heat, sparks and flame.

Do not puncture or cut this container, and do not weld on or near this container.



**ShinEtsu**

MSDS NO: EU-06-GR903442

3/6

PRODUCT NAME: X-23-7783D

## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### EXPOSURE GUIDELINES:

ACGIH TLV-TWA : ca.100ppm,

OSHA PEL : 8H TWA ca.500ppm [Synthetic paraffin]

### RESPIRATORY PROTECTION(specify type):

Not required

### VENTILATION:

LOCAL EXHAUST: Not required

MECHANICAL(general): Not required

SPECIAL: Not required

OTHER: Not required

### PROTECTIVE GLOVES:

Plastic film or rubber gloves

### EYE PROTECTION:

Safety glasses

### OTHER PROTECTIVE CLOTHING OR EQUIPMENT:

Eyewash equipment

### WORK/HYGIENIC PRACTICES:

Wash hands after handling.

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

### BOILING POINT:

Not applicable

### VAPOR PRESSURE:

Negligible (25 degrees C) [Synthetic paraffin]

### VAPOR DENSITY(air=1):

>1 [Synthetic paraffin]

### SPECIFIC GRAVITY:

2.5 (25 degrees C)

### MELTING POINT:

Not applicable

### EVAPORATION RATE:

<1 (Butyl Acetate=1) [Synthetic paraffin]

### SOLUBILITY IN WATER:

Not soluble

### APPEARANCE(color):

Gray

### APPEARANCE(form):

Paste

### ODOR:

Slight odor

## SECTION 10. STABILITY AND REACTIVITY



MSDS NO: BU-06-GR903442

4/6

PRODUCT NAME: X-23-7783D

STABILITY:

Stable

CONDITION TO AVOID:

None

INCOMPATIBILITY(material to avoid):

None

HAZARDOUS DECOMPOSITION OR BY-PRODUCT:

None

HAZARDOUS POLYMERIZATION:

Will not occur

CONDITION TO AVOID:

None

---

SECTION 11. TOXICOLOGICAL INFORMATION

SKIN IRRITATION:

No information is available.

EYE IRRITATION:

No information is available.

ACUTE TOXICITY(LD50):

No information is available.

ACUTE TOXICITY(LC50):

Not applicable

CHRONIC TOXICITY:

No information is available.

CARCINOGENICITY:

NTP:Not listed, IARC:Not listed, OSHA REGULATED:Not listed

OTHER INFORMATION:

None

---

SECTION 12. ECOLOGICAL INFORMATION

BIODEGRADATION:

Not applicable

BIOACCUMULATION:

No information is available.

AQUATIC TOXICITY:

No information is available.

OTHER INFORMATION:

None

---

SECTION 13. DISPOSAL CONSIDERATIONS

Can be burned in a chemical incinerator equipped with an afterburner and scrubber.





**ShinEtsu**

MSDS NO: EU-06-GR903442

5/6

PRODUCT NAME: X-23-7783D

## SECTION 14. TRANSPORT INFORMATION

UN No.:

None

IMO CLASSIFICATION AND CLASS:

None

PACKAGING GROUP:

None

PROPER SHIPPING NAME:

None

TECHNICAL SHIPPING NAME:

None

MARINE POLLUTANT:

None

DOT REPORTABLE QUANTITY(49CFR 172.101, APP.):

HAZARD SUBSTANCE(S) NAME / (CAS No.), CONTENTS AND RQ

Not applicable

## SECTION 15. REGULATORY INFORMATION

TOXIC SUBSTANCES CONTROL ACT(TSCA) STATUS:

Not listed on the TSCA Inventory.

\*\*This product should be used in compliance with Low Volume  
Exemption under TSCA.

\*\*\*\*\*

EUROPEAN INVENTORY OF EXISTING COMMERCIAL CHEMICAL SUBSTANCES

(EINECS) STATUS:

Listed on the EINECS.

LABELING ACCORDING TO EC-REGULATIONS REQUIRED:

SYMBOL : Not required

R-PHRASE : Not required

S-PHRASE : Not required

CONTAINS : None

\*\*\*\*\*

WGK CLASSIFICATION (Water Resources Act in Germany):

WGK=1

\*\*\*\*\*

SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986(SARA)

TITLE III SECTION 313 SUPPLIER NOTIFICATION:

This regulation requires submission of annual reports of toxic  
chemical(s) that appear in section 313 of the emergency planning  
and community Right-To-Know Act of 1986 and 40 CFR 372.

This information must be included in all MSDS's that are copied  
and distributed for the material.

The toxic chemical(s) contained in this product are:

CHEMICAL NAME/(CAS No.) AND CONTENTS



MSDS NO: EU-06-GR903442

5/6

PRODUCT NAME: X-23-7783D

Zinc oxide/(1314-13-2) : ca.20 %

\*\*\*\*\*

#### CALIFORNIA PROPOSITION 65:

This regulation requires a warning for California

Proposition 65 Chemical(s) under the statute.

The California Proposition 65 Chemical(s) contained in this product are:

CHEMICAL NAME/(CAS No.) AND CONTENTS

\*\* None \*\*

#### SECTION 16. OTHER INFORMATION

##### For Industrial Use Only

\*\*\*\*\*

This materials safety data sheet is offered solely for your information, consideration and investigation.

The data described in this MSDS consist of data on literature, our acquisitional data and analogical inference by data of similar chemical substance or product.

Shin-Etsu Chemical Co., Ltd. provides no warranties, either express or implied, and assumes no responsibility for the accuracy or completeness of the data contained herein.

