

Prüfbericht-Nr.: <i>Test Report No.:</i>	16086437 001	Auftrags-Nr.: <i>Order No.:</i>	174069093	Seite 1 von 11 Page 1 of 11	
Kunden-Referenz-Nr.: <i>Client Reference No.:</i>	N/A	Auftragsdatum: <i>Order date:</i>	2017-09-19		
Auftraggeber: <i>Client:</i>	Malans Lighting Electric Factory No. 13, Jiwei RD, Luosha, Haizhou, Guzhen Town, Zhongshan, Guangdong 528422, P. R. China				
Prüfgegenstand: <i>Test item:</i>	LED Ceiling Lamp				
Bezeichnung / Typ-Nr.: <i>Identification / Type No.:</i>	LED-AC-12W				
Auftrags-Inhalt: <i>Order content:</i>	Type examination				
Prüfgrundlage: <i>Test specification:</i>	Annex III of ecodesign requirements of the EU regulation 1194/2012, plus the client's special requirements.				
Wareneingangsdatum: <i>Date of receipt:</i>	2017-09-19	<p style="text-align: center;">Detaillierte Fotodokumentation siehe Anlage zu diesem Bericht</p> <p style="text-align: center;">Detailed photo documentation see appendix to this report</p>			
Prüfmuster-Nr.: <i>Test sample No.:</i>	A000601919 00-001, 002				
Prüfzeitraum: <i>Testing period:</i>	2017-09-19 to 2017-10-23				
Ort der Prüfung: <i>Place of testing:</i>	TÜV Rheinland (Guangdong) Ltd.				
Prüflaboratorium: <i>Testing laboratory:</i>	TÜV Rheinland (Guangdong) Ltd.				
Prüfergebnis*: <i>Test result*:</i>	See following pages				
geprüft von / tested by:		kontrolliert von / reviewed by:			
2018-02-08 Jack Li / Project Engineer		2018-02-08 Ivy Lu / Reviewer			
Datum <i>Date</i>	Name / Stellung <i>Name / Position</i>	Unterschrift <i>Signature</i>	Datum <i>Date</i>	Name / Stellung <i>Name / Position</i>	Unterschrift <i>Signature</i>
Sonstiges / Other: -This report is bases on test report 16085271 001, the modules of LED Ceiling Lamp has been evaluated in report 16085271 001 (Test report issued with test data after 1000h aging test) according to EU regulation 1194/2012 and special requirement, this report is only issued for addition requirements from client.					
Zustand des Prüfgegenstandes bei Anlieferung: <i>Condition of the test item at delivery:</i>			Prüfmuster vollständig und unbeschädigt <i>Test item complete and undamaged</i>		
<p>* Legende: 1 = sehr gut 2 = gut 3 = befriedigend 4 = ausreichend 5 = mangelhaft P(ass) = entspricht o.g. Prüfgrundlage(n) F(ail) = entspricht nicht o.g. Prüfgrundlage(n) N/A = nicht anwendbar N/T = nicht getestet</p> <p>Legend: 1 = very good 2 = good 3 = satisfactory 4 = sufficient 5 = poor P(ass) = passed a.m. test specification(s) F(ail) = failed a.m. test specification(s) N/A = not applicable N/T = not tested</p>					
<p>Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens. <i>This test report only relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark.</i></p>					

Summary of testing:

1. The product name are LED Ceiling Lamp for model LED-AC-12W, can be used LED-AC-12W #1 LED module or LED-AC-12W #2 LED module.
2. LED Ceiling Lamp were tested according to EU regulation 1194/2012 and special requirement of client.
3. According to the test data, LED module test report 16085271 001 can be used in the luminaire which listed in this test report.
4. All 'verdicts' in this test report based on test voltage as 230V, 50Hz, other test voltages were not considered according to client's requirement.

Tests performed (name of test and test clause):

This test report is based on 16085271 001, for adding ts measurement, forward current of LED chip.
 Remark: ts measurement is tested on the condition with lamp shade shown on product photos only.

Testing location:

TÜV Rheinland (GuangDong) Ltd.
 No.199 Kezhu Road, GZ Science City, Guangzhou 510663, P.R.China

Copy of marking plate:

Not provided by client

Test item particulars:

Description.....: LED Ceiling Lamp
 Trademark: N/A

Possible test case verdicts:

- test case does not apply to the test object.....: N/A
- test object does meet the requirement.....: P (Pass)
- test object does not meet the requirement.....: F (Fail)

Testing

Date of receipt of test item.....: 2017-09-19
 Date (s) of performance of tests: 2017-09-19 to 2017-10-23

General product information:

1. **Rated Voltage:** 230V,50Hz

Model details please see table below:

Model No.	Controlgear	Dimmer	LED module	LED quant. (pcs)	CCT (K)
LED-AC-12W	None	None	LED-AC-12W #1 LED module or LED-AC-12W #2 LED module	28	4000

Remark: --

2. LED specification:

LED specification for LED module model LED-AC-12W #1 LED module and LED-AC-12W #2 LED module

Manufacturer	Model	If (mA)	Vf (V)	CCT(K)
XUYU OPTOELECTRONICS(SHENZHEN) CO.,LTD.	XY-2835W2SP-1C2B	60	9	4000

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1. Test result:

1.1 In-situ case temperature measurements test location

The location of the T_s measurement point for LED chip is shown below(According to the declaration of XUYU OPTOELECTRONICS(SHENZHEN) CO.,LTD.)

