

SUNON

SPECIFICATION FOR APPROVAL

FOR REFERENCE

CUSTOMER :
MODEL NO : CM036-20002N
DESCRIPTION : Thermal Module
DIMENSIONS : 228.58X127X16.8 mm
SUNON SPEC. NO. : C01003960G-00
CUSTOMER APPROVAL NO. :
APPROVED BY CUSTOMER :
(AUTHORIZED)

DRAWN Fei Fei	CHECKED Qian	APPROVED Jordan	SPEC. NO	C01003960G-00
			ISSUED DATE	12. 20. 2021
			EDITION	0
			REVISION DATE	

建準電機工業股份有限公司

SUNONWEALTH ELECTRIC MACHINE INDUSTRY CO., LTD.

No. 30, LN. 296, XINYA RD., QIANZHEN DIST TEL:886-7-8135888

KAOHSIUNG CITY 80673, TAIWAN(R. O. C) FAX:886-7-8230505/8230606/8231010

URL:<http://www.SUNON.com>

E-mail:SUNON@email.SUNON.com.tw

SPECIFICATION FOR APPROVAL

CHECK LIST

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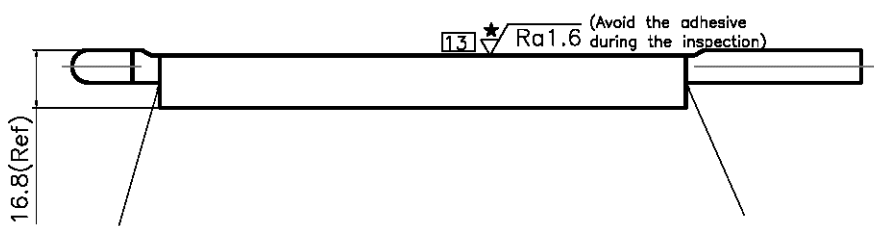
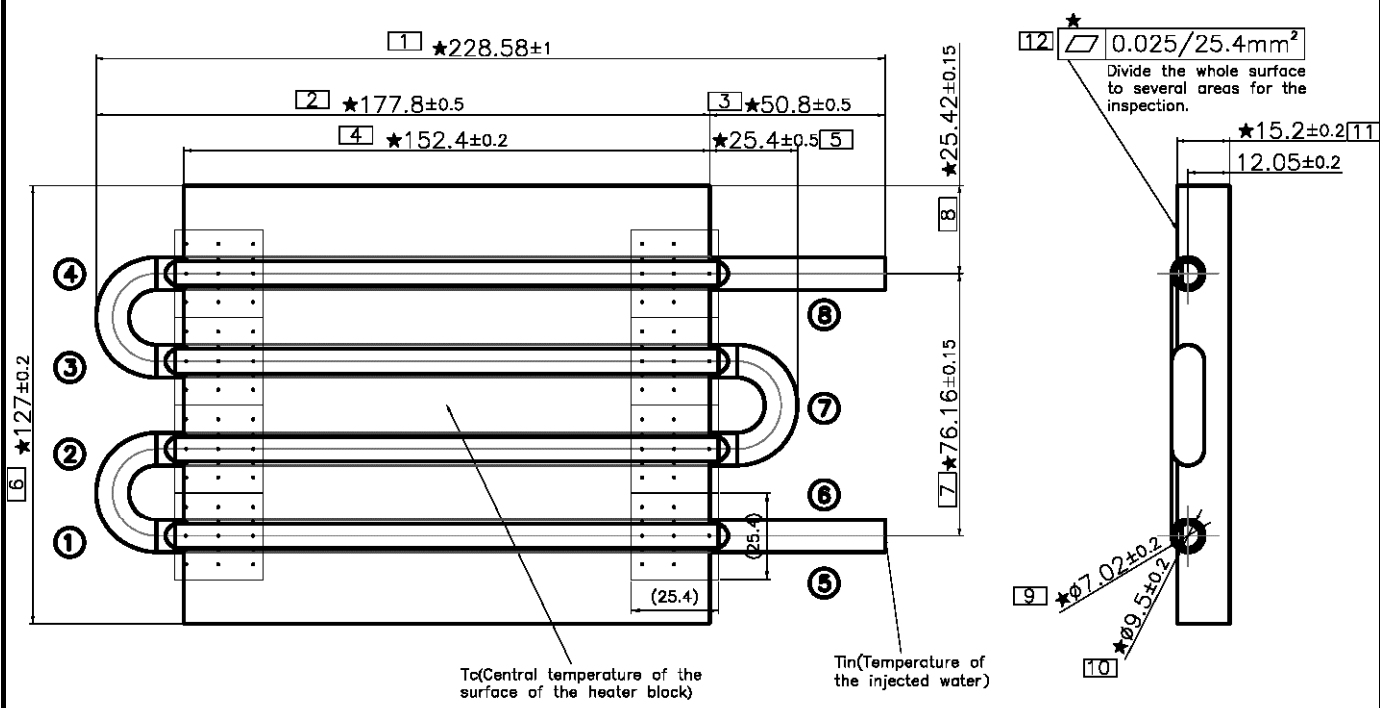
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MODEL : CM036-20002N**1.SPECIFICATIONS**

