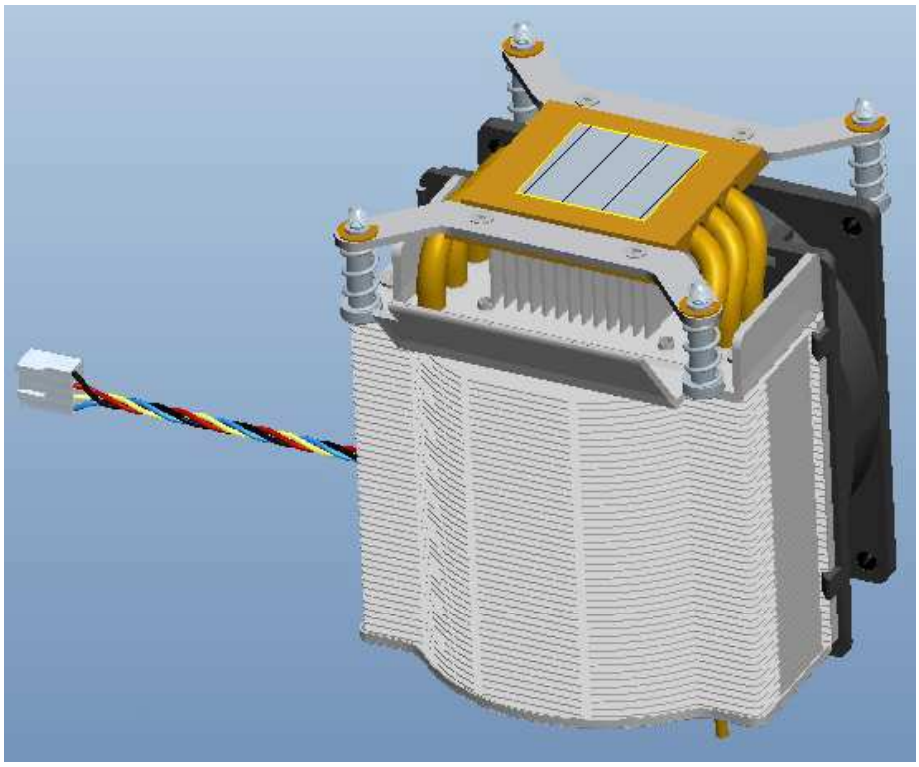
1.Contents

2.Component List

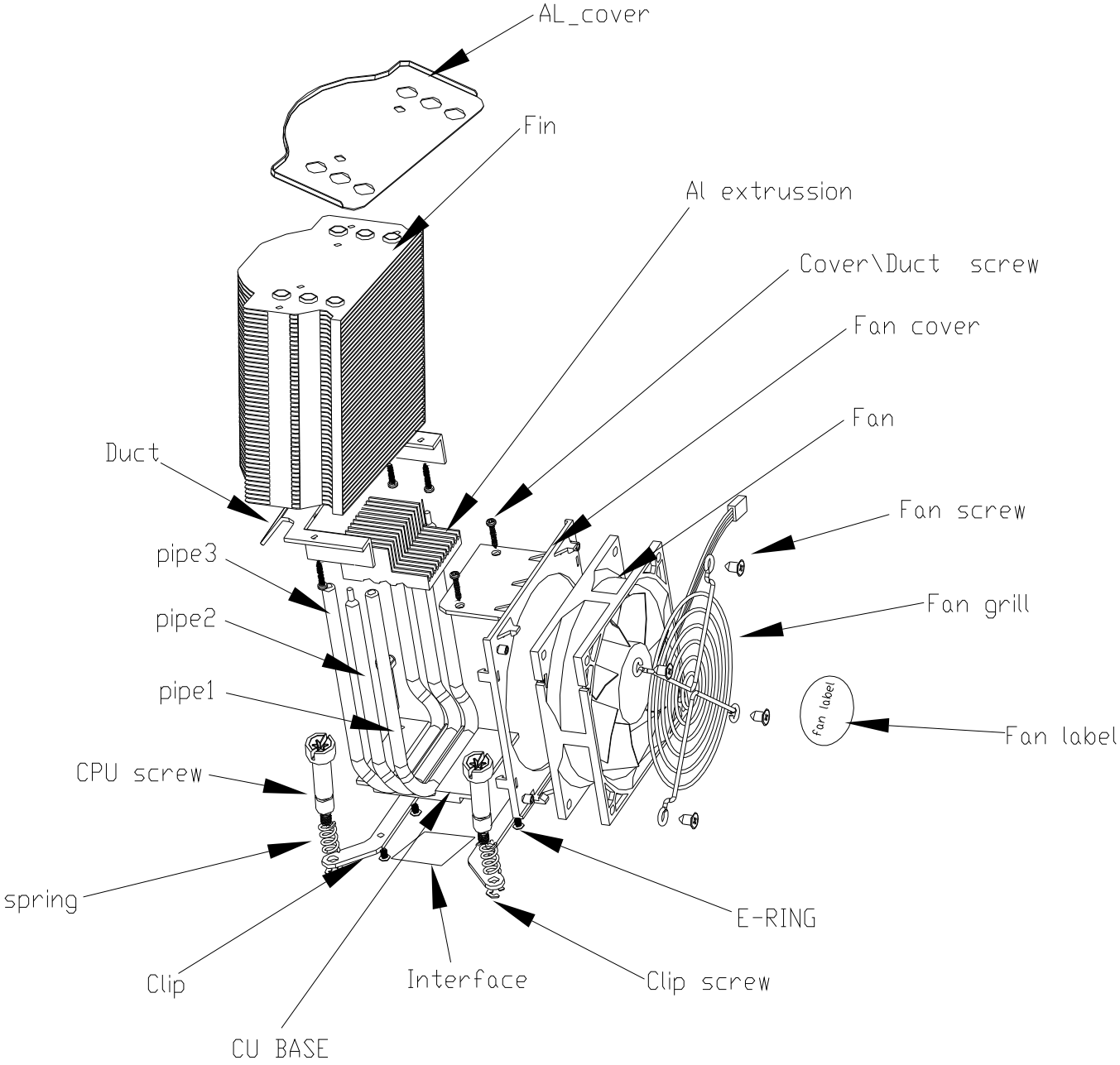
ITEM	PART NO.	PART NAME	DESCRIPTION	QUANTITY	MATERIAL
1	601006340-GP	Mix closely Sample	Fin-ALL1100+CU Base+Heat pipe+sink	1	--------
2	310010160-GP	FAN COVER	CVR-by socket-92*92*25	1	PC 94V2
3	200022960-GP	FAN	Datel 9025	1	--------
4	520000220-GP	INTERFACE	ShinEtsu X-23-7783D	0.30/1000g	GREASE
5	150029960-GP3	CPU SCREW	SCW-AISI1018-6#-32	4	AISI1018
6	450005470-GP	SPRING	SPRING-§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-Φ6.0	1	C1020
11	261003560-GP	Pipe2	Heat pipe-Φ6.0	1	C1020
12	261003550-GP	Pipe3	Heat pipe-Φ6.0	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

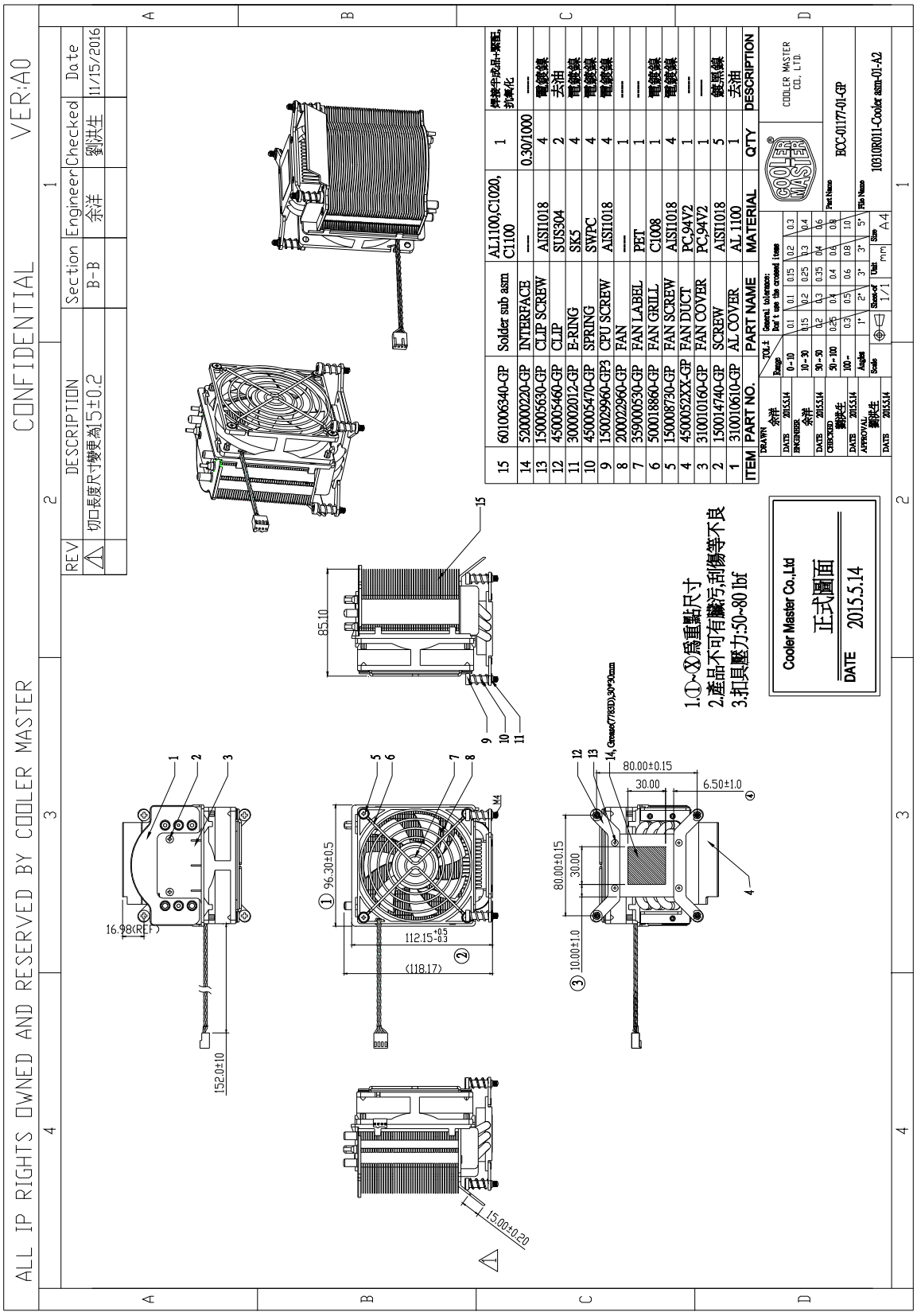
3.1 Sample Photoes



3.2 COOLER EXPLOD



3.3 COOLER ASSEMBLY



ITEM	PART NO.	MATERIAL	QTY	DESCRIPTION
15	601006340-GP	Solder sub asm	AL1100,C1020, C1100	1	焊接半成品+鎳鍍,抗氧化
14	520000220-GP	INTERFACE	----	0.30/1000	----
13	150005630-GP	CLIP SCREW	AISI1018	4	電鍍鎳
12	450005460-GP	CLIP	SUS304	2	去油
11	300002012-GP	E-RING	SK5	4	電鍍鎳
10	450005470-GP	SPRING	SWPC	4	電鍍鎳
9	150029960-GP3	CPU SCREW	AISI1018	4	電鍍鎳
8	200022960-GP	FAN	----	1	----
7	359000530-GP	FAN LABEL	PET	1	----
6	500018860-GP	FAN GRILL	C1008	1	電鍍鎳
5	150008730-GP	FAN SCREW	AISI1018	4	電鍍鎳
4	4500052XX-GP	FAN DUCT	PC,94V2	1	----
3	310010160-GP	FAN COVER	PC,94V2	1	----
2	150014740-GP	SCREW	AISI1018	5	鍍黑鎳
1	310010610-GP	AL COVER	AL 1100	1	去油

DRAWN 余洋 DATE 2015.5.14
ENGINEER 余洋 DATE 2015.5.14
CHECKED 劉洪生 DATE 2015.5.14
APPROVAL 劉洪生 DATE 2015.5.14

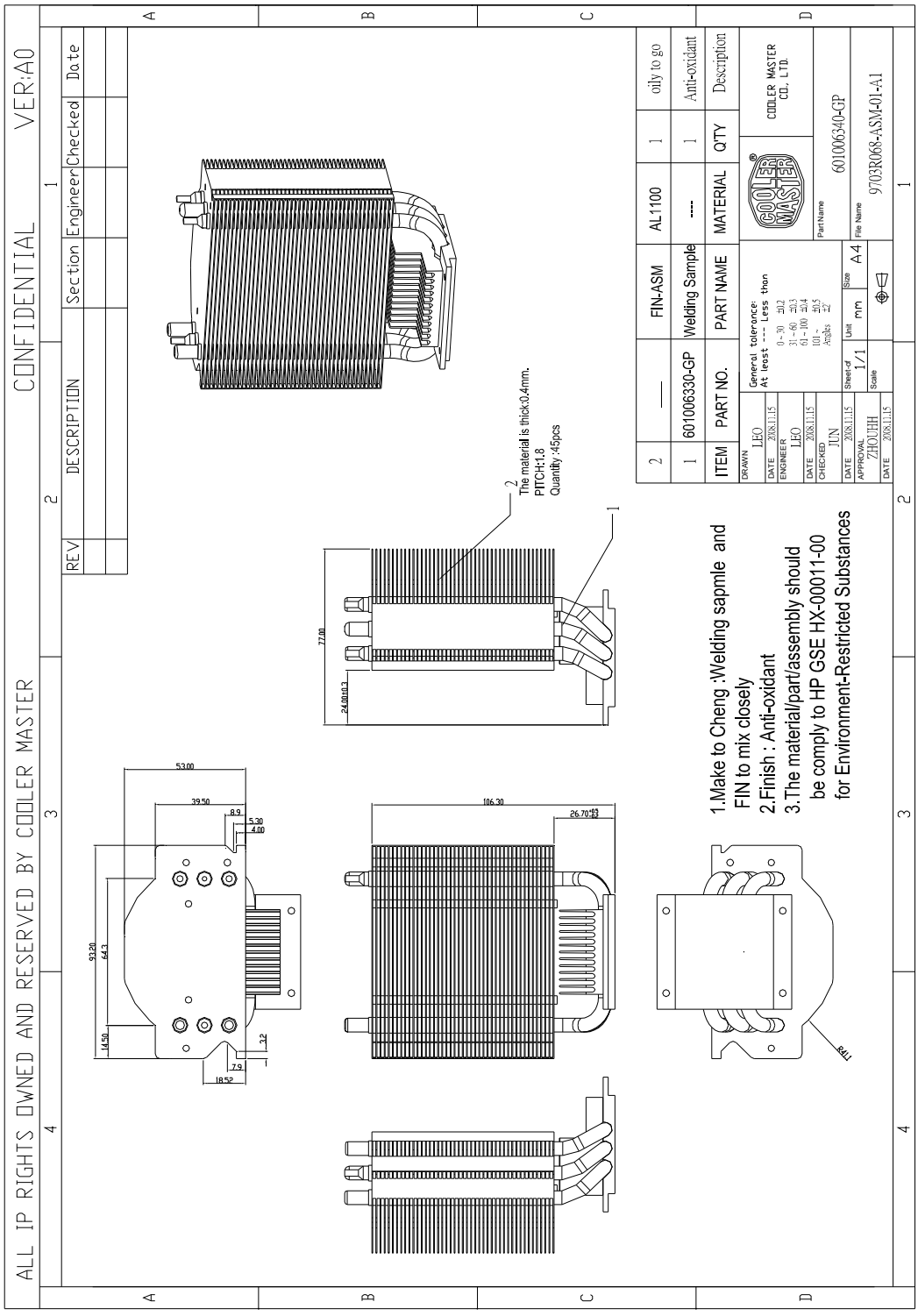
General tolerances: Don't use the crossed items

TOL±	0.1	0.2	0.3
Range 0~10	0.1	0.15	0.2
10~30	0.15	0.2	0.25
30~50	0.2	0.3	0.35
50~100	0.25	0.4	0.4
100~	0.3	0.5	0.6
Angles	1°	2°	3°
Scale		Sheet of 1/1	Units mm