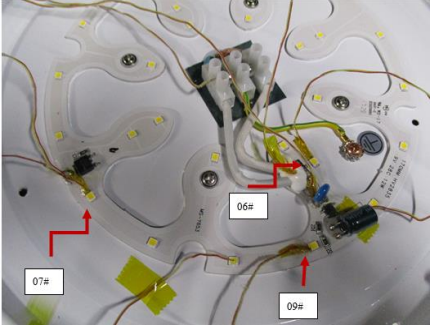
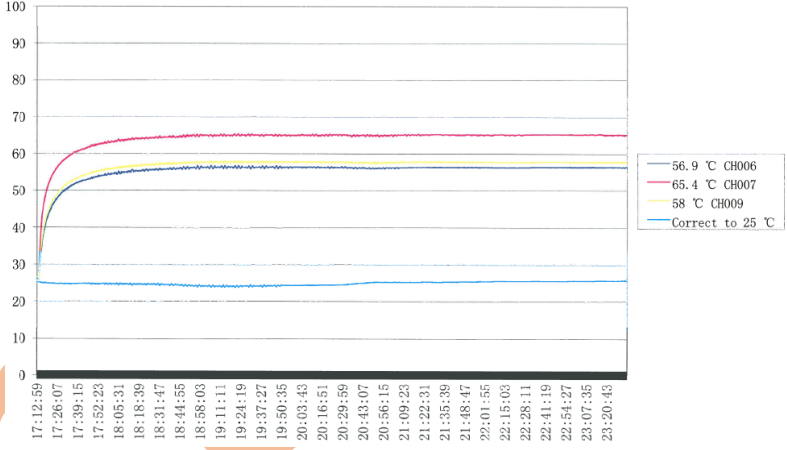
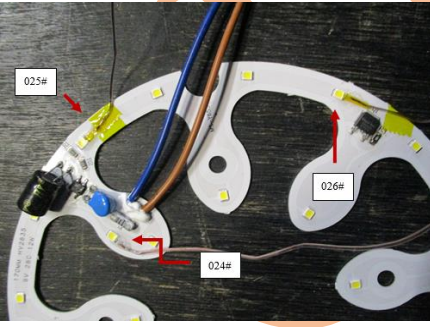
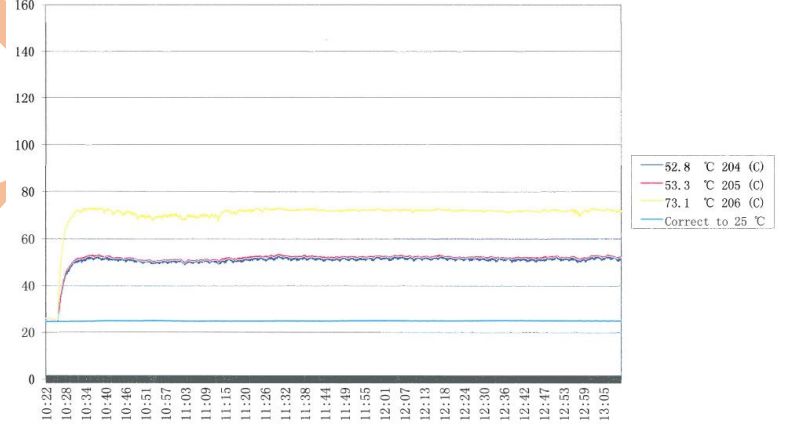
LED chip for LED-AC-12W #1 LED module and LED-AC-12W #2 LED module