1. Application	N/A	
2. Heat Sink Dimension	152.4X127X15.2 mm	
3. Heat Sink Material	AL1050	
4. Cooling Method	N/A	
5. Thermal Grease / PAD	N/A	
6. Fan Dimension	N/A	
7. Fan Speed (with Heat Sink)	N/A	
8. Fan Airflow (with Heat Sink)	N/A	
9. Fan Rating Voltage	N/A	
10. Fan Rating Current (with Heat Sink)	N/A	
11. Fan Power Consumption (with Heat Sink)	N/A	
12. Fan Bearing Type	N/A	
13. Fan Connector	N/A	
21. Cooling Module Noise	N/A	
15. Fan Operating Voltage Range	N/A	
16. Operating Temperature	-10 to + 70 deg. C	
17. Storage Temperature	-40 to + 70 deg. C	
18. Weight	922 g	
19. Life Expectance	N/A	
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2.DIMENSION



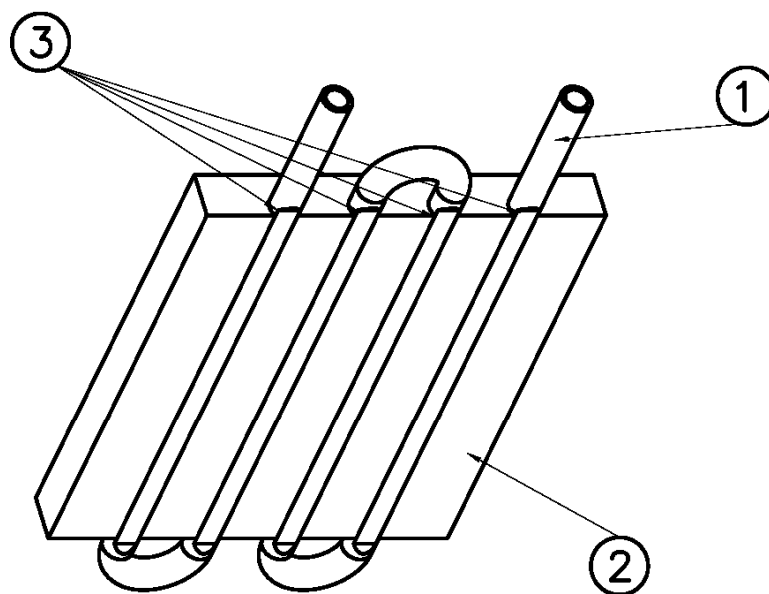
Pot the bottom of the copper tube with the epoxy compound (EMS 498-13A/B 4.5W/m·k). Make sure the compound had hardened completely. The color of the hardened epoxy: gray.