## 6.10 Clipforce Test Report

| Sample # | Force(1bs) [ SPEC:42~601bf ] |
|----------|------------------------------|
| 1        | 45.52                        |
| 2        | 44.68                        |
| 3        | 46.26                        |
| 4        | 45.21                        |
| 5        | 45.98                        |
| 6        | 45.12                        |
| 7        | 44.98                        |
| 8        | 45.02                        |
| 9        | 44.55                        |
| 10       | 45.21                        |
| Max      | 46.26                        |
| Min      | 44.55                        |
| AVG      | 45.25                        |

Photo:





Cooler Master Co., Ltd.

www.coolermaster.com

## 7. CE



SPORTON LAB.



Certificate No: EC621413

# CERTIFICATE

EQUIPMENT : Cooler

MODEL NO. : XXXXXXXXXXXXXXXX (X=0-9, a-z, blank or "-")

APPLICANT : Cooler Master Co., Ltd.

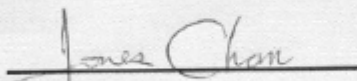
9F, No. 786, Chung-Cheng Rd., Chung-Ho City,  
Taipei Hsien, 235 Taiwan, R.O.C.



I HEREBY

CERTIFY THAT:

THE MEASUREMENTS SHOWN IN THIS TEST REPORT WERE MADE IN ACCORDANCE WITH THE PROCEDURES GIVEN IN EUROPEAN COUNCIL DIRECTIVE 89/336/EEC. THE EQUIPMENT WAS PASSED THE TEST PERFORMED ACCORDING TO European Standard EN 55022:1998/A1:2000/A2:2003 Class B, EN 61000-3-2:2000, EN 61000-3-3:1995/A1:2001 and EN 55024:1998/A1:2001/A2:2003 ( IEC 61000-4-2:1995/A2:2000, IEC 61000-4-3:1995/A2:2002, IEC 61000-4-4:1995/A2:2001, IEC 61000-4-5:1995/A1:2000, IEC 61000-4-6:1996/A1:2000, IEC 61000-4-8:1993/A1:2000, IEC 61000-4-11:1994/A1:2000 ). THE TEST WAS CARRIED OUT ON Feb. 16, 2006 AT SPORTON INTERNATIONAL INC. LAB.

  
Jones Chan  
Supervisor

Feb. 24. 2006





## 8.UL



**UL International, L.L.C.**  
**Taiwan Branch**

美商優力安全認證有限公司台灣分公司

UL International, L.L.C., Taiwan Branch

台北市 112 北投區大業路 260 號 1 樓

1st Fl 260 Da-Yeh Road Beitou Taipei City Taiwan 112

電話: 886-2-2896-7790

傳真: 886-2-2891-7644

http://www.ul.com.tw

### NOTICE OF AUTHORIZATION TO APPLY THE UL MARK

May 12, 2006

MS. Juyu Chen  
Cooler Master Co Ltd  
9th FL 788 Chung-Cheng Rd  
Chung-Ho, Taipei Hsien 235  
Taiwan

Fax number: 02-32340051

E-mail: juyu-chen@coolermaster.com.tw

Reference: File E189887 Project 06CA23884 P.O. Number U621412

Product: UL/CUL Investigation For COOLER FAN, employing the revise model designation A1A2-A3A4A5-A6A7A8A9, B1B2-B3B4B5-B6B7B8B9, C1C2-C3C4C5-C6C7C8C9 to A1A2-A3A4A5-A6A7A8A9-A10A11, B1B2-B3B4B5-B6B7B8B9-B10B11, C1C2-C3C4C5-C6C7C8C9-C10C11; and alternate model designation X1X2-X3X4X5-X6X7X8X9-X10X11.

Dear Ms. Chen,

Any information and documentation provided to you involving UL Mark services are provided on behalf of Underwriters Laboratories Inc.

UL's investigation of your product has been completed under the above project number and the subject product was determined to comply with the applicable requirements.

This letter temporarily supplements the UL Follow-Up Services Procedure and serves as authorization to apply the UL Recognized Marking and/or Recognized Component Mark only at the factory under UL's Follow-Up Service Program to the subject product, which is constructed as described below:

Similar to products covered in the UL Follow-Up Services Procedure, File E189887, Volume X1, Report Reference No. E189887-A1-UL-1, except for employing the revise model designation A1A2-A3A4A5-A6A7A8A9, B1B2-B3B4B5-B6B7B8B9, C1C2-C3C4C5-C6C7C8C9 to A1A2-A3A4A5-A6A7A8A9-A10A11, B1B2-B3B4B5-B6B7B8B9-B10B11, C1C2-C3C4C5-C6C7C8C9-C10C11; and alternate model designation X1X2-X3X4X5-X6X7X8X9-X10X11

To provide the manufacturer with the intended authorization to use the UL Mark, the addressee must send a copy of this Notice and all attached material to each manufacturing location as currently authorized in File E189887, Volume X1.

This authorization is effective from the date of this Notice and only for products at the indicated manufacturing locations. Records in the Follow-Up Services Procedure covering the product are now being prepared and will be sent to the indicated manufacturing locations in the near future. Please note that Follow-Up Services Procedures are sent to the manufacturers only unless the Applicant specifically requests this document.

Products that bear the UL Mark shall be identical to those that were evaluated by UL and found to comply with UL's requirements. If changes in construction are discovered, appropriate action will be taken for products not in conformance with UL's requirements and continued use of the UL Mark may be withdrawn.

Sincerely,

Jay Hsu

Jay Hsu  
Project Engineer  
UL International L.L.C., Taiwan Branch  
Tel: +886-2-28967790  
Fax: +886-2-28907451  
E-mail: Jay.Hsu@tw.ul.com

Reviewed by:

Wisely Lin

Wisely Lin  
Associate Project Engineer  
UL International L.L.C., Taiwan Branch  
E-mail: kenny.lin@tw.ul.com

An independent organization working for a safer world with integrity, precision and knowledge.