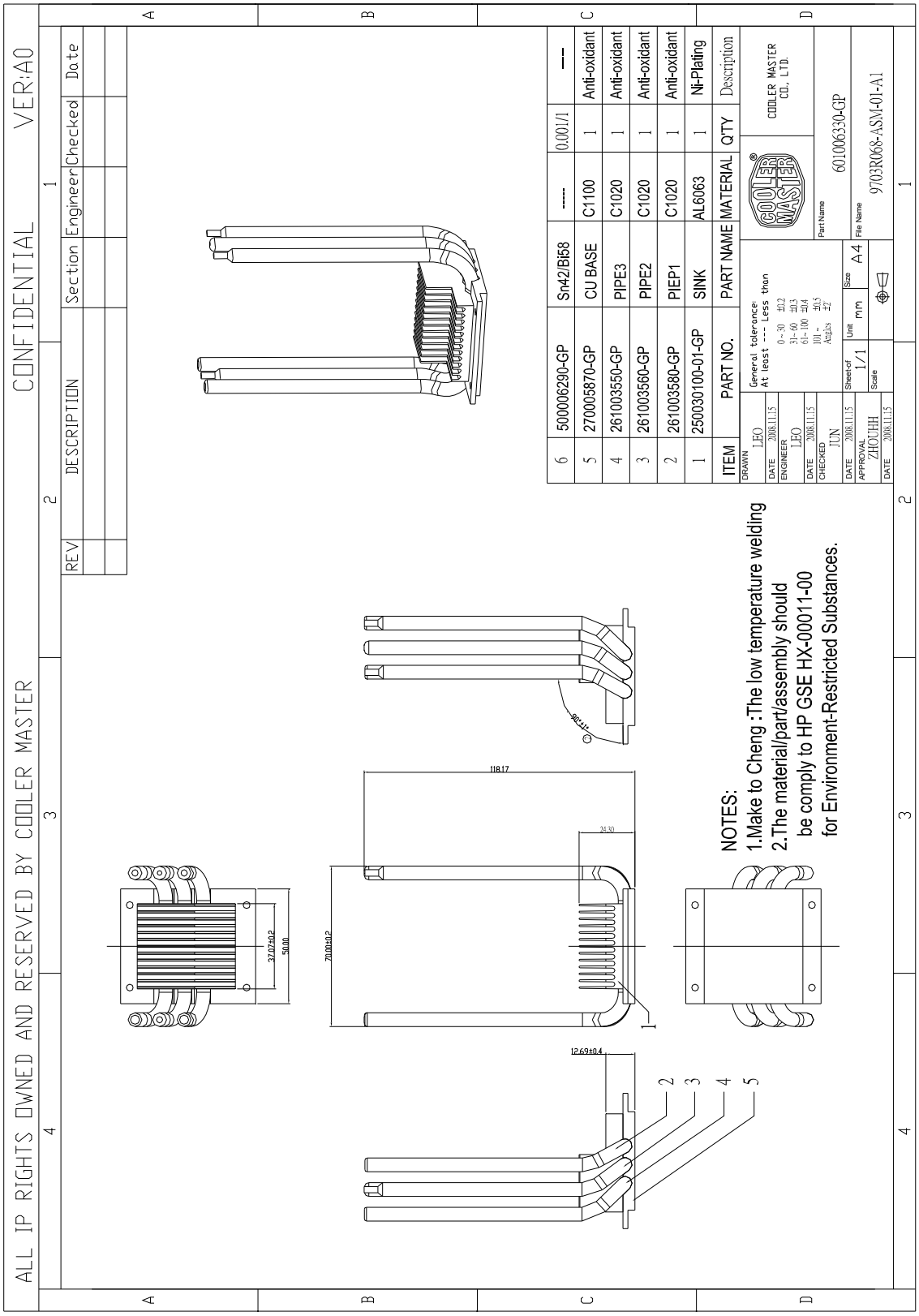
COOLER MASTER CO., LTD.
Part Name RCC-00177-01-GP
File Name 10310R011-Cooler assm-01-A2
Size A4

4.Component Drawing

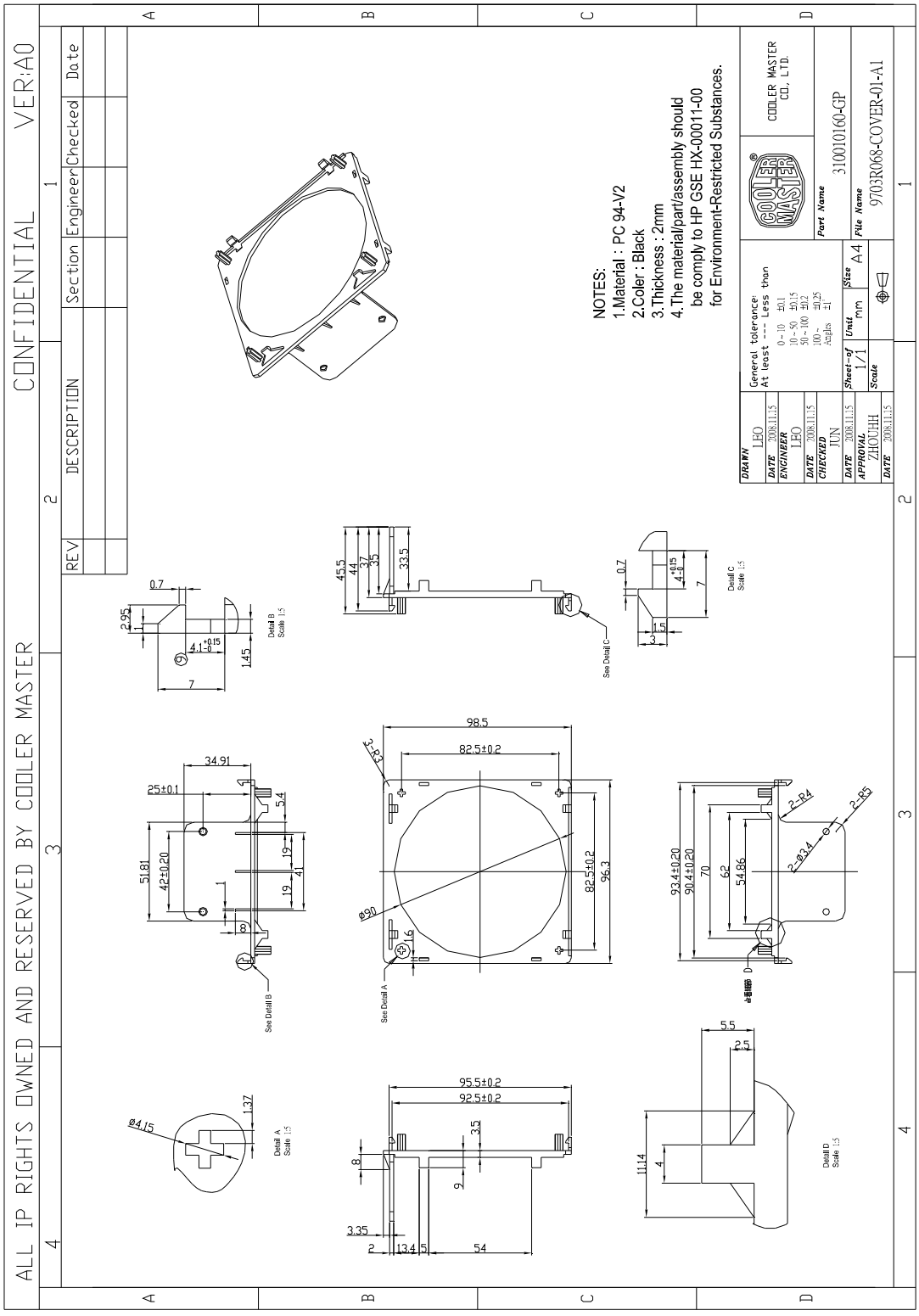
4.1 Mix closely Sample



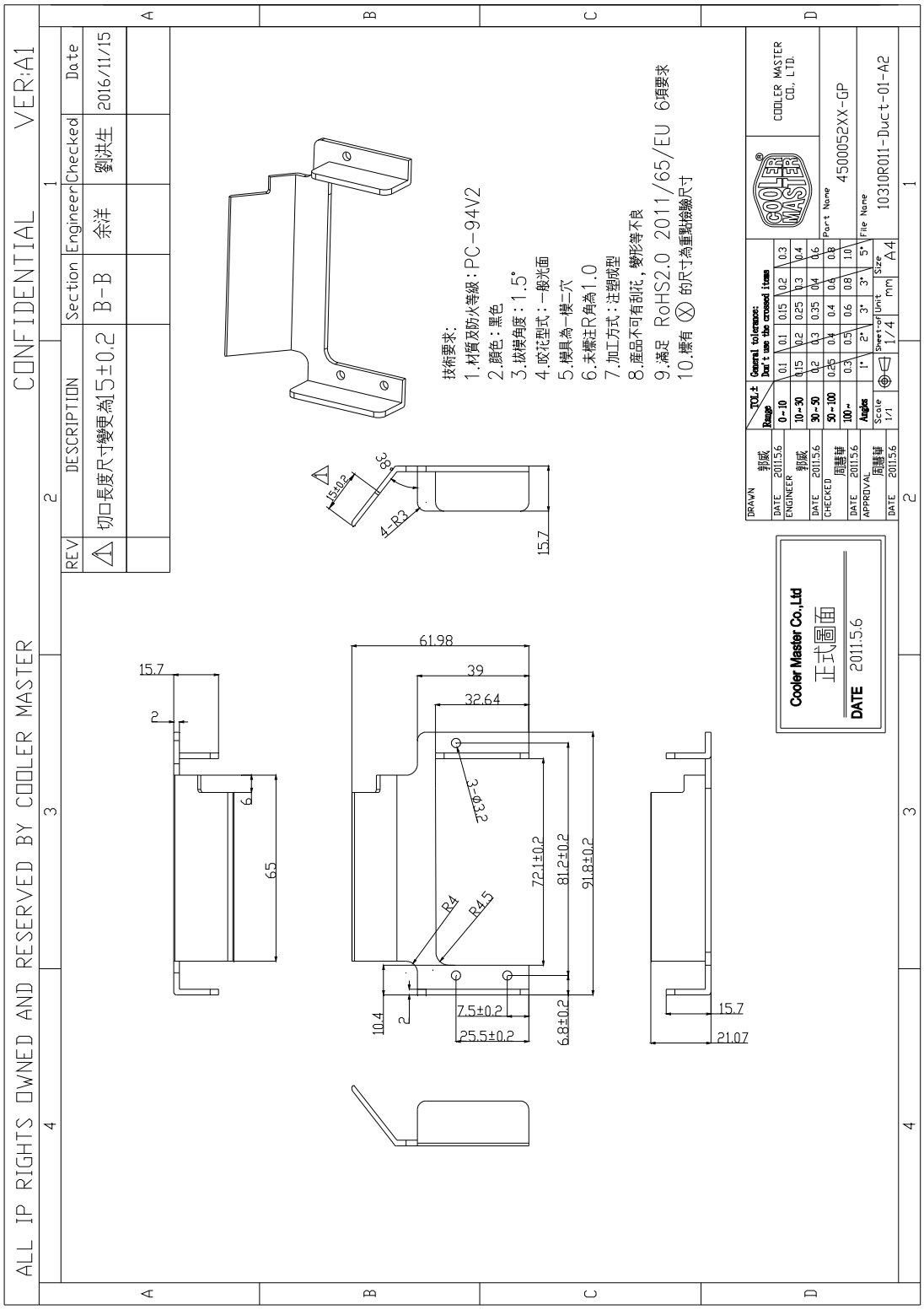
4.2 Welding Sample



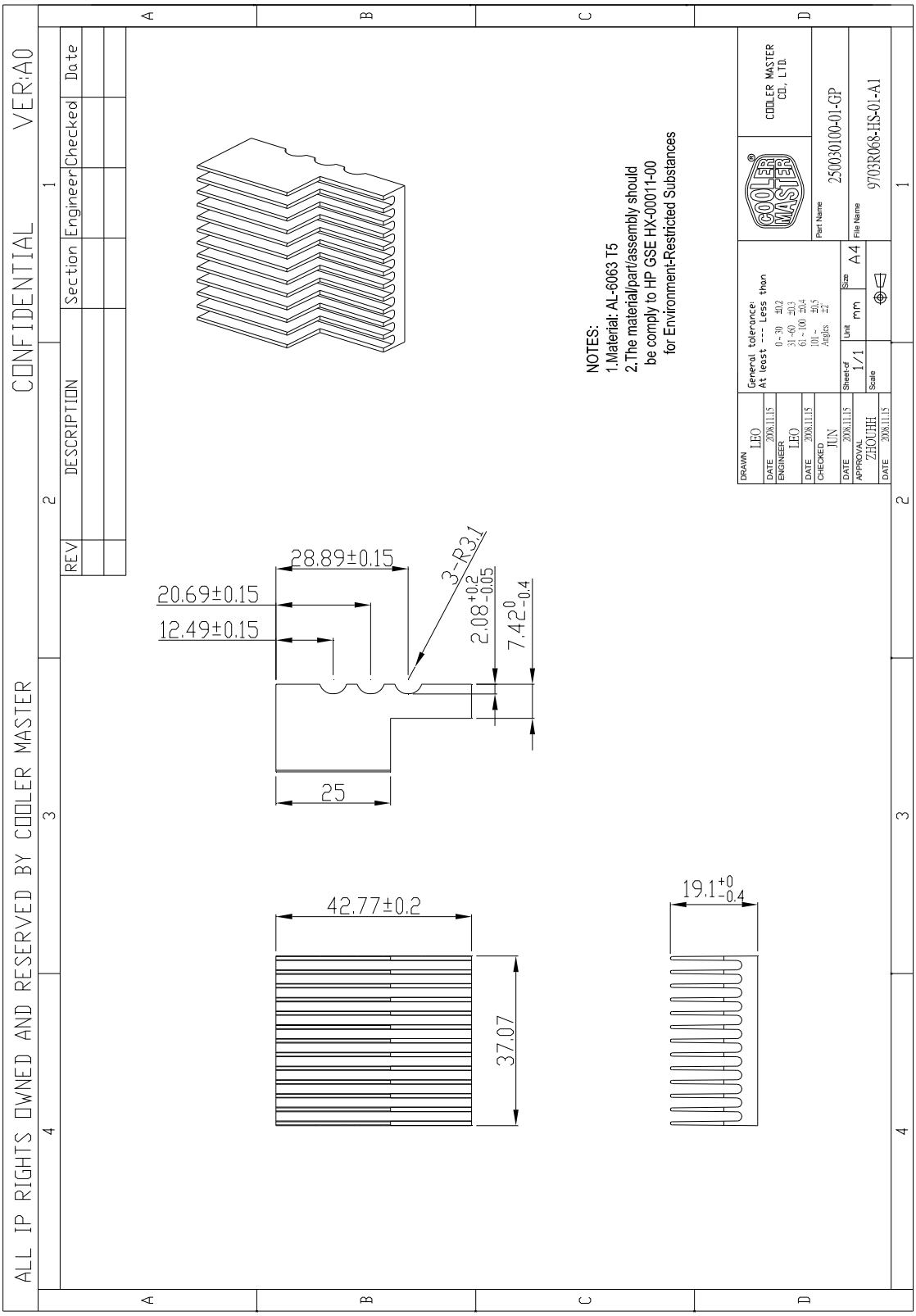
4.3 FAN COVER


CONFIDENTIAL VER:A0
ALL IP RIGHTS OWNED AND RESERVED BY COOLER MASTER
REV
DESCRIPTION
Section
Engineer
Checked
Date
NOTES:
1.Material : PC 94-V2
2.Coler : Black
3.Thickness : 2mm
4.The material/part/assembly should be comply to HP GSE HX-00011-00 for Environment-Restricted Substances.
DRAWN LEO 2008.11.15
ENGINEER LEO 2008.11.15
CHECKED TUN 2008.11.15
APPROVAL ZHOUHH 2008.11.15
General tolerance At least --- Less than
0 ~ 10 ±0.1
10 ~ 50 ±0.15
50 ~ 100 ±0.2
100 ~ Angles ±0.25 ±1
Sheet-of 1/1
Unit mm
Size A4
Scale
COOLER MASTER CO., LTD.
Part Name 310010160-GP
File Name 9703R068-COVER-01-A1
Detail A Scale 1.5
Detail B Scale 1.5
Detail C Scale 1.5
Detail D Scale 1.5
See Detail A
See Detail B
See Detail C
98.5
82.5±0.2
96.3
ø90
34.91
25±0.1
51.81
42±0.20
93.4±0.20
90.4±0.20
70
62
54.86
2-R4
2-R5
2-ø3.4
95.5±0.2
92.5±0.2
ø4.15
45.5
44
35
33.5
54