UNIT: mm

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2.DIMENSION



3	Epoxy resin	epoxy	EMS 498-13A/B 4.5W/m·k	--
2	Heat Sink	AL1050	152.4*127*15.2 HF	1
1	Copper Tube	C1100	D9.5*d7.02*886.5L HF	1
項次 ITEM	名稱 NAME	材 質 MATERIAL	規 格 SPECIFICATION	數量 QTY

零 件 表
PART DETAIL LIST

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3.FAI & CPK TEST

1. FAI TEST

FAI DATA SHEET

Part Number :	CM_4PASS	Supplier :		Date:	2021/4/23	New:	
Part Description :		ISR No :		Cavity / Tool #		Revised :	
Revision :		Material Spec:		Inspector:		Resubmission:	

MOI-Method of inspection abbreviation: HG = Height gauge, MIC = Micrometer, DC = Dial Caliper, P = Protractor, OC = Optical Comparator, CG = Checking Gauge, CMM = Coordinate Measuring Machine,
 OMM = Optical Coordinate Measuring Machine, HT = Hardness Trestler, TG = Thickness Gauge, VIS = Visual, PG = Plug Gauge,

OTHER:

DRAWING LOCATION	NOMINAL	+TOL	-TOL	Sample Number					Deviation from Nominal					Mean	% Tolerance		Accept/Reject		Inspection Method
				1	2	3	4	5	1	2	3	4	5		UPPER	LOWER	HIGH	LOW	
				1	228.58	1.000	1.000	#####	228.830	#####	#####	228.740	0.360		0.250	0.140	0.470	0.160	
2	177.80	0.500	0.500	#####	177.810	#####	#####	177.750	0.230	0.010	0.030	0.250	-0.050		50%	10%	Accept	Accept	CMM
3	50.80	0.500	0.500	50.920	50.980	50.980	51.050	51.020	0.120	0.180	0.180	0.250	0.220		50%	0%	Accept	Accept	CMM
4	152.40	0.200	0.200	#####	152.450	#####	#####	152.480	###	0.050	0.080	0.040	0.080		40%	20%	Accept	Accept	CMM
5	25.40	0.500	0.500	25.100	25.290	25.320	25.350	25.240	###	###	###	###	-0.160		0%	60%	Accept	Accept	CMM
6	127.00	0.200	0.200	#####	127.060	#####	#####	127.010	0.110	0.060	0.040	0.030	0.010		55%	0%	Accept	Accept	CMM
7	76.16	0.150	0.150	76.050	76.146	76.190	76.220	76.010	###	###	0.030	0.060	-0.150		40%	100%	Accept	Alert	CMM
8	25.42	0.150	0.150	25.513	25.325	25.454	25.404	25.557	0.093	###	0.034	###	0.137		91%	64%	Alert	Accept	CMM
9	7.02	0.200	0.200	6.921	7.073	6.922	6.916	7.181	###	0.053	###	###	0.161		81%	52%	Alert	Accept	CMM
10	9.50	0.200	0.200	9.433	9.551	9.422	9.466	9.581	###	0.051	###	###	0.081		40%	39%	Accept	Accept	CMM
11	15.20	0.200	0.200	15.250	15.280	15.250	15.280	15.270	0.050	0.080	0.050	0.080	0.070		40%	0%	Accept	Accept	CMM
12-1	0.025	0.000	0.025	0.003	0.004	0.005	0.003	0.005	###	###	###	###	-0.020		-	89%	Accept	Alert	CMM
12-2	0.025	0.000	0.025	0.004	0.009	0.003	0.007	0.019	###	###	###	###	-0.006		-	86%	Accept	Alert	CMM
12-3	0.025	0.000	0.025	0.005	0.009	0.005	0.011	0.006	###	###	###	###	-0.019		-	82%	Accept	Alert	CMM
12-4	0.025	0.000	0.025	0.004	0.003	0.002	0.004	0.004	###	###	###	###	-0.022		-	91%	Accept	Alert	CMM
12-5	0.025	0.000	0.025	0.003	0.002	0.003	0.003	0.003	###	###	###	###	-0.022		-	91%	Accept	Alert	CMM
12-6	0.025	0.000	0.025	0.002	0.006	0.002	0.004	0.003	###	###	###	###	-0.022		-	91%	Accept	Alert	CMM
12-7	0.025	0.000	0.025	0.003	0.004	0.005	0.003	0.005	###	###	###	###	-0.020		-	89%	Accept	Alert	CMM
12-8	0.025	0.000	0.025	0.004	0.003	0.003	0.014	0.006	###	###	###	###	-0.019		-	89%	Accept	Alert	CMM
13	1.60	0.000	1.600	0.602	0.437	0.222	0.106	0.232	###	###	###	###	-1.368		-	93%	Accept	Alert	CMM