Ts measurement point

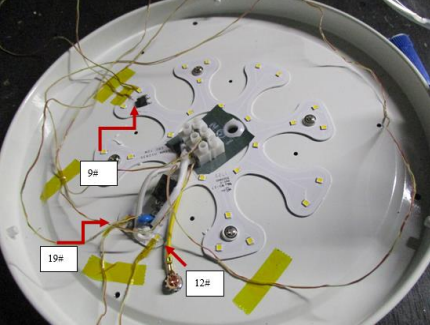
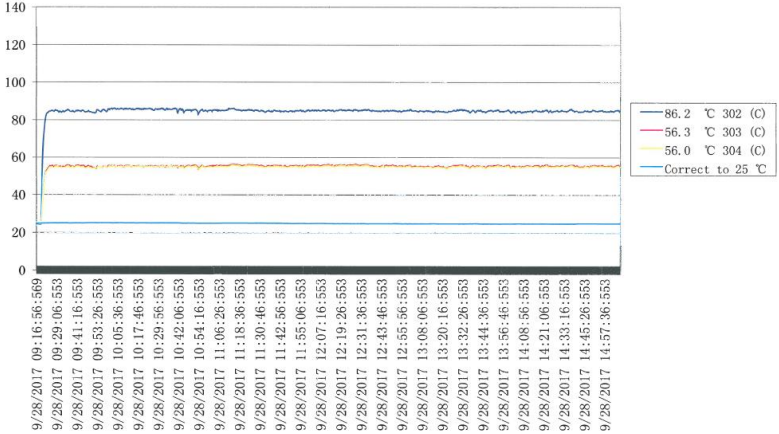
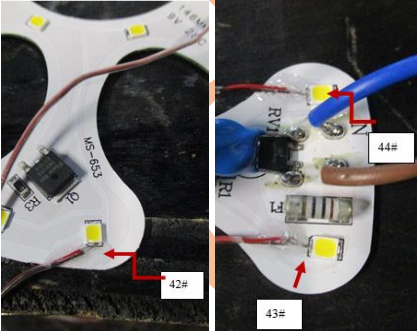
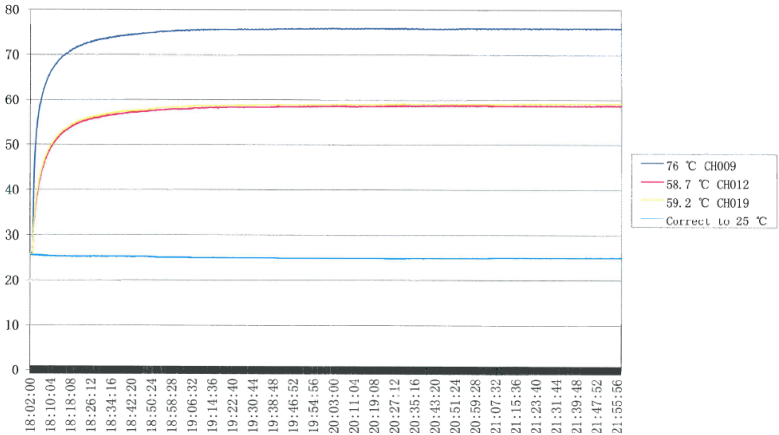
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1.2 Ts measurement

Tc measurement in LED Ceiling Lamp and LED module (LED-AC-12W #1 LED module)				
Model No. LED-AC-12W	Test voltage	Input Current(A)	Input wattag(W)	Test time
	230Vac,50Hz	0.103	13.1	5hour08mins
Tc measured in luminaire The highest in-situ temperature (3 test points)	Temperature Temperature(°C)			
	1#	56.9		
	2#	58.0		
	3#	65.4		
	Ambient	25.0		
Tc measured in LED module The highest in-situ temperature (3 test points)	Temperature Temperature(°C)			
	1#	52.8		
	2#	53.3		
	3#	73.1		
	Ambient	25.0		
Tc Temperature Testing Curve(LED-AC-12W #1 LED module in luminaire)				
 <p>Tc temperature measure point in the luminaire</p>				
Tc Temperature Testing Curve(Only LED-AC-12W #1 LED module)				
 <p>Tc temperature measure point on LED module</p>				

Remark: The aging test was carried out on ambient 30°C.

1.2 Ts measurement(Cont'd)

Tc measurement in LED Ceiling Lamp and LED module (LED-AC-12W #2 LED module)				
Model No. LED-AC-12W	Test voltage	Input Current(A)	Input wattag(W)	Test time
	230Vac,50Hz	0.100	12.6	5hour30mins
Tc measured in luminaire The highest in-situ temperature (3 test points)	Temperature Temperature(°C)			
	1#	76.0		
	2#	59.2		
	3#	58.7		
	Ambient	25.0		
Tc measured in LED module The highest in-situ temperature (3 test points)	Temperature Temperature(°C)			
	1#	86.2		
	2#	56.3		
	3#	56.0		
	Ambient	25.0		
Tc Temperature Testing Curve(LED-AC-12W #2 LED module in luminaire)				
				
<p>Tc temperature measure point in the luminaire</p>				
Tc Temperature Testing Curve(Only LED-AC-12W #2 LED module)				
				
<p>Tc temperature measure point on LED module</p>				

Remark: The aging test was carried out on ambient 30°C.

1.3 Input current of LED measurement

I _F measurement in Model			
Model No.	Test voltage	Input Current(A)	Input wattage(W)
LED-AC-12W (with LED-AC-12W #1 LED module)	230Vac,50Hz	0.103	13.1
I _F measured in luminaire	44.4mA		
I _F measured in LED module	48.5mA		

I _F measurement in Model			
Model No.	Test voltage	Input Current(A)	Input wattage(W)
LED-AC-12W (with LED-AC-12W #2 LED module)	230Vac,50Hz	0.100	12.6
I _F measured in luminaire	45.3mA		
I _F measured in LED module	43.4mA		

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2 General LED module measurement information on test report 16085271 001:

2.1 Starting & Warm-up Time before pre-conditioning and Initial Lumen Measurement