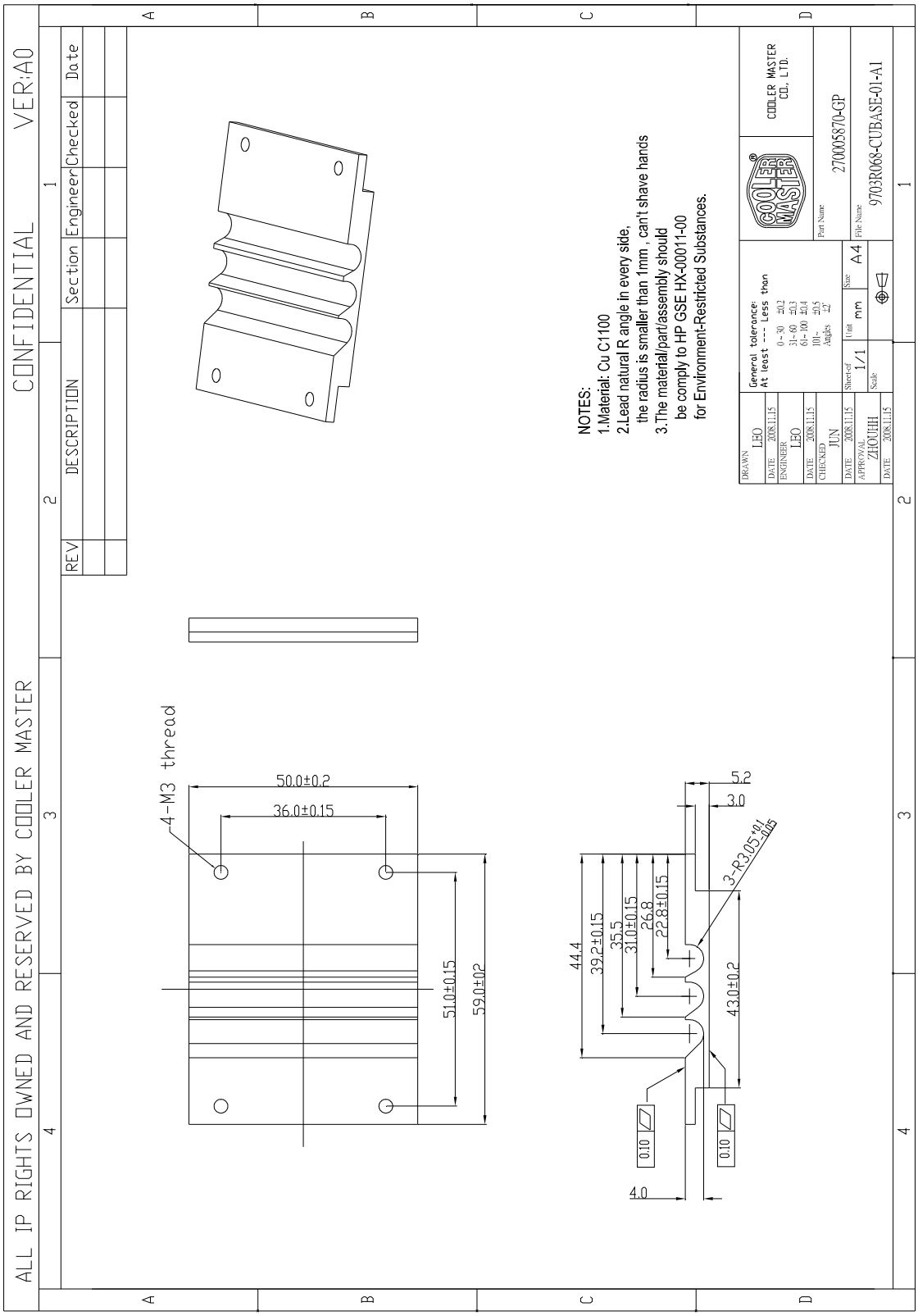
4.4 FAN DUCT


CONFIDENTIAL VER:A1
ALL IP RIGHTS OWNED AND RESERVED BY COOLER MASTER
REV DESCRIPTION Section Engineer Checked Date
切口長度尺寸變更為15±0.2 B-B 余洋 劉洪生 2016/11/15
技術要求:
1.材質及防火等級:PC-94V2
2.顏色:黑色
3.拔模角度:1.5°
4.咬花型式:一般光面
5.模具為一模二穴
6.未標注R角為1.0
7.加工方式:注塑成型
8.產品不可有刮花,變形等不良
9.滿足 RoHS2.0 2011/65/EU 6項要求
10.標有 Ⓧ 的尺寸為重點檢驗尺寸
15±0.2
4-R3
15.7
61.98
39
32.64
15.7
2
6
65
4-φ3.2
72.1±0.2
81.2±0.2
91.8±0.2
R4
R4.5
10.4
2
7.5±0.2
25.5±0.2
6.8±0.2
15.7
21.07
COOLER MASTER CO., LTD.
450052XX-GP
10310R011-Duct-01-A2
Cooler Master Co.,Ltd
正式圖面
DATE 2011.5.6

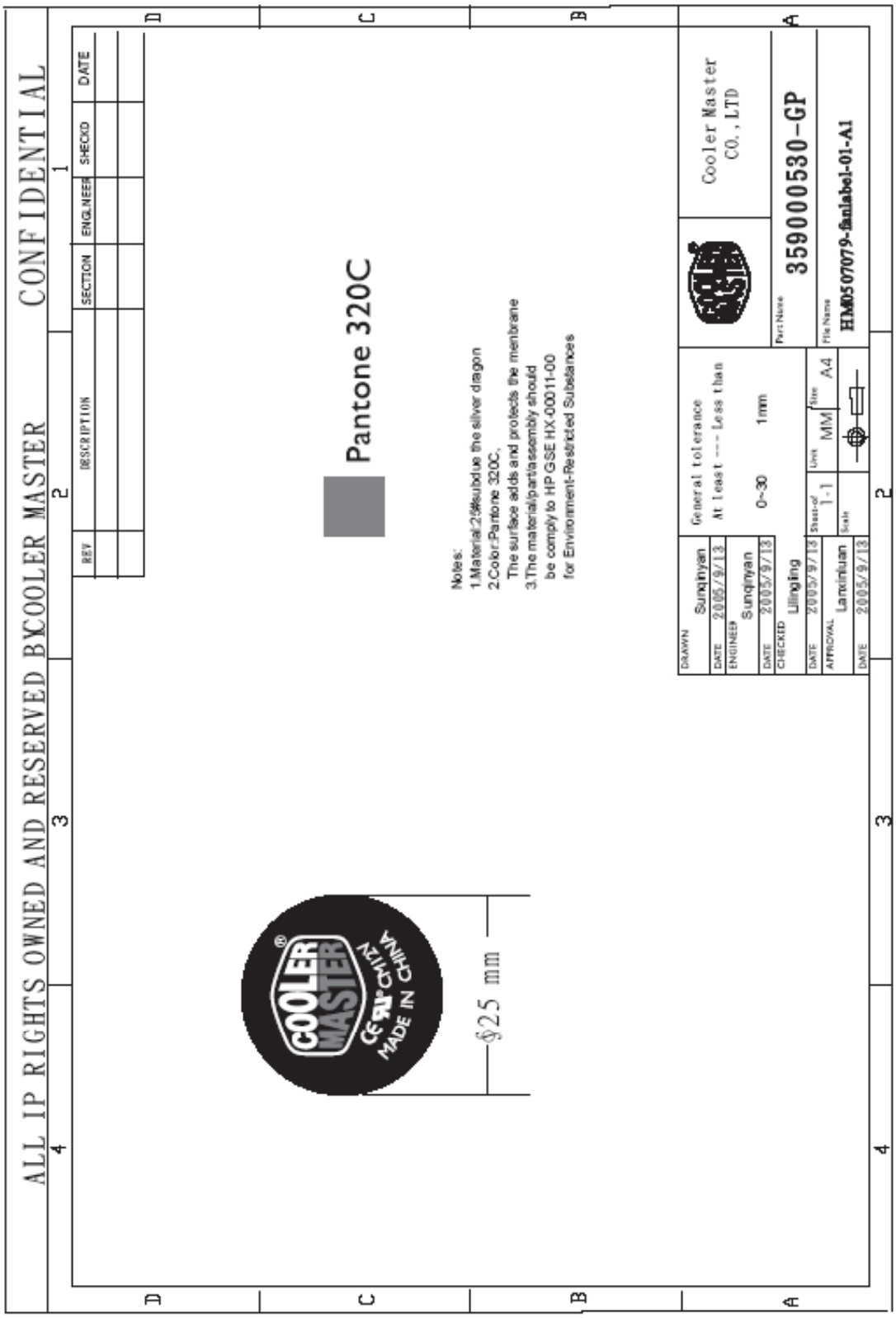
4.5 SINK


CONFIDENTIAL VER:A0
ALL IP RIGHTS OWNED AND RESERVED BY COOLER MASTER
REV
DESCRIPTION
Section
Engineer
Checked
Date
NOTES:
1.Material: AL-6063 T5
2.The material/part/assembly should be comply to HP GSE HX-00011-00 for Environment-Restricted Substances
COOLER MASTER CO., LTD.
Part Name 250030100-01-GP
File Name 9703R068-HS-01-A1
DRAWN LEO
ENGINEER LEO
CHECKED JUN
APPROVAL ZHOUHH
Size A4
Unit mm
Sheet of 1/1
Scale
28.89±0.15
20.69±0.15
12.49±0.15
3-R3.1
2.08+0.2 -0.05
7.42 0 -0.4
25
42.77±0.2
37.07
19.1+0 -0.4

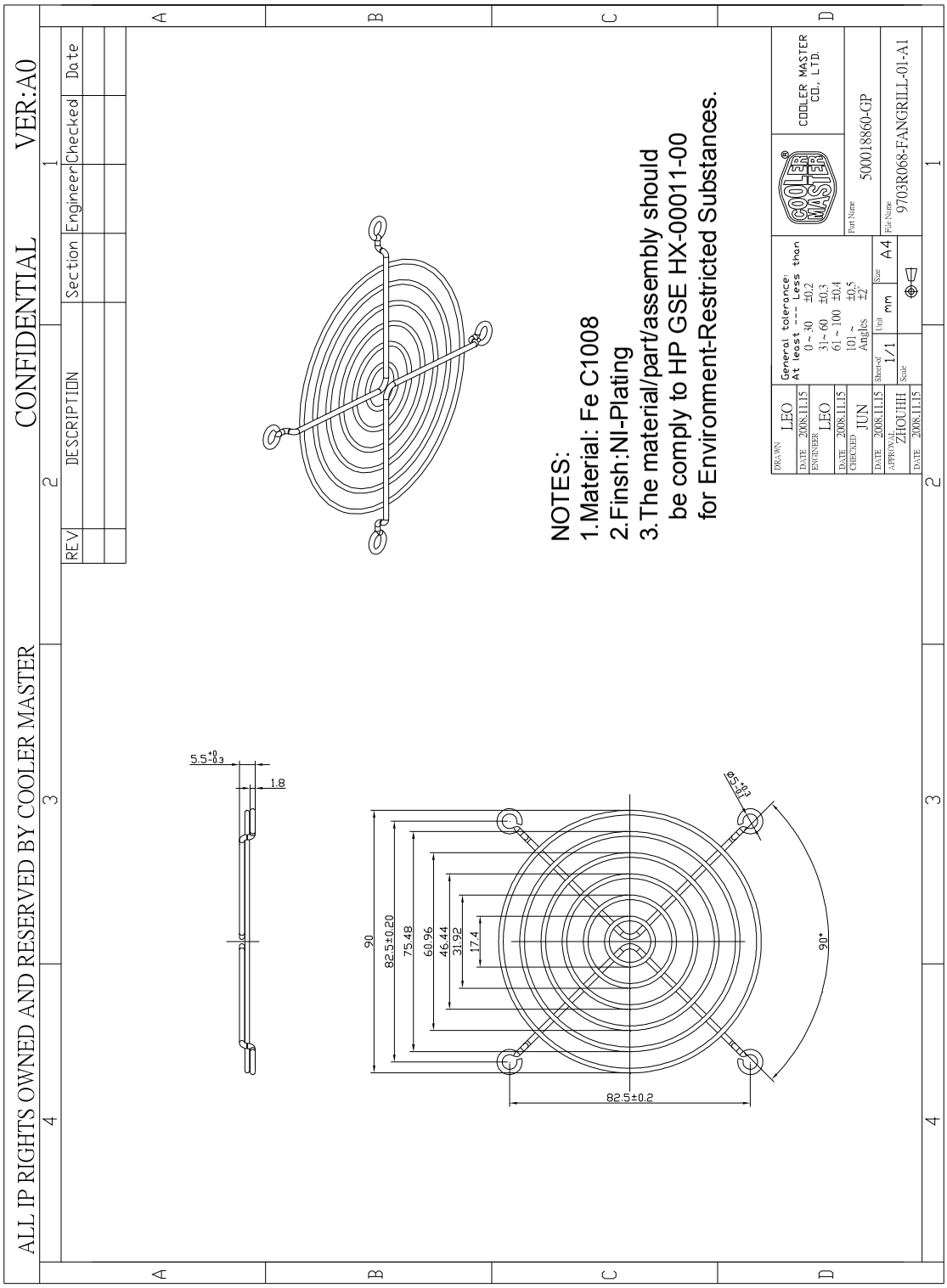
4.6 AL BASE


CONFIDENTIAL VER:A0
ALL IP RIGHTS OWNED AND RESERVED BY COOLER MASTER
REV
DESCRIPTION
Section
Engineer
Checked
Date
NOTES:
1.Material: Cu C1100
2.Lead natural R angle in every side,
the radius is smaller than 1mm , can't shave hands
3.The material/part/assembly should
be comply to HP GSE HX-00011-00
for Environment-Restricted Substances.
COOLER MASTER CO., LTD.
Part Name
2700025870-GP
File Name
9703R068-CUBASE-01-A1
DRAWN LEO 2008.11.15
ENGINEER LEO 2008.11.15
CHECKED JUN 2008.11.15
APPROVAL ZHOUHH 2008.11.15
Sheet-of 1/1
Unit mm
Size A4
Scale
4-M3 thread
50.0±0.2
36.0±0.15
51.0±0.15
59.0±0.2
5.2
3.0
3-R3.05+0.1 -0.05
44.4
39.2±0.15
35.5
31.0±0.15
26.8
22.8±0.15
43.0±0.2
0.10
0.10
4.0

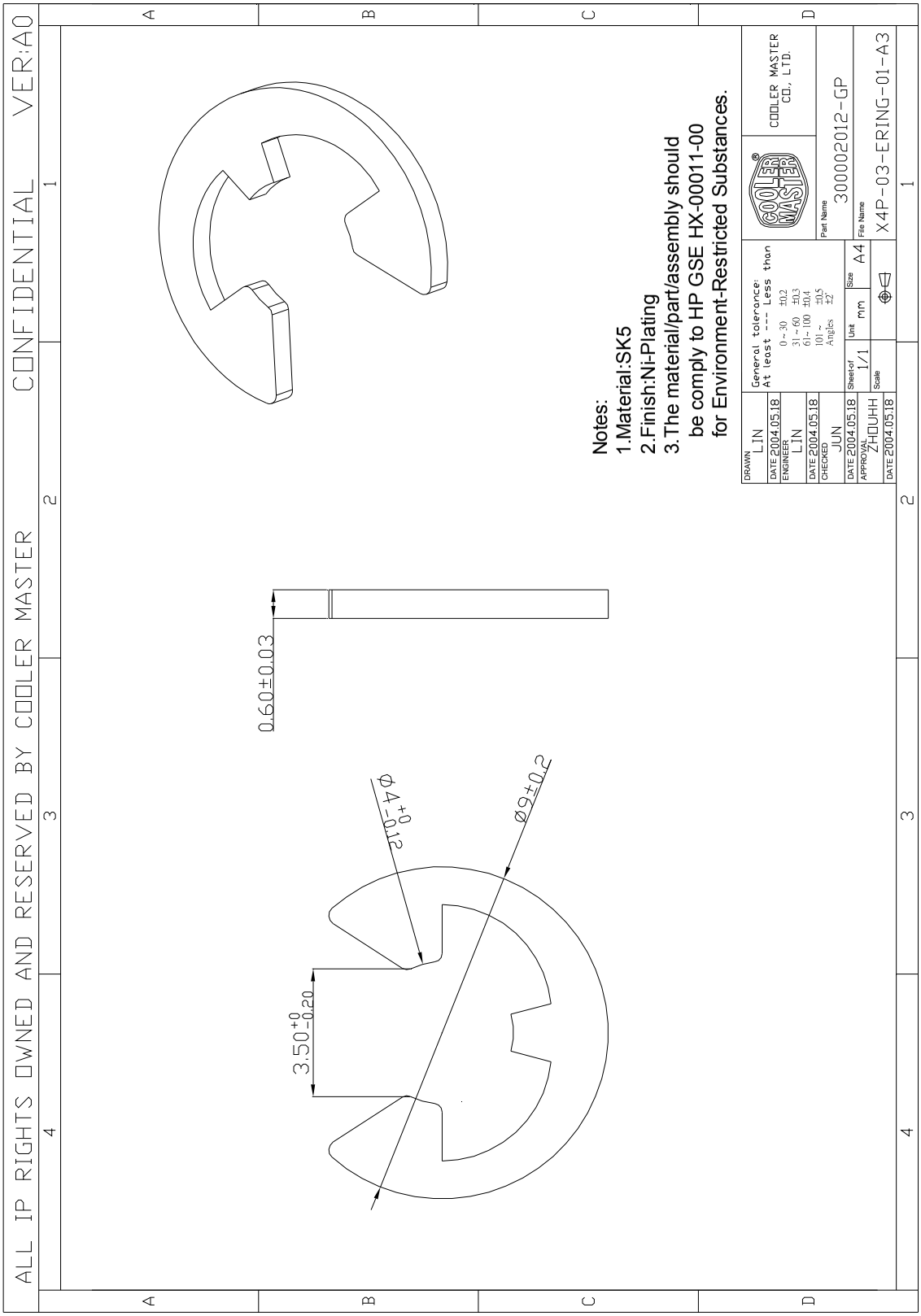
4.7 FAN LABEL


CONFIDENTIAL
ALL IP RIGHTS OWNED AND RESERVED BYCOOLER MASTER
REV
DESCRIPTION
SECTION
ENGINEER
CHECKD
DATE
Pantone 320C
Notes:
1.Material:2#subdue the silver dragon
2.Color:Pantone 320C,
The surface adds and protects the membrane
3.The material/parts/assembly should
be comply to HP GSE HX-00011-00
for Environment-Restricted Substances
Cooler Master
CO., LTD
359000530-GP
HM0507079-fanlabel-01-A1
General tolerance
At least --- Less than
0~30 1mm
Sunqinyan
Lilingling
Lanminluan
MADE IN CHINA
φ25 mm