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3.FAI & CPK TEST

1.CPK TEST

Model : CM036-20002N(INC-4PASS)

日期 : 2021/11/15

No	1	2	3	4	5
(Project)	Size#4	Size#7	Size#11	Differential pressure	air-tight test
Central value of the spec	152.400	76.160	15.200		
UCL	152.600	76.310	15.400	500.000	0.020
LCL	152.200	76.010	15.000		
UNIT (unit)	mm	mm	mm	Kpa	Mpa
ave	152.408	76.154	15.201	320.668	0.000
max	152.449	76.203	15.237	329.923	0.000
min	152.361	76.112	15.150	309.595	0.000
1	152.426	76.136	15.236	329.9	0.0
2	152.428	76.180	15.175	326.0	0.0
3	152.421	76.153	15.162	325.4	0.0
4	152.447	76.119	15.203	328.1	0.0
5	152.400	76.163	15.195	316.3	0.0
6	152.372	76.202	15.229	320.1	0.0
7	152.394	76.112	15.233	328.5	0.0
8	152.365	76.118	15.216	309.6	0.0
9	152.443	76.158	15.219	315.9	0.0
10	152.383	76.187	15.191	319.3	0.0
11	152.411	76.135	15.236	322.7	0.0
12	152.372	76.151	15.210	315.2	0.0
13	152.443	76.133	15.160	321.9	0.0
14	152.417	76.148	15.195	316.2	0.0
15	152.413	76.128	15.229	324.2	0.0
16	152.402	76.190	15.227	316.5	0.0
17	152.361	76.196	15.190	325.9	0.0
18	152.391	76.165	15.230	317.4	0.0
19	152.449	76.147	15.237	315.9	0.0
20	152.362	76.155	15.168	323.0	0.0
21	152.410	76.203	15.177	323.9	0.0
22	152.396	76.138	15.211	323.4	0.0
23	152.445	76.200	15.151	323.9	0.0
24	152.423	76.186	15.159	315.9	0.0
25	152.374	76.144	15.218	319.3	0.0
26	152.406	76.121	15.186	322.7	0.0
27	152.443	76.119	15.207	315.2	0.0
28	152.399	76.137	15.198	321.9	0.0
29	152.390	76.118	15.227	316.2	0.0
30	152.422	76.168	15.154	324.2	0.0
31	152.439	76.193	15.215	316.5	0.0
32	152.406	76.148	15.227	325.9	0.0
33	152.368	76.128	15.150	317.4	0.0
34	152.439	76.152	15.195	315.9	0.0
35	152.405	76.161	15.232	323.0	0.0

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3.FAI & CPK TEST

2.CPK TEST

Model : CM036-20902N(INC-4PASS)

日期 : 2021/11/15

No	1	2	3	4	5
(Project)	Size#4	Size#7	Size#11	Differential pressure	air-tight test
Central value of the spec	152.400	76.160	15.200		
UCL	152.600	76.310	15.400	500.000	0.020
LCL	152.200	76.010	15.000		
UNIT (unit)	mm	mm	mm	Kpa	Mpa
ave	152.400	76.162	15.207	320.668	0.000
max	152.446	76.210	15.250	329.923	0.000
min	152.350	76.110	15.155	309.595	0.000
1	152.396	76.180	15.214	329.9	0.0
2	152.433	76.193	15.250	326.0	0.0
3	152.406	76.166	15.170	325.4	0.0
4	152.406	76.201	15.194	328.1	0.0
5	152.361	76.133	15.246	316.3	0.0
6	152.429	76.161	15.164	320.1	0.0
7	152.362	76.153	15.219	328.5	0.0
8	152.429	76.136	15.207	309.6	0.0
9	152.440	76.178	15.249	315.9	0.0
10	152.384	76.184	15.221	319.3	0.0
11	152.385	76.189	15.234	322.7	0.0
12	152.415	76.130	15.155	315.2	0.0
13	152.397	76.206	15.158	321.9	0.0
14	152.413	76.145	15.238	316.2	0.0
15	152.410	76.127	15.201	324.2	0.0
16	152.387	76.163	15.204	316.5	0.0
17	152.350	76.112	15.238	325.9	0.0
18	152.375	76.158	15.195	317.4	0.0
19	152.393	76.123	15.237	315.9	0.0
20	152.430	76.164	15.232	323.0	0.0
21	152.365	76.114	15.241	323.9	0.0
22	152.428	76.169	15.207	323.4	0.0
23	152.386	76.194	15.217	323.9	0.0
24	152.410	76.198	15.214	315.9	0.0
25	152.420	76.169	15.215	319.3	0.0
26	152.428	76.187	15.160	322.7	0.0
27	152.393	76.210	15.207	315.2	0.0
28	152.381	76.186	15.189	321.9	0.0
29	152.387	76.131	15.184	316.2	0.0
30	152.428	76.182	15.182	324.2	0.0
31	152.446	76.159	15.158	316.5	0.0
32	152.422	76.138	15.248	325.9	0.0
33	152.376	76.110	15.158	317.4	0.0
34	152.373	76.130	15.209	315.9	0.0
35	152.370	76.202	15.218	323.0	0.0

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3.FAI & CPK TEST

Quality comprehensive confirmation DATA SHEET

Control run, Try run, Mass n

Approve	Review	Prepare

Model : CM036-20002N(INC-4PASS)

NO	Project(mm)	Control run							Try run							Reference		
		Spec	Average	Standard deviation σ	Max	Min	NO.	Project ability cp cpk	Spec	Average	Standard deviation σ	Max	Min	NO.	Project ability cp cpk			
1	Size#4	152.20-152.60mm	152.400	0.026	152.446	152.350	35	2.603	2.598	152.20-152.60mm	152.408	0.027	152.449	152.361	35	2.464	2.371	
2	Size#7	76.01-76.31mm	76.162	0.030	76.210	76.110	35	1.686	1.660	76.01-76.31mm	76.154	0.028	76.203	76.112	35	1.815	1.743	
3	Size#11	15.00-15.40mm	15.207	0.030	15.250	15.155	35	2.243	2.168	15.00-15.40mm	15.201	0.028	15.237	15.150	35	2.384	2.367	
4	Differential pressure	≤500Kpa	320.668	4.776	329.923	309.595	35	17.447	12.515	≤500Kpa	320.668	4.776	329.923	309.595	35	17.447	12.515	
5	air-tight test	≤0.020Mpa	0.000	0.000	0.000	0.000	35	#DIV/0!	#DIV/0!	≤0.020Mpa	0.000	0.000	0.000	0.000	35	#DIV/0!	#DIV/0!	