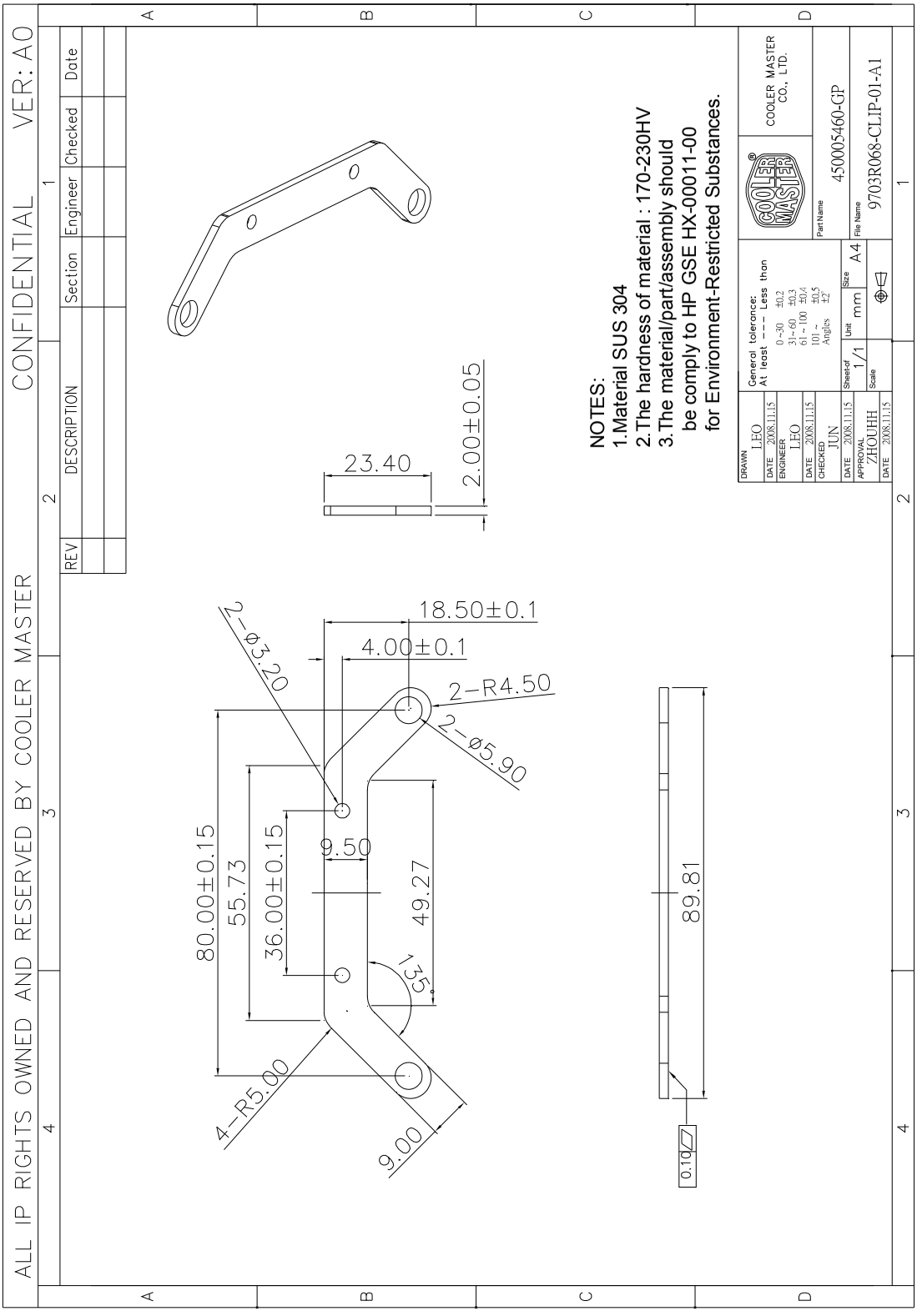
4.8 FAN GRILL


CONFIDENTIAL VER:A0
ALL IP RIGHTS OWNED AND RESERVED BY COOLER MASTER
REV DESCRIPTION Section Engineer Checked Date
NOTES:
1.Material: Fe C1008
2.Finsh:NI-Plating
3.The material/part/assembly should be comply to HP GSE HX-00011-00 for Environment-Restricted Substances.
DR&CHN LEO 2008.11.15
ENGINEER LEO 2008.11.15
CHECKED JUN 2008.11.15
APPROVAL ZHOUHH 2008.11.15
General tolerance: At least --- Less than
0 ~ 30 ±0.2
31 ~ 60 ±0.3
61 ~ 100 ±0.4
101 ~ Angles ±0.5 ±2°
Sheet of 1/1
Unit mm
Size A4
Scale
COOLER MASTER CO., LTD.
Part Name 500018860-GP
File Name 9703R068-FANGRILL-01-A1
5.5 +0 -0.3
1.8
90
82.5±0.20
75.48
60.96
46.44
31.92
17.4
82.5±0.2
Φ5 +0.3 -0.1
90°

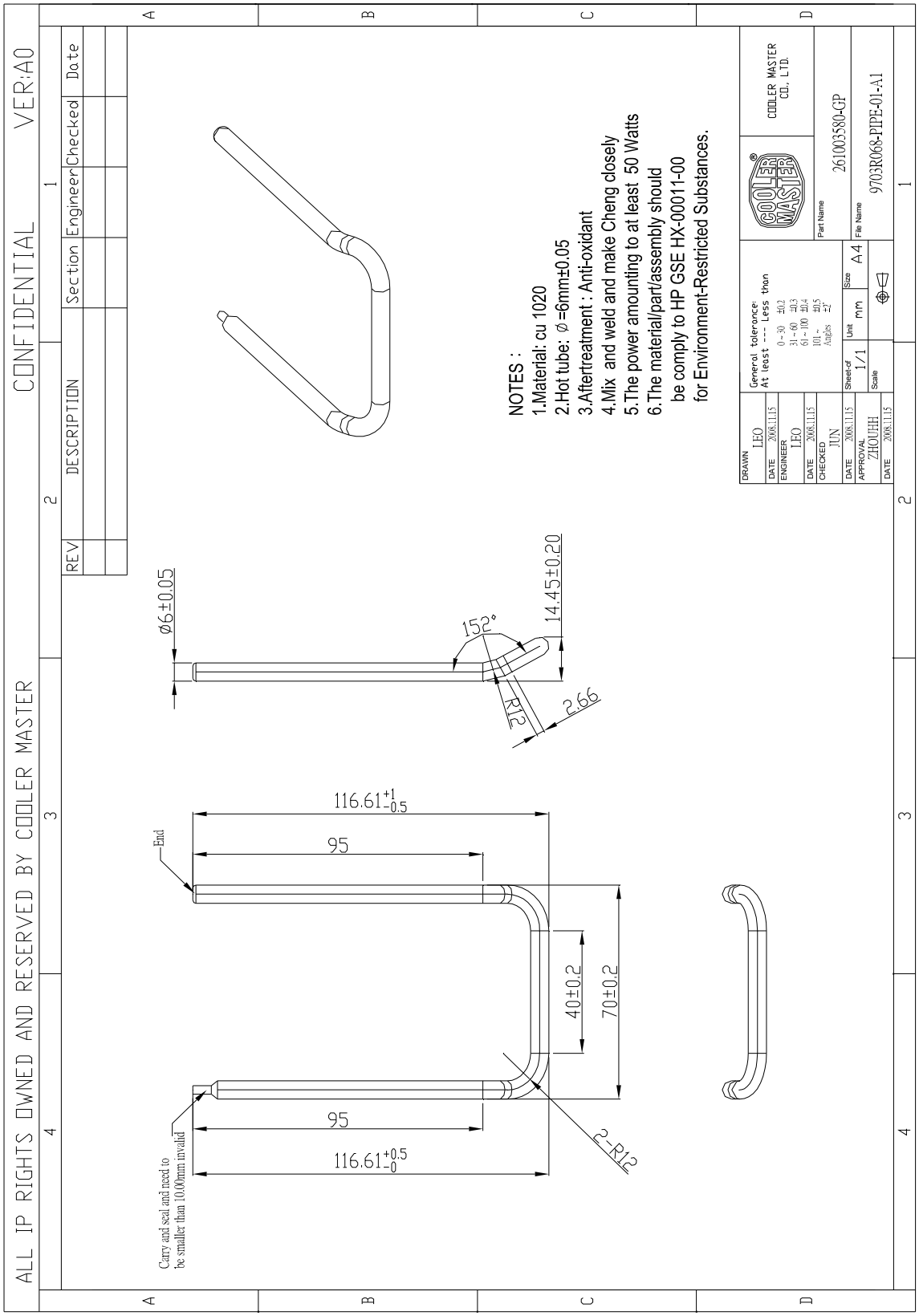
4.9 E-RING


ALL IP RIGHTS OWNED AND RESERVED BY COOLER MASTER CONFIDENTIAL VER:A0
Notes:
1.Material:SK5
2.Finish:Ni-Plating
3.The material/part/assembly should be comply to HP GSE HX-00011-00 for Environment-Restricted Substances.
0.60±0.03
Ø4+0.12-0
Ø9±0.2
3.50+0-0.20
DRAWN LIN DATE 2004.05.18
ENGINEER LIN DATE 2004.05.18
CHECKED JUN DATE 2004.05.18
APPROVAL ZHOUHH DATE 2004.05.18
General tolerance: At least --- Less than
0 ~ 30 ±0.2
31 ~ 60 ±0.3
61 ~ 100 ±0.4
101 ~ ±0.5
Angles ±2°
Sheet of 1/1
Unit mm
Size A4
Scale
COOLER MASTER CO., LTD.
Part Name 300002012-GP
File Name X4P-03-ERING-01-A3

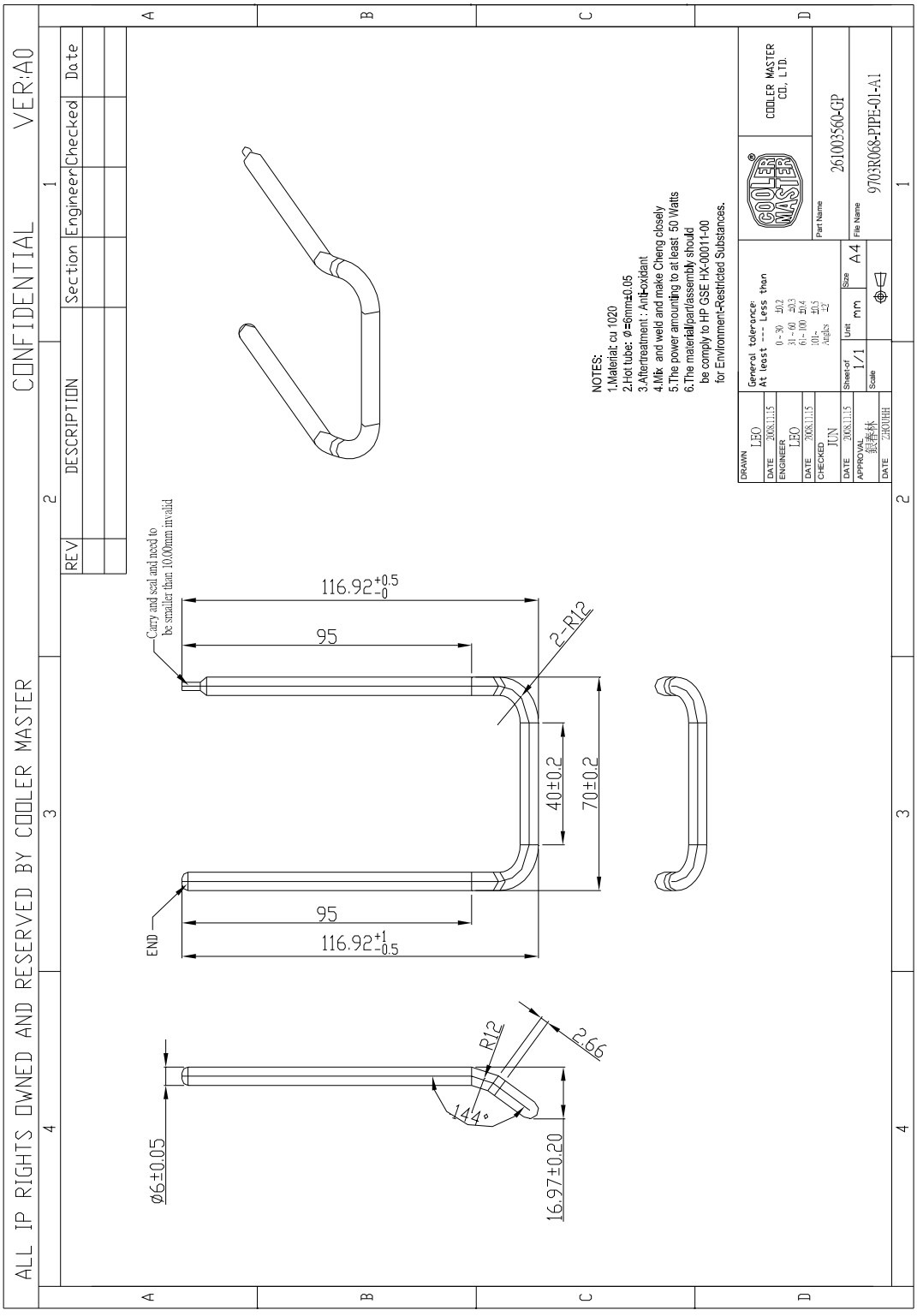
4.10 CLIP


CONFIDENTIAL VER: AO
ALL IP RIGHTS OWNED AND RESERVED BY COOLER MASTER
REV
DESCRIPTION
Section
Engineer
Checked
Date
NOTES:
1.Material SUS 304
2.The hardness of material : 170-230HV
3.The material/part/assembly should be comply to HP GSE HX-00011-00 for Environment-Restricted Substances.
23.40
2.00±0.05
18.50±0.1
4.00±0.1
2-R4.50
2-Ø3.20
2-Ø5.90
80.00±0.15
55.73
36.00±0.15
9.50
49.27
35°
4-R5.00
9.00
89.81
0.10
DRAWN LEO
ENGINEER LEO
CHECKED JUN
APPROVAL ZHOUHH
Sheet of 1/1
Unit mm
Size A4
Scale
Part Name 450005460-GP
File Name 9703R068-CLIP-01-A1
COOLER MASTER CO., LTD.

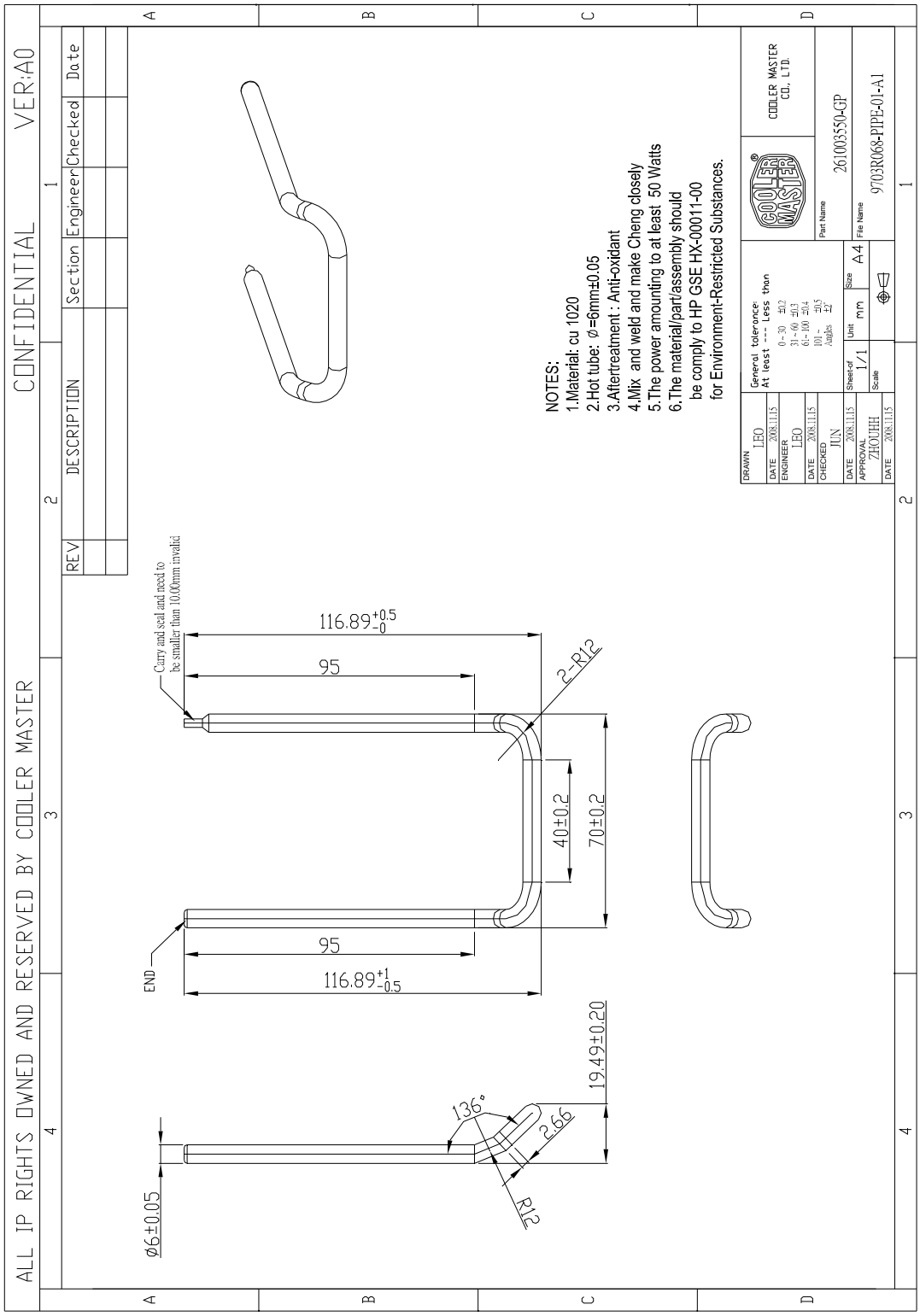
4.11 PIPE1


CONFIDENTIAL VER:A0
ALL IP RIGHTS OWNED AND RESERVED BY COOLER MASTER
REV DESCRIPTION Section Engineer Checked Date
NOTES :
1.Material: cu 1020
2.Hot tube: Ø =6mm±0.05
3.Aftertreatment : Anti-oxidant
4.Mix and weld and make Cheng closely
5.The power amounting to at least 50 Watts
6.The material/part/assembly should be comply to HP GSE HX-00011-00 for Environment-Restricted Substances.
COOLER MASTER CO., LTD.
Part Name 2610003580-GP
File Name 9703R068-PIPE-01-A1
Ø6±0.05
152°
14.45±0.20
R12
266
116.61+1 -0.5
95
End
40±0.2
70±0.2
95
116.61+0.5 -0
2-R12
Carry and seal and need to be smaller than 10.00mm invalid

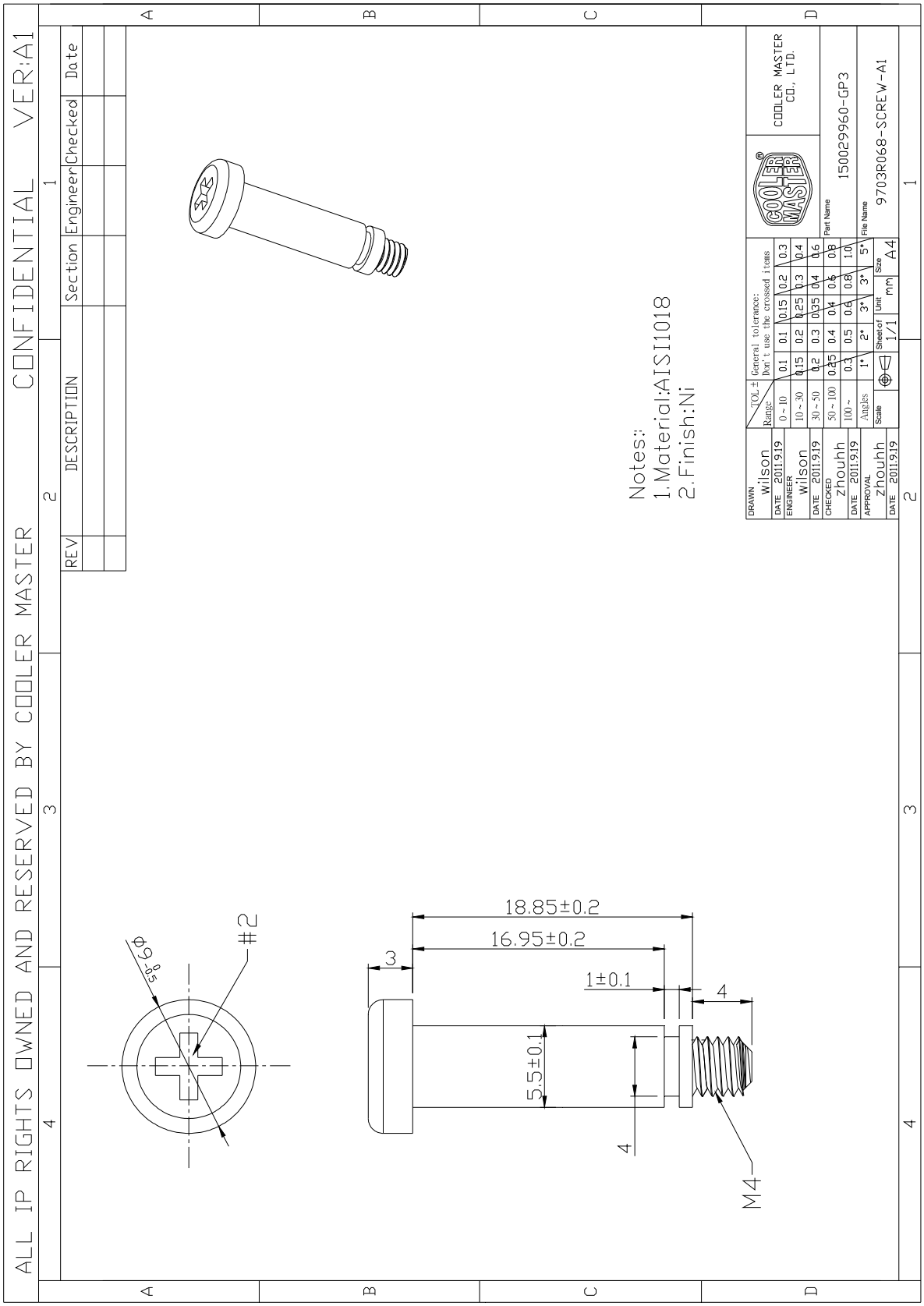
4.12 PIPE2


CONFIDENTIAL VER:A0
ALL IP RIGHTS OWNED AND RESERVED BY COOLER MASTER
REV
DESCRIPTION
Section
Engineer
Checked
Date
NOTES:
1.Material: cu 1020
2.Hot tube: Ø=6mm±0.05
3.Aftertreatment : Anti-oxidant
4.Mix and weld and make Cheng closely
5.The power amounting to at least 50 Watts
6.The material/part/assembly should be comply to HP GSE HX-00011-00 for Environment-Restricted Substances.
COOLER MASTER CO., LTD
Part Name
26100356O-GP
File Name
9703R068-PIPE-01-A1
Size
A4
Unit
mm
Sheet of
1/1
Scale
DRAWN
LEO
ENGINEER
LEO
CHECKED
JUN
APPROVAL
116.92+0.5 -0
95
2-R12
40±0.2
70±0.2
95
116.92+1 -0.5
END
Carry and seal and need to be smaller than 10.00mm invalid
R12
2.66
144°
Ø6±0.05
16.97±0.20

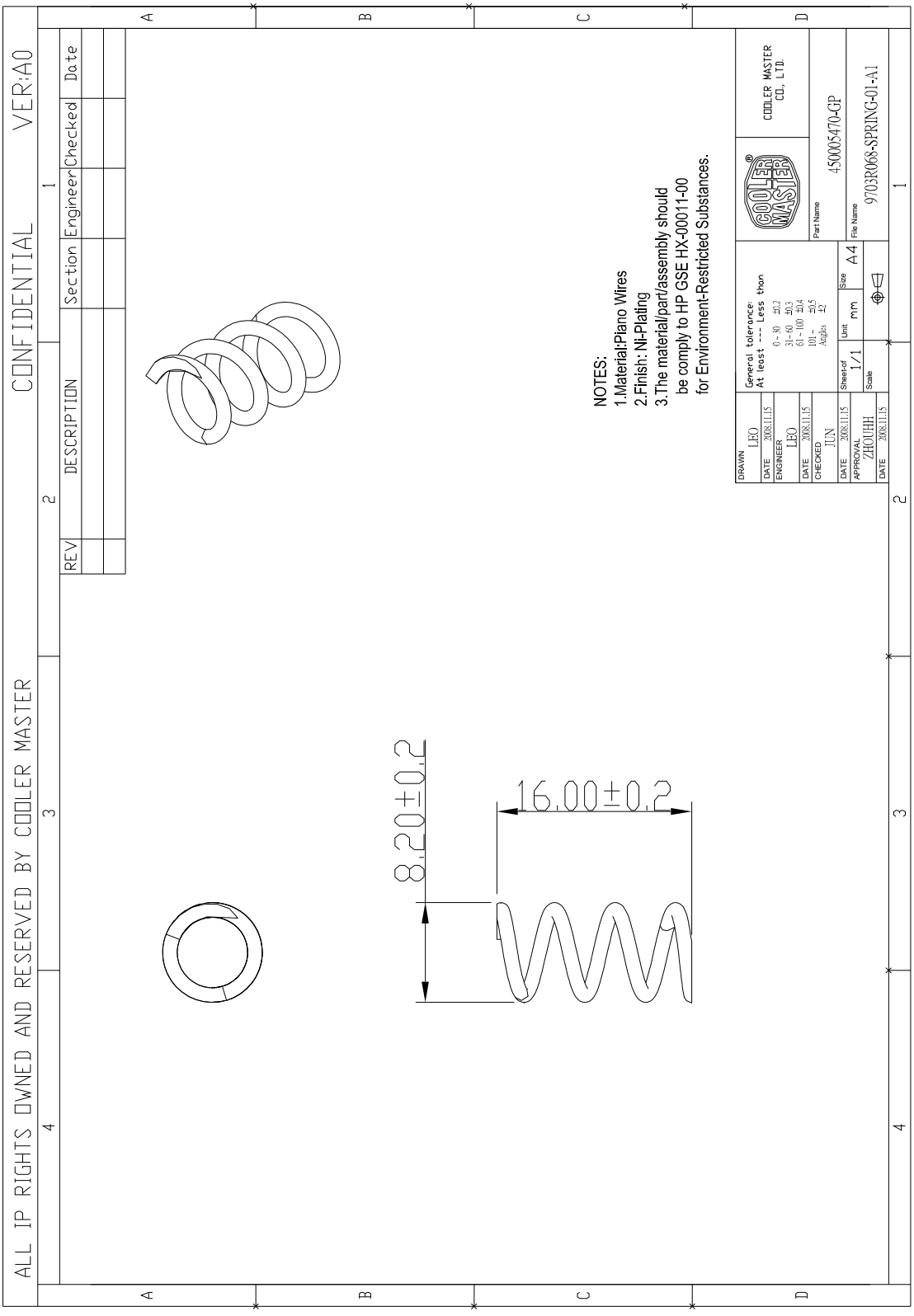
4.13 PIPE3


CONFIDENTIAL VER:A0
ALL IP RIGHTS OWNED AND RESERVED BY COOLER MASTER
REV
DESCRIPTION
Section
Engineer
Checked
Date
NOTES:
1.Material: cu 1020
2.Hot tube: ø=6mm±0.05
3.Aftertreatment : Anti-oxidant
4.Mix and weld and make Cheng closely
5.The power amounting to at least 50 Watts
6.The material/part/assembly should be comply to HP GSE HX-00011-00 for Environment-Restricted Substances.
COOLER MASTER CO., LTD.
Part Name
261003550-GP
File Name
9703R068-PIPE-01-A1
DRAWN LEO DATE 2008.1.15
ENGINEER LEO DATE 2008.1.15
CHECKED JUN DATE 2008.1.15
APPROVAL ZHOUHH DATE 2008.1.15
Sheet of 1/1
Unit mm
Size A4
Scale
Carry and seal and need to be smaller than 10.00mm invalid
116.89+0.5 -0
95
2-R12
40±0.2
70±0.2
END
95
116.89+1 -0.5
19.49±0.20
136°
2.66
R12
ø6±0.05

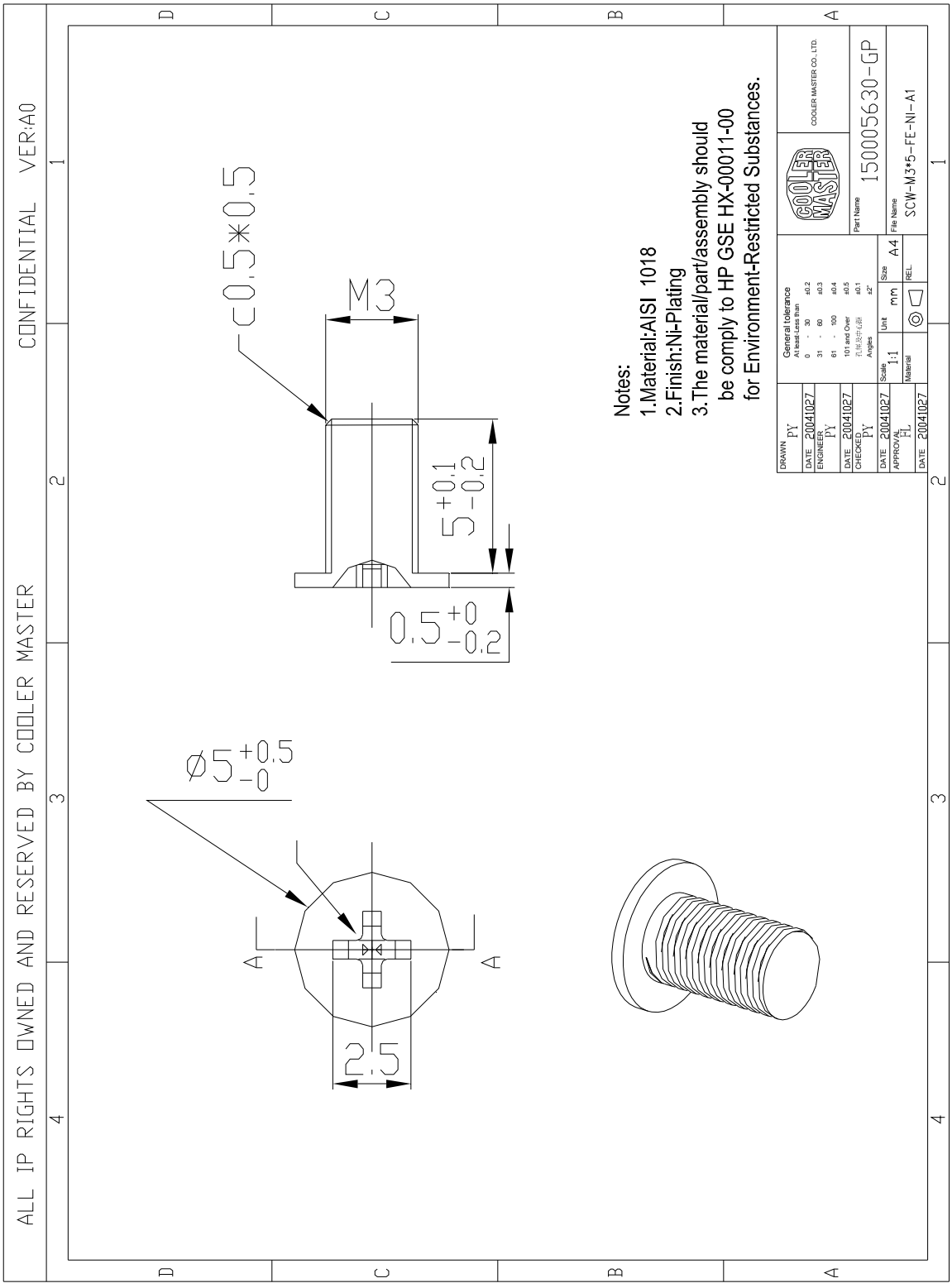
4.14 CPU SCREW



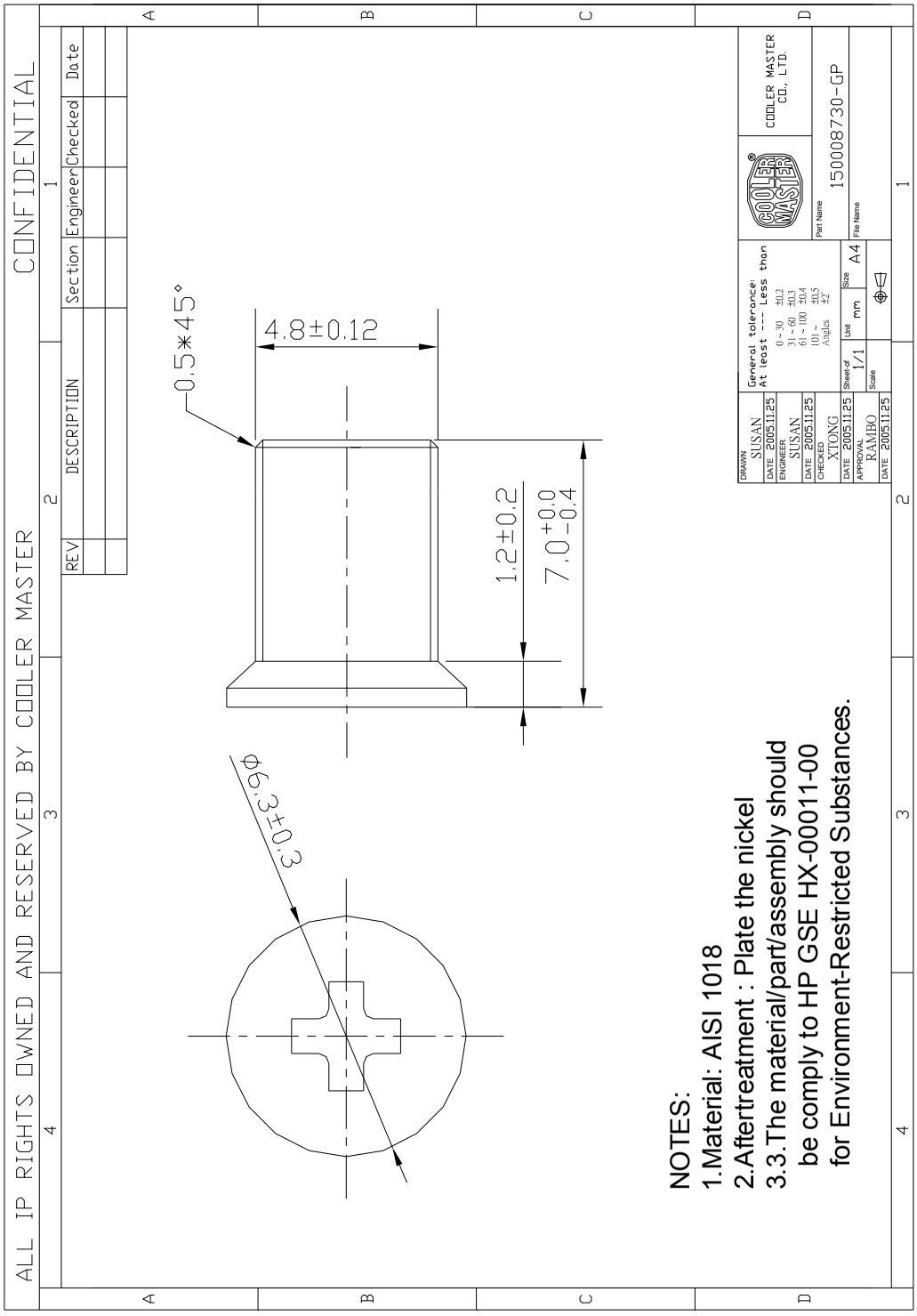
4.15 SPRING


CONFIDENTIAL VER:A0
ALL IP RIGHTS OWNED AND RESERVED BY COOLER MASTER
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.
8.20±0.2
16.00±0.2
COOLER MASTER CO., LTD
Part Name 4500054 70-GP
File Name 9703R068-SPRING-01-A1
Size A4
Unit mm
Sheet of 1/1
Scale
DRAWN LEO DATE 2008.11.15
ENGINEER LEO DATE 2008.11.15
CHECKED JUN DATE 2008.11.15
APPROVAL ZHOUHH DATE 2008.11.15

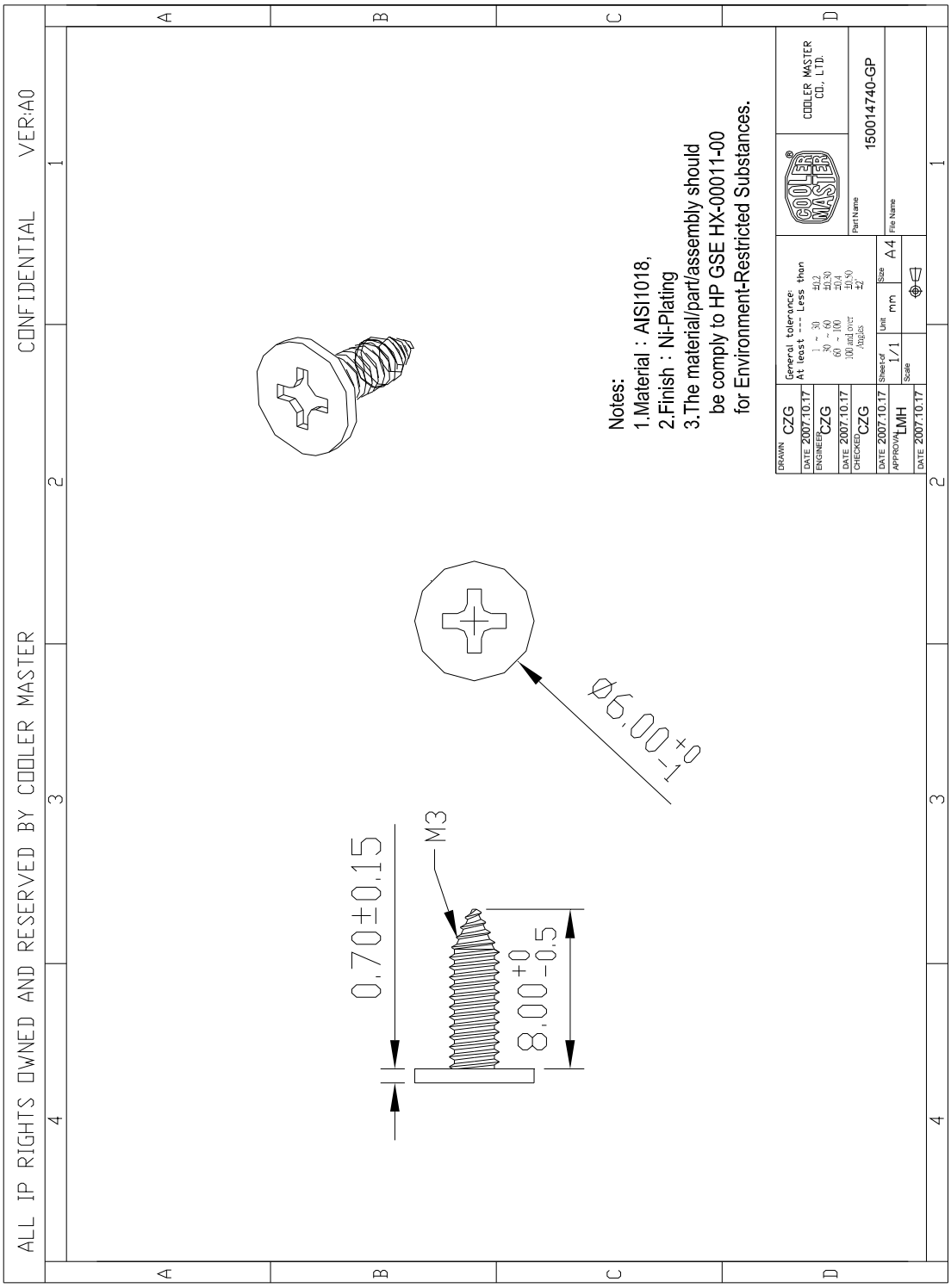
4.16 CLIP SCREW



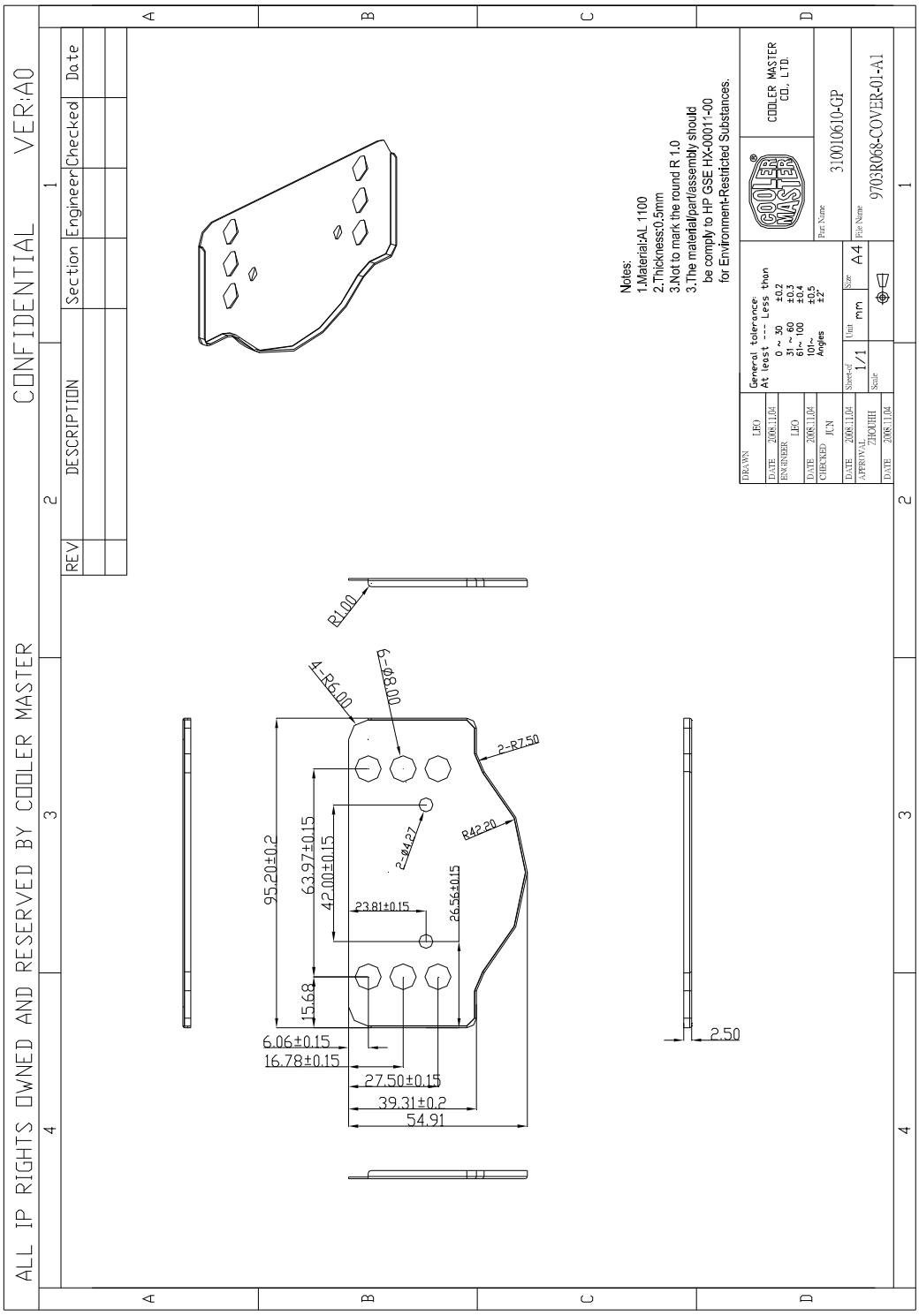
4.17 FAN SCREW



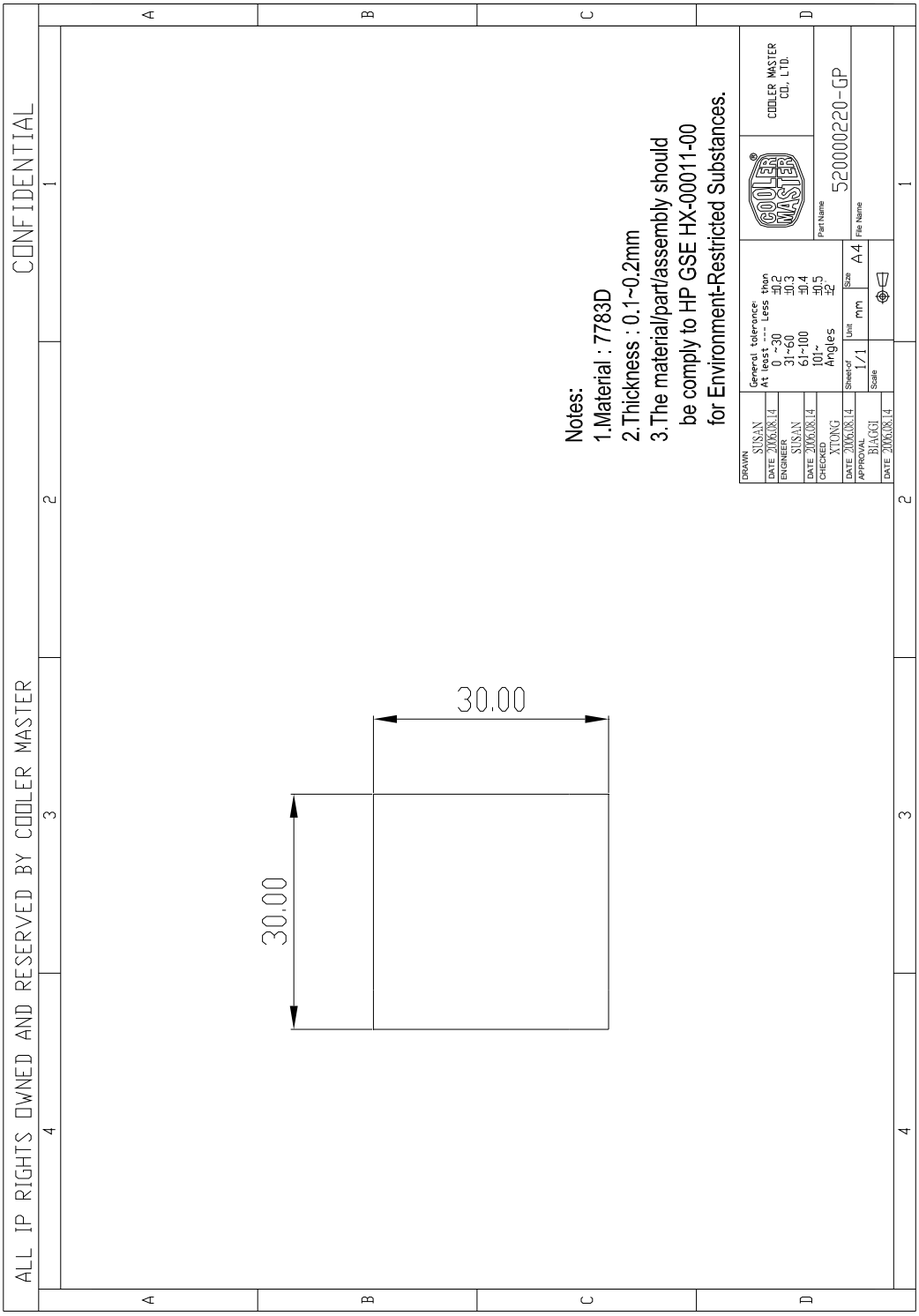
4.18 COVER/DUCT SCREW



4.19 Al_ cover


CONFIDENTIAL VER:A0
ALL IP RIGHTS OWNED AND RESERVED BY COOLER MASTER
REV
DESCRIPTION
Section
Engineer
Checked
Date
Notes:
1.Material:AL 1100
2.Thickness:0.5mm
3.Not to mark the round R 1.0
3.The material/part/assembly should be comply to HP GSE HX-0001-00 for Environment-Restricted Substances.
COOLER MASTER CO., LTD.
Part Name 31001061O-GP
File Name 9703R068-COVER-01-A1
Size A4
Unit mm
Sheet of 1/1
Scale
DRAWN LEO
ENGINEER LEO
CHECKED JCN
APPROVAL ZHOUHH
R1.00
4-R6.00
6-Φ8.00
2-R7.50
R42.20
2-Φ4.27
95.20±0.2
63.97±0.15
42.00±0.15
23.81±0.15
26.56±0.15
15.68
6.06±0.15
16.78±0.15
27.50±0.15
39.31±0.2
54.91
2.50

4.20 INTERFACE



4.21 FAN

SPECIFICATION FOR APPROVAL

Customer.	COOLERMASTER		
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 PRODUCTION 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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TEL : 86-769-86329008
FAX : 86-769-86631589

SPECIFICATION FOR APPROVAL

Customer:	COOLERMASTER		
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 (SAFETY CURRENT 1.00A)
INPUT POWER	9.0 (MAX. 12.00) W
SPEED (REF.)	5000 R.P.M.±10%
MAX. AIR FLOW (AT ZERO STATIC PRESSURE)	3.062 (MIN. 2.756) M^3/MIN. 108.08 (MIN. 97.27) CFM
MAX. AIR PRESSURE (AT ZERO AIRFLOW)	13.57 (MIN.10.99) mmH_2O 0.534 (MIN. 0.433) $inchH_2O$
ACOUSTICAL NOISE (AVG.)	55.0 (MAX. 59.0) dB-A
INSULATION TYPE	UL: CLASS A

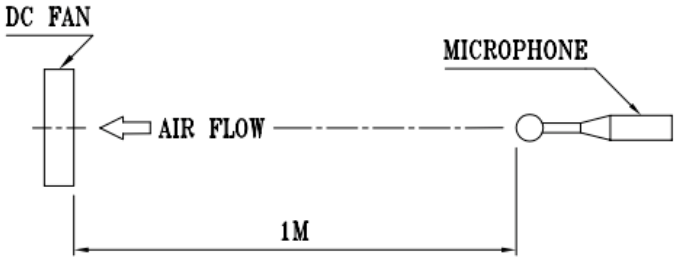
(continued)

PART NO: 200022960-GP

DELTA MODEL: AFB0912SH-BU35

INSULATION STRENGTH	10 MEG OHM MIN. AT 500 VDC (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: FREQUENCY (F00) 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.

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A00

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 gRMS=3.2

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

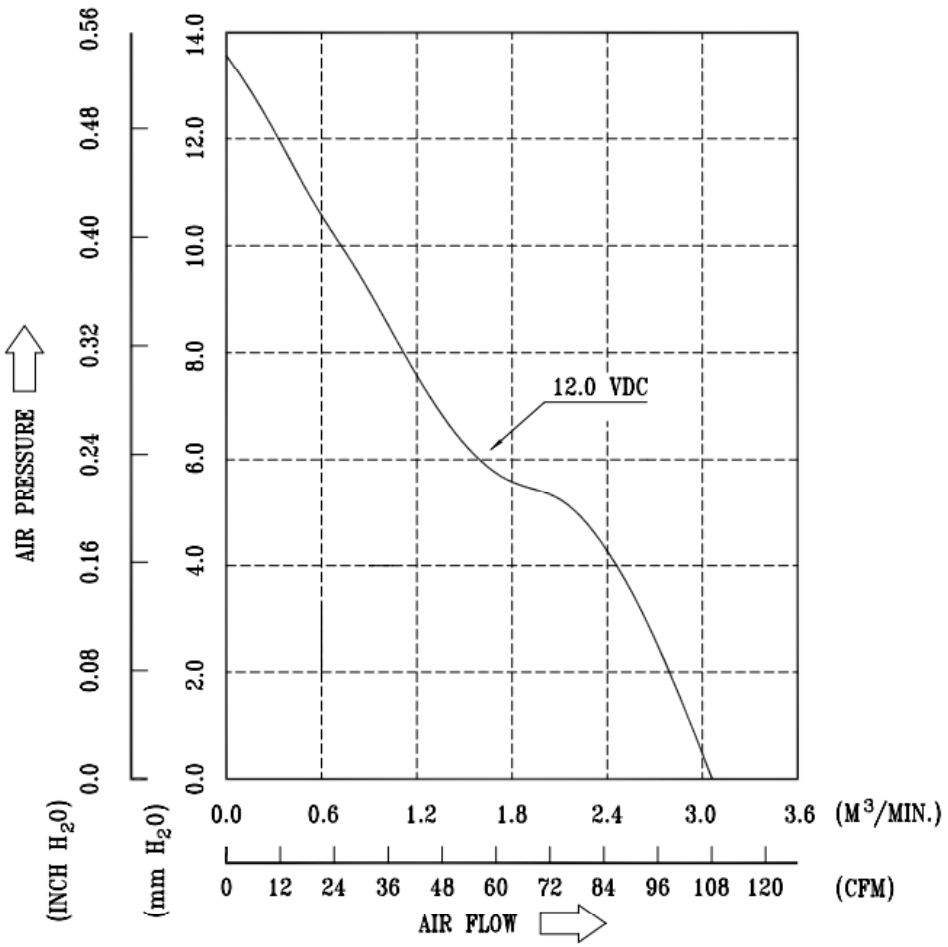
TEST TIME: 2 HOURS ON EACH ORIENTATION

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:



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

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A00

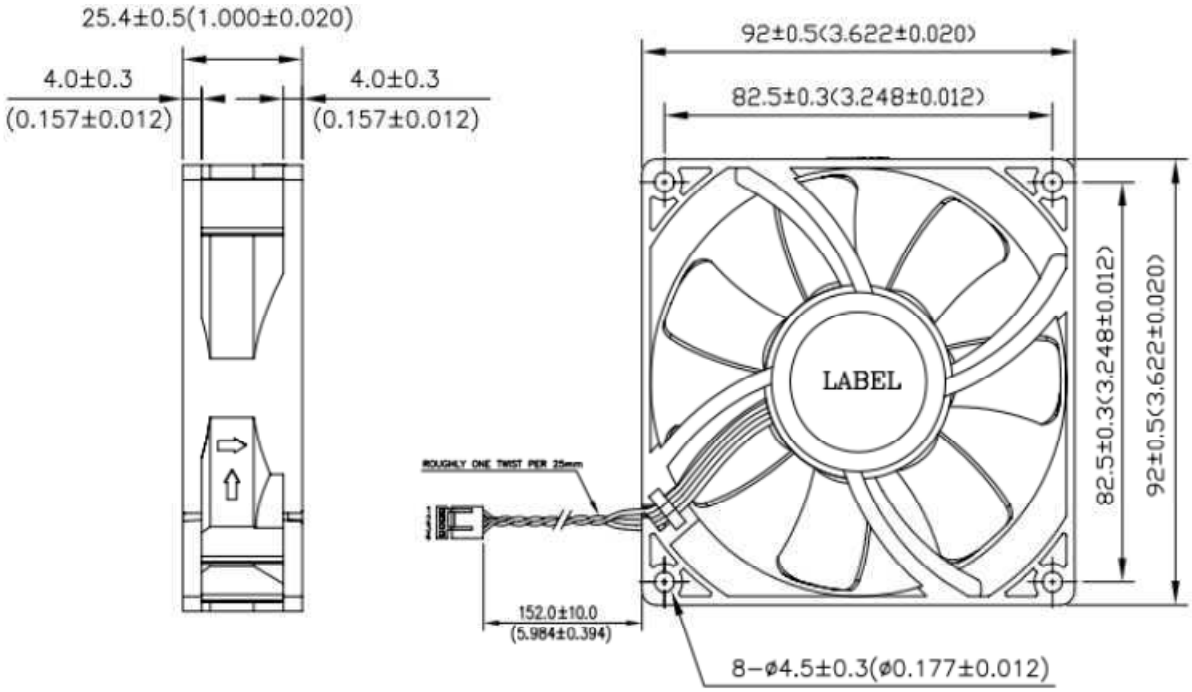
PART NO: 200022960-GP

DELTA MODEL: AFB0912SH-BU35

10. DIMENSION DRAWING:

LABEL:

OR



UNIT: MM(INCH)

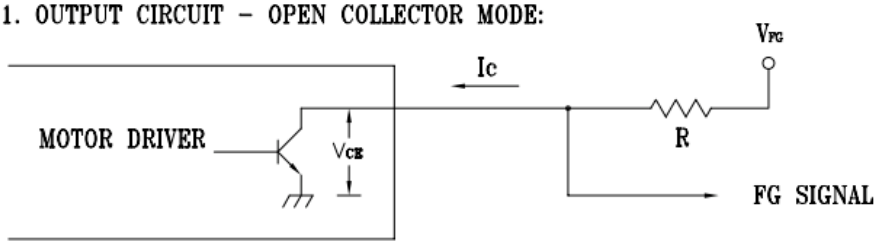
NOTES:

1. LEAD WIRE: UL1061 AWG#26
   PIN 1: BLACK WIRE---(-)
   PIN 2: RED WIRE----(+)
   PIN 3: YELLOW WIRE---(FOO)
   PIN 4: BLUE WIRE---(PWM)
2. HOUSING: MOLEX 47054-1000 (WHITE)
3. TERMINAL: MOLEX 2759T 08-50-0113
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:



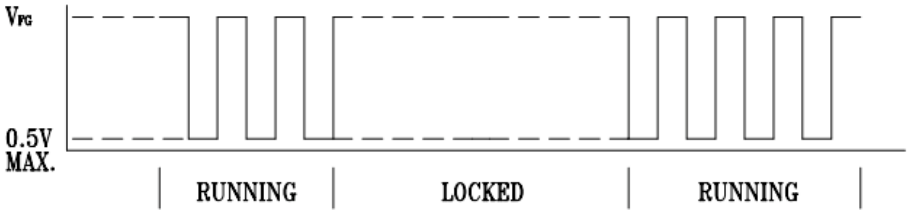
CAUTION:
THE LEAD WIRE OF FG SIGNAL CAN NOT TOUCH
THE LEAD WIRE OF POSITIVE OR NEGATIVE.

2. SPECIFICATION:

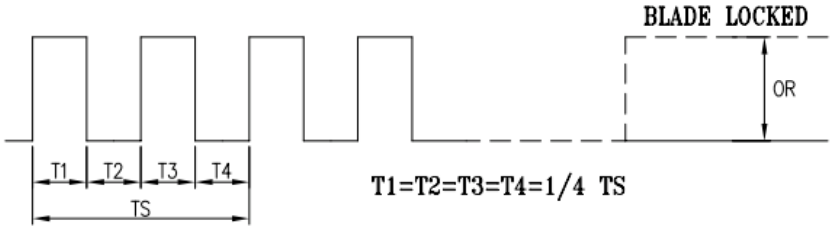
$V_{CE}(sat)$=0.5V MAX V_{FG}=12.6V MAX

I_C =5mA MAX. $R \geq V_{FG}/I_C$

3. FREQUENCY GENERATOR WAVEFORM:



FAN RUNNING FOR 4 POLES



T1=T2=T3=T4=1/4 TS

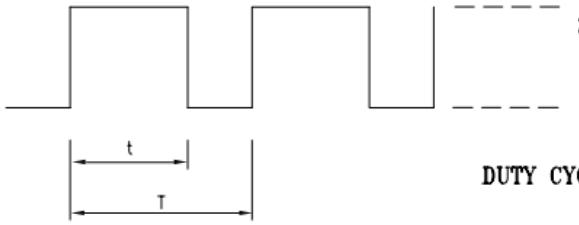
N=R.P.M
TS=60/N(SEC)
*VOLTAGE LEVEL AFTER BLADE LOCKED
*4 POLES

PART NO: 200022960-GP

DELTA MODEL: AFB0912SH-BU35

12. PWM CONTROL SIGNAL:

SIGNAL VOLTAGE RANGE: 0~12.6 VDC



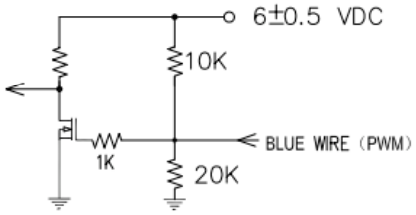
- THE FREQUENCY FOR CONTROL SINGAL OF THE FAN SHALL BE ABLE TO ACCEPT A 20KHZ~30KHZ.
- THE PREFERRED OPERATING POINT FOR THE FAN IS 25K HZ.
- AT 100% DUTY CYCLE,THE ROTOR WILL SPIN AT MAXIMUM SPEED.
- WITH CONTROL SIGNAL LEAD DISCONNECTED,THE FAN WILL SPIN AT MAXIMUM SPEED.

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.

Doc. No: FMBG-ES Form 001 Rev. 01 Date: June 24, 2009

Underwriters Laboratories Inc.

GPWV2.E132003
Fans, Electric - Component

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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 xxxxx, 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 xxxxx, 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 xxxxx, 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 xxxxx, 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 xxxxx, 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 xxxxx, 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 xxxxx, 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 xxxxx, 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 xxxxx, 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 xxxxx, 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 xxxxx, 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 xxxxx, 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 xxxxx, 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 xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model AUB followed by 0912, 0924, followed by H, HH, L, M or VH, followed by (Y), where (Y) may be xxxxx, 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 xxxxx, 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 xxxxx, 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 xxxxx, 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 xxxxx, 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 xxxxx, 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 xxxxx, 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 xxxxx, 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 xxxxx, where x may be A through Z, 0 through 9, "-"

or blank; Model DFB followed by 0612, 0812, 0912, 0824 or 0924 followed by H, L or M, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model DFB followed by 0612, 0812, 0824, 0912 or 0924, followed by HH, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model DFB followed by 0424, followed by H, L, LL, M, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model DFB followed by 0612, 0624, followed by H, HH, L or M, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model DFC followed by 0612, 0812 or 0912, followed by "A" or "B", followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model DFD followed by 0612 or 0624, followed by H, HH, L or M, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model SB followed by 0412, followed by H, L, LL or M, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model SB followed by 0612, 0624, followed by HH, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model SB followed by 0612, 0624, 0812, 0824, followed by H, L or M, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model SB followed by 0612, 0624, followed by HD, LD or MD, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model SB followed by 0812, 0824, followed by HH, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model SB followed by 0812, followed by MSA or MSG, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model AFC0612D(Y), where (Y) may be A through Z, 0 through 9, "-" or blank.

Model AFB followed by 02505, followed by HA, HHA, LA or MA, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model AFB followed by 02512, followed by HA, HHA, LA or MA, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model AFB followed by 0305, followed by -HA, -LA, -LLA, MA, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model AFB followed by 0312, followed by -HA, LA, LLA, MA, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model AFB followed by 03505, followed by HA, LA, MA, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model AFB followed by 0405, followed by HD, LD or MD, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model AFB followed by 03512, followed by LA, MA or HA, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model AFB followed by 0405, 0412 or 0424, followed by HD, HHD, LD, MD, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model AFB followed by 0412 or 0424, followed by HD, HHD, LD or MD, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model AFB followed by 0505, 0512, followed by HA, LA or MA, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model AFB followed by 0524, followed by HB, HHB, LB or MB, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model AFB followed by 0605, followed by HB, HHB, LB, LLD, MB, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model AFB followed by 0605, followed by LLD, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model AFB followed by 0605, followed by HA, LA or MA, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model AFB followed by 0612, followed by HA, HB, HHB, LA, MA or MB, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model AFB followed by 0612 or 0624, followed by HD, HHD, LB, LD, LLD, MD, VHB or VHD, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model AFB followed by 0624, followed by HB, HHB, LB, MB or VHB, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model AFB followed by 0648, followed by EH, H, HH, L, M, SH or VH, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model AFB followed by 0705, followed by H, L or M, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model AFB followed by 0712 or 0724, followed by H, HA, HH, HHA, L, LA, M, MA, VH or VHA, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model AFB followed by 0748, followed by H, HH, L or MM, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model AFB followed by 0812 or 0824, followed by LL, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model AFB followed by 0812 or 0824, followed by H, L, LL, M, SH or VH, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model AFB followed by 0812 or 0824, followed by HB, HHB, LB, LLB, MB, SHB or VHB, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model AFB followed by 0848, followed by H, HH, L or M, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model AFB followed by 0912 or 0924, followed by H, HH, L, M or VH, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model AFB followed by 0948, followed by H, HH, L or M, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model WFB followed by 1212, followed by ME, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model WFB followed by 1212, followed by ME, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0

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.

VDE REG.-Nr. 1764 oder/or VDE oder/or 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)

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

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

Offenbach, 1994-06-08
(letzte Änderung/updated 2005-01-26)

VDE VERBAND DER ELEKTROTECHNIK
ELEKTRONIK INFORMATIONSTECHNIK e.V.

VDE Prüf- und Zertifizierungsinstitut
Gutachten mit Fertigungsüberwachung

Ausweis-Nr. / Licence No. 1764 | Blatt / page 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 / 50676 / FG13 / DO

letzte Änderung / *updated* Datum / *Date*
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**
AFB0612HHB	**DC 12 V**
AFB0624LB	**DC 24 V**
AFB0624MB	**DC 24 V**
AFB0624HB	**DC 24 V**
AFB0624HHB	**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
Merianstrasse 28, D-63069 Offenbach
Phone +49 (0) 69 83 06-0
Telefax +49 (0) 69 83 06-555

6.Material Of Certificate

6.1 AL 6063 T5(HEAT SINK)

東峰鋁型材制品有限公司

材 質 檢 驗 報 告

材質類型AL:6063T5　　客戶料號:101-6048881-01　　檢驗日期:30/5/2006

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	0.0150	0.5560	0.1000	.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

公司蓋章

主管:　　檢驗員:薛昭晴

6.2 PC-L1250Y (Fan Cover&Duct)

TEIJIN CHEMICALS LTD.

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

TELEPHONE: TOKYO(3506)
TELEX: 222-3894 TEICHE J
FACSIMILE: TOKYO(3502)9629
TOKYO(3506)4750
TOKYO(3580)8580
CABLE ADDRESS: TEIJINKAGEI TOKYO

YOUR REF.
OUR REF.

To whom it may concern

February 4, 1999

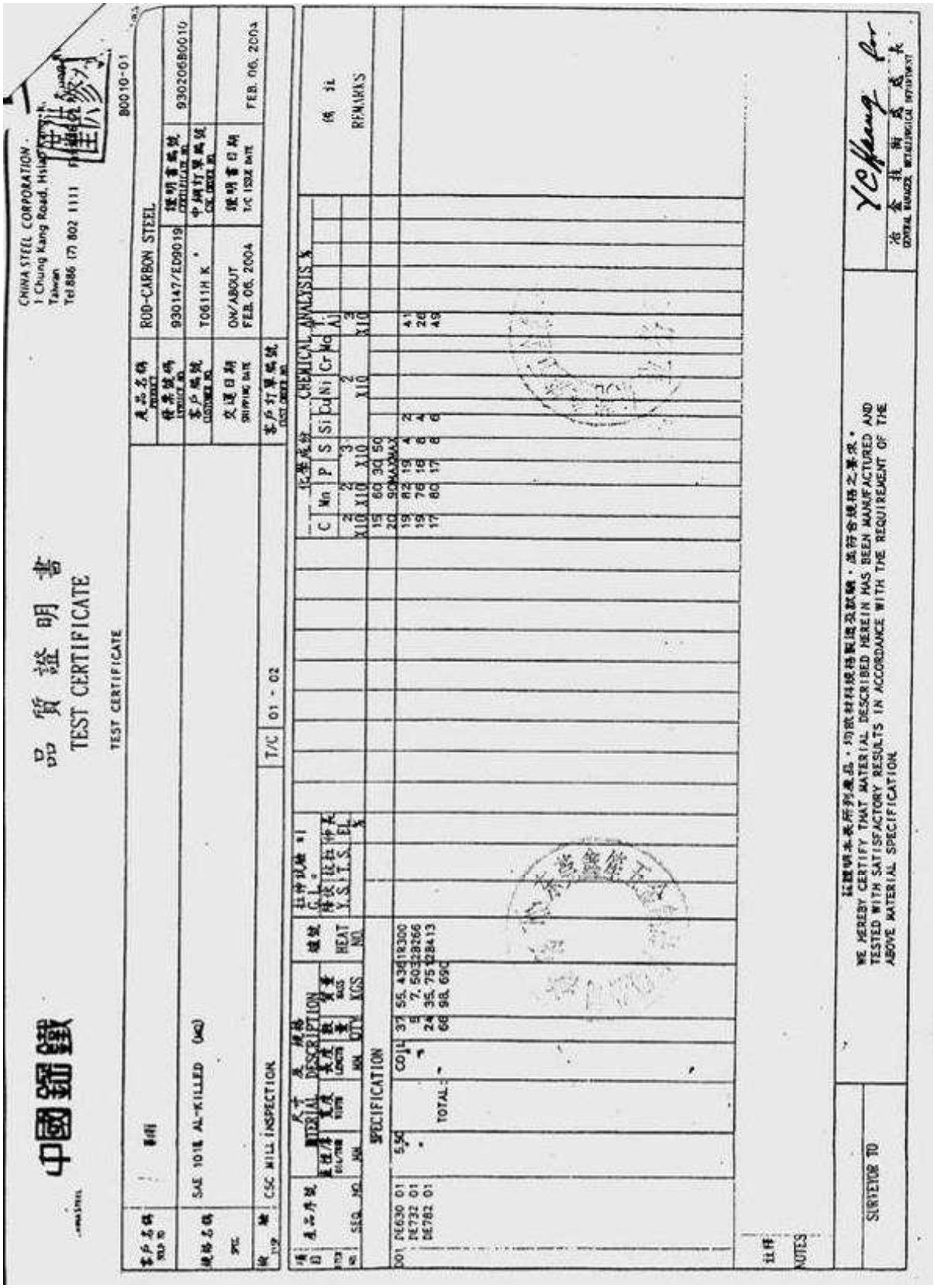
Re: Result of Panlite® Extraction Test

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

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

6.3 AISI 1018(Screw)



6.4 PAINO WIRES(Spring)

Kiswire FACTORY:#753-1,SOTO-RI,SANGBUK-MYUN,YANGSAN-CITY,KYOUNGNAM,(626-850),KOREA
TEL:++82-55-375-3500~4 FAX:++82-55-375-3505

TEST CERTIFICATE
시 험 성 적 서

Date of Shipment : 선적/출하일자 2003 - 12 - 09
Date of Issue : 발행일자 2003 - 12 - 08

Customer 고객 FEI HANG BRASS WIRE MANUFACTURING CO.,LTD.	Wire Dimension 치수 1.4 mm SW-C	Commodity 제품 Hard Drawn Steel Wires	Specification 적용규격 JIS G 3521
Customer's PO No. 수주번호 03/088	KISWIRE's Lot No / BX No. 지시번호 HS-3213/02	L/C No.(T/T No./D/A No) T/T	Total Coils 수량 31 / Total Net weight 총중량 3,079 kgs

A. Chemical Composition(%)   Rod Maker : PSC   Heat No : X73952

		Chemical Composition(%)											
		C	Si	Mn	P	S	Cu	Cr	V	Al	O2	Ti	N
Specification	Min	0.690	0.150	0.600									
	Max	0.760	0.350	0.900	0.030	0.030							
Actual		0.720	0.206	0.690	0.014	0.012							

B. Mechanical Properties

Item / Coil No		Diameter 선경 1.4 mm		Tensile Strength	Torsion Value	Torsion State	Wrap	Bend	Coiling	Reduction of Area	Decarburization	Defects	Appearance	Hardness	Coil weight	Remark
		Tolerance 허용치	Ovality 편경차	인장강도 (N/mm²)	비틀림횟수 (Turns)	비틀림상태	감기시험 (4xD)	굽힘시험 (90°)	코일링시험	단면감소율 (%)	탈탄 (mm)	흠깊이 (mm)	외관	경도	중량 (kgs)	비고
Spec.	Min	1.370		1,860	20	Good							Good			
	Max	1.430	0.030	2,110												
Max 최대		1.398	0.001	1,957	39											
Ave 평균		1.396	0.001	1,956	36	Pass							Pass			
Min 최소		1.396	0.001	1,955	33											

6.5 SK5(E-ring)

材 質 證 明 書

MATERIAL CERTIFICATE

富達金屬制品有限公司
FU DA METAL PRODUCTS CO. LTD

製品編號	A2004052207	生產批號 Customer No	2004052309	開立日期 Issue Date	2004-05-23	證明書編號 Certificate No	2004052309
品名	SK5	訂單編號 Order No		依據規範 By Standard	JIS		

項次 Item	鋼卷編號 Coil No.	厚度 (MM) Thickness	寬度 (MM) Width	長度 (MM) Length	數量 Quantity	重量 (KG) Weight	成品表面加工 Surface Finish
1		0.60		COIL			
2				COIL			
3				COIL			
4				COIL			
5				COIL			
6				COIL			

規格	化學 (Chemical Analysis Wt%)									規格 Spec / 試片編號 Specimen	硬度 Hardness	降伏強度 (N/mm^2) Yieldstress	引張強度 (N/mm^2) Tensile Stress	伸長率 (%) Elongation	彎曲試驗 Bend Test
Spec	C	Si	Mn	P	S	Ni	Cr	Mo	N						
項次 Item	0.80 0.90	0.35 max	0.50 max	0.010 max	0.010 max						HV	min	min	min	min
1	0.[illegible]	0.2[illegible]	0.3[illegible]	0.020	0.004					2004052309	170				OK
2															
3															
4															
5															
6															

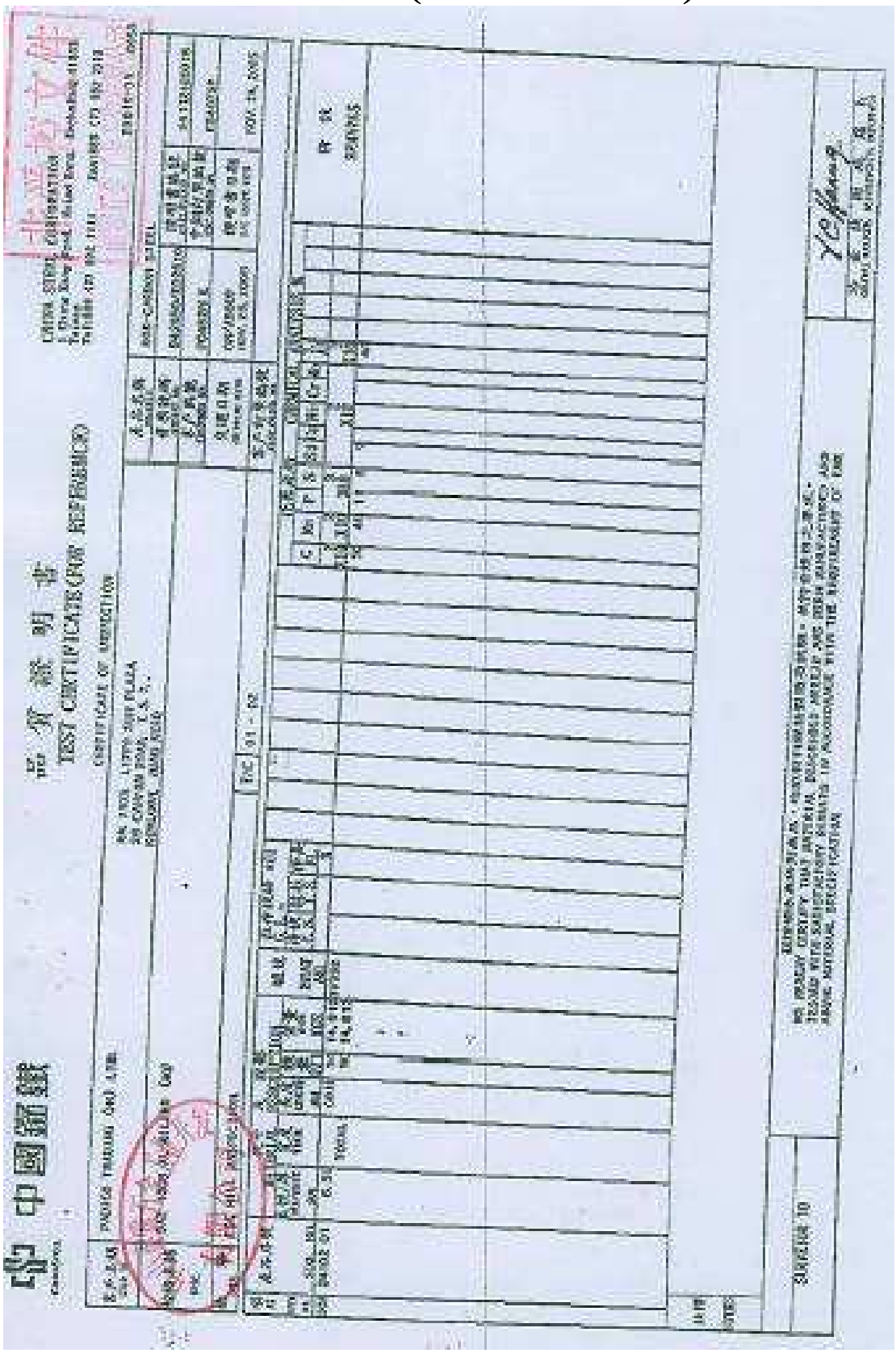
以上[illegible]僅供參考，並不代表該材料的最大或最小值，也不用於設計。任一具體材料的[illegible]如有異常，請於三天內回復。
[illegible]
[illegible] reference only, and should not be construed as maximum or minimum values for specification or for final [illegible] of material may vary from those shown herein.

Only discrepancy pls contact us within3day's.

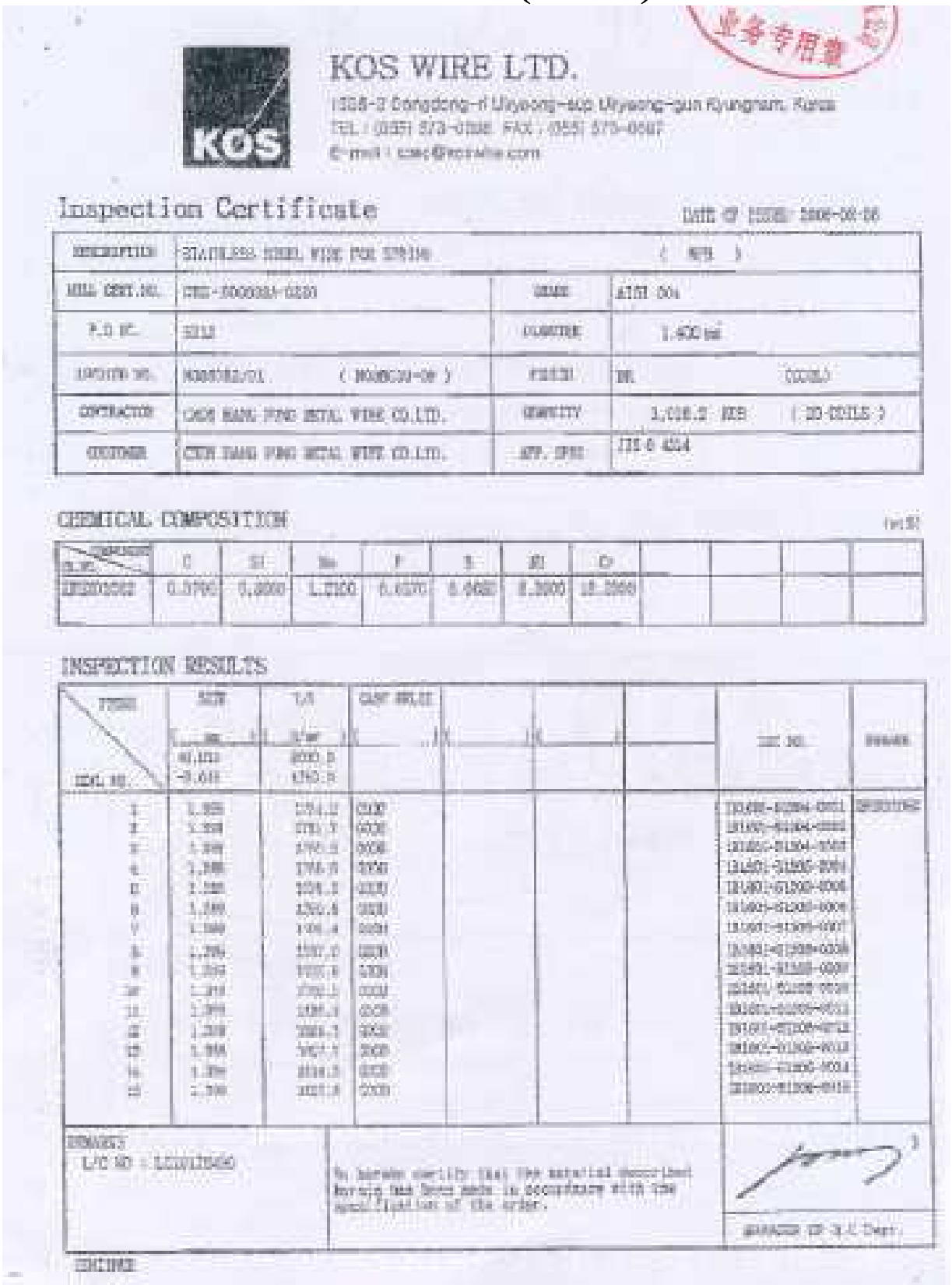
富达金属材料公司 专用章

Manger ,Technology Depart[illegible]

6.6 C1008(FAN GRILL)



6.7 SUS304(CLIP)



KOS WIRE LTD.

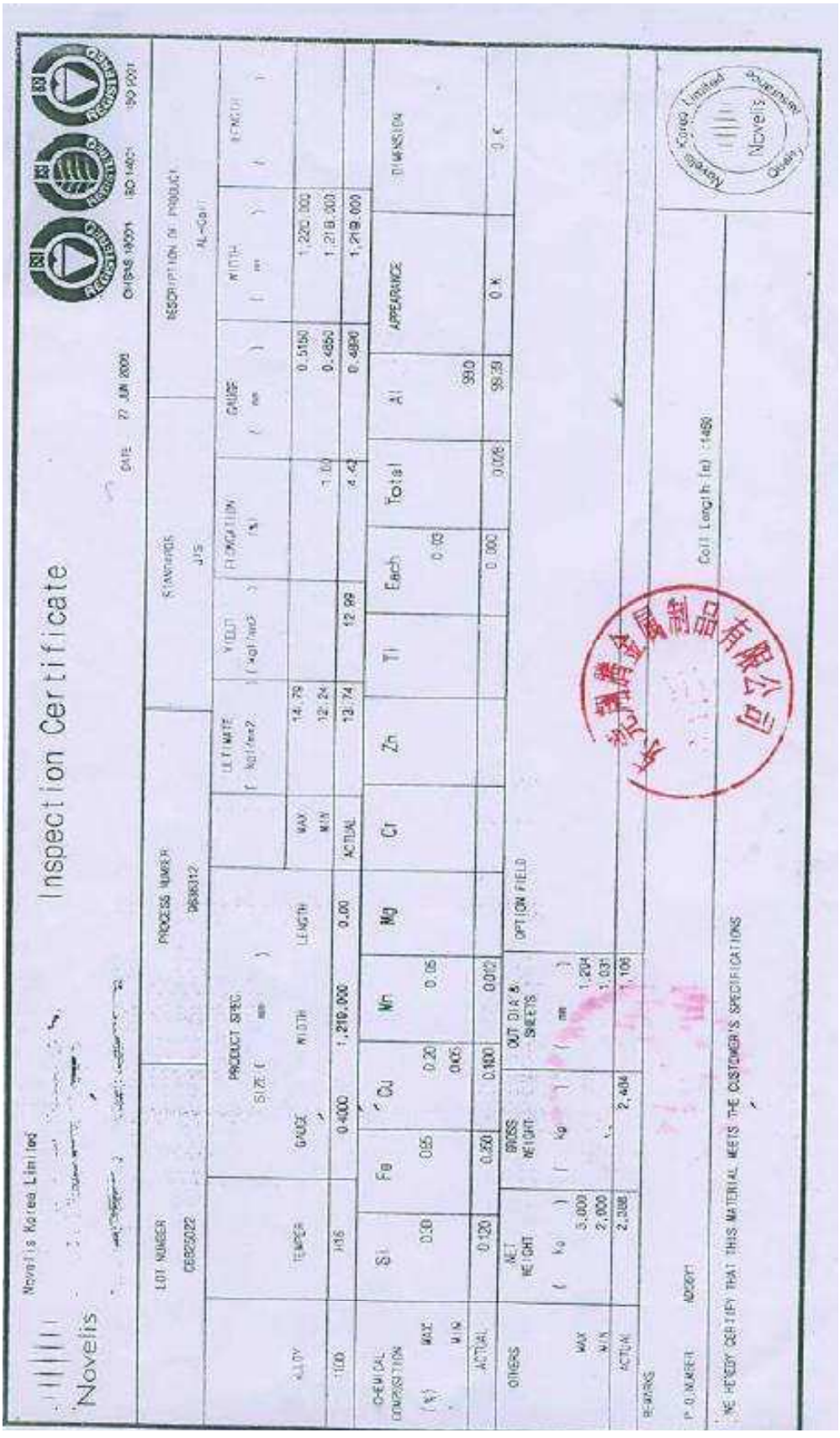
Inspection Certificate

CHEMICAL COMPOSITION

INSPECTION RESULTS

6.8 AL1100(FIN&Al cover)

1



6.9 INTERFACE(X-23-7783D)

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, Chiycdaku, 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.

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.

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

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.

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 REAUTHORIZAITION 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

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 Thermal Test Report

Thermal Module Test Data Sheet ---Thermal Resistance Test Report								
Test Platform:	Intel LGA 2011 TTV					Test odd:		
Testing Engineer:	Nancy & Osoul					Date:	2015/05/12	
Test Description:	散熱片效能測試							
Heatsink/fan description								
1. Heatsink Change List	Heatsink Rev.	Heatsink P/N:		Description & Change List				
2. Heatsink Photo	  							
3. Test condition	Heatsink Vendor	CoolerMaster						
	CPU	Intel 2011 TTV						
	Mainboard Model	ATX TTB (A42452-001)						
	Test envirnment	open system						
	Heatsink grease	ShinEtsu 7783						
	Heatsink Fan	9225 九姆動靜業 12v						
Test Result								
Items	Tc(℃)	Ta (℃)	I	V	Fan I	Fan V	CPU Power(W)	Rca(℃/W)
130W	41.60	22.90	4.75	27.40	0.32	12.10	130.150	0.1437
150W	43.80	22.60	5.05	29.60	0.32	12.10	149.480	0.1418
180W	47.20	22.30	5.50	32.70	0.32	12.10	179.850	0.1384
Testing Conclusion	  							

6.11 Clipforce Test Report

Sample #	Force(1bs)[SPEC:50~801bf]
1	55.35
2	56.21
3	53.89
4	55.08
5	53.96
6	54.83
7	55.24
8	54.51
9	56.08
10	54.89
Max	56.21
Min	53.89
AVG	55.00

Photo:

7. CE

CE

NVLAP LAB CODE 200079-0

SPORTON LAB.

Certificate No: EC621413

CERTIFICATE

EQUIPMENT : Cooler
MODEL NO. : XXXXXXXXXXXXXXX (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.

SPORTON LAB.

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 Feb. 24. 2006

Jones Chan
Supervisor

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 Peitou 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 786 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.

9. Packing

6Sets in 1 Layer
2Layers in 1 Carton
Q'ty : 12Pcs/Carton
Carton size:
455*275*234mm