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4.Package

6 5 4 3 2 1

H H

G G

F F

E E

D D

C C

Desiccant*4PCS
P/N:A611000580F
Spec:15g/PCS

EPE Board*1PCS
Code:CM-LM310
Spec:450*275*15mm HF
P/N:A603004210F

(model)

EPE Inner Box*4PCS
Code:CM-4PASS
Spec:455*275*44mm HF
P/N:A602015970F

Waterproof bag*1PCS
P/N:A608000600F
Spec:600*500*220mm HF

Carton(5-layer Corrugated fiberboard AB/Flute)
Code:4729-2
Spec:470*290*218mm HF
P/N:A601004180F
TEXTURE:
(outer liner) Grade A-200G/
(fluting)100g/(fluting)100g/(fluting)150g
(outer liner) Grade A-200g;
Bursting Strength \geq 12 kgf/cm²;BCT \geq 300 kg
Refer to F401003180F for printing specifications of the carton

FCL Finished Product

Procedure:
Step:①Place the waterproof bag inside the carton,
and put desiccants at each corner of the carton.
②Put finished products inside the EPE Inner box,
2 units per tray, 4 trays stacked in total.
Place a EPE board on the top,with BOPP tapes for wrapping.
③Place desiccants at each top corner of the EPE board
and organize the bag opening.
Finish the packing by sealing the carton with BOPP packing tapes.

Parts and raw materials used in this product shall not contain any prohibited and hazardous substance pertained to <List of Environmental Hazardous Substance Inspection Techniques and Standards> of Sunonwealth Electric Machine Industry Co., Ltd.

注意事項 NOTICE

Applicable Client:
For Customization
Applicable Model:
CM036-20002N
★: With this mark,
inspect the dimension.

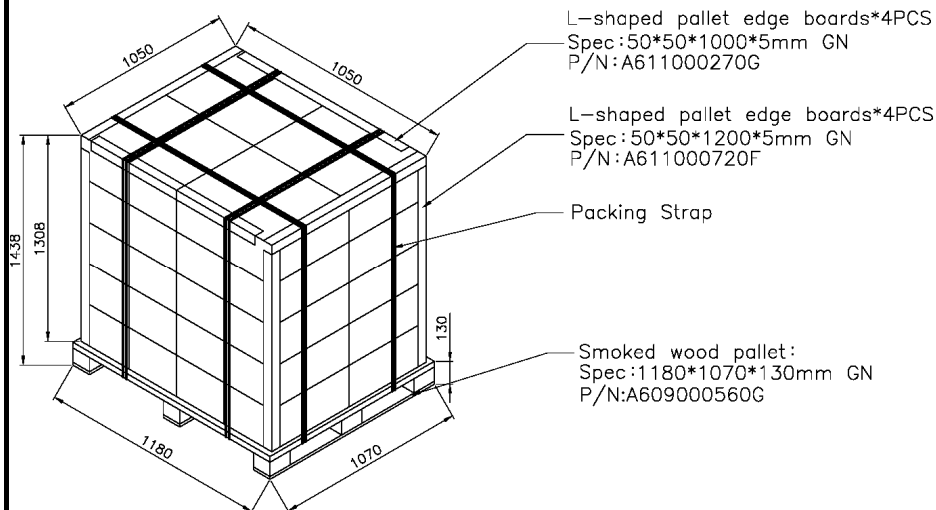
SPEC. of MC	P/N of MC	QTY	Cuft	Code	Carton: Corrugate Fiberboard/ EPE Inner Box
470*290*218	A601004180F	8	1.05	4729-2	材 質 MATERIAL

適用範圍
SCOPE

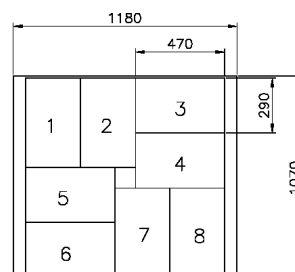
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4.Package



Carton Layout



NOTICE:

1. 8 cartons per layer, 6 layers in total (48 Carton/Pallet).
2. Tightly wrap around the pallet with wrapping films.

NO.	Model	SPEC. of carton	Carton/Pallet	pcs/Carton	pcs/Pallet	N.W	G.W
1.	CM036-20002N	470*290*218	48	8	384	354	417

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Notes

I. SPECIFICATION MODIFICATION

1. SUNON offers engineering assistance on module installation and cooling system design.
2. All changes, modifications and/or revisions to the specifications, if any, are incorporated in the attached specifications.
3. No changes, modifications and/or revisions to these specifications are effective absent agreement, by both SUNON and the customer, in writing.
4. This module will be shipped in accordance with the attached specification unless SUNON and the customer have agreed otherwise, in writing, as specified in Paragraph 3, above.

II. OTHER

1. DO NOT operate this module in proximity to hazardous materials such as organic silicon, cyanogens, formalin, phenol, or corrosive gas environments including, but not limited to, H₂S, SO₂, NO₂, or Cl₂.
2. Unless otherwise noted, all testing of this module is conducted at 25°C ambient temperature and sixty-five percent (65%) relative humidity.
3. DO NOT store this module in an environment with high humidity. This module must be stored in accordance with the attached specifications regarding storage temperature. If this module is stored for more than 6 months, SUNON recommends functional testing before using.
4. SUNON reserves the right to use components from multiple sources at its discretion. The use of components from other sources will not affect the specifications as described herein.

III. WARRANTY

This module is warranted against all defects which are proved to be fault in our workmanship and material for one year from the date of our delivery. The sole responsibility under the warranty shall be limited to the repair of the module or the replacement thereof, at SUNON's sole discretion. SUNON will not be responsible for the failures of its module due to improper handling, misuse or the failure to follow specifications or instructions for use. In the event of warranty claim, the customer shall immediately notify SUNON for verification. SUNON will not be responsible for any consequential damage to the customer's equipment as a result of any module proven to be defective.

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Declaration of RoHS

Control declaration of environment- related substances/ materials

1. In accordance with the Restriction of Hazardous Substances (RoHS) Directive 2011/65/EU, Sunon product have complied with law and discipline not to employ the forbidden substances, and restrict the allowable concentration of some limited substances deliberately in our components.

No	Substance	Criteria
1	CFCs & HCFCs (ozone depleting substances)	Forbidden
2	Chlorinated Organic Solvent	Forbidden
3	Plastic (Frame, Impeller, wire harness, etc.)	<100ppm
	Solder	<1000ppm
	Steel alloy	<3500ppm
	Aluminium alloy	<4000ppm
	Copper alloy	<4wt%
4	Solder	<20ppm
	Parts composed of metals containing zinc (e.g. brass, zinc for die casting)	<100ppm
	Plastic	<5ppm
5	PBBs and PBDEs	Forbidden
6	PCB and PCT	Forbidden
7	CP, Short-chain Chlorinated paraffins C10-13, Cl \geq 48 wt%	Forbidden
8	Mirex	Forbidden
9	PCN	Forbidden
10	Hexavalent Chromium compounds	<100ppm
11	Mercury and its compounds	Forbidden
12	Asbestos	Forbidden
13	Organic Tin compounds	Forbidden
14	Azo compounds	Forbidden
15	TBBP-A in external case plastic parts of products (PCB is exempted)	<1000ppm
16	Nickel in external case parts, which are likely to result in prolonged skin exposure	<1000ppm
17	Hexabromocyclododecane (HBCDD)	<1000ppm
18	Di-butyl Phthalate (DBP)	<1000ppm
19	Benzyl butyl Phthalate (BBP)	<1000ppm
20	Di-ethylhexyl Phthalate (DEHP)	<1000ppm
21	Di-isobutyl Phthalate (DIBP)	<1000ppm

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SPEC. NO.	C01003960G-00
ISSUED DATE	12. 20. 2021
EDITION	0
REVISION DATE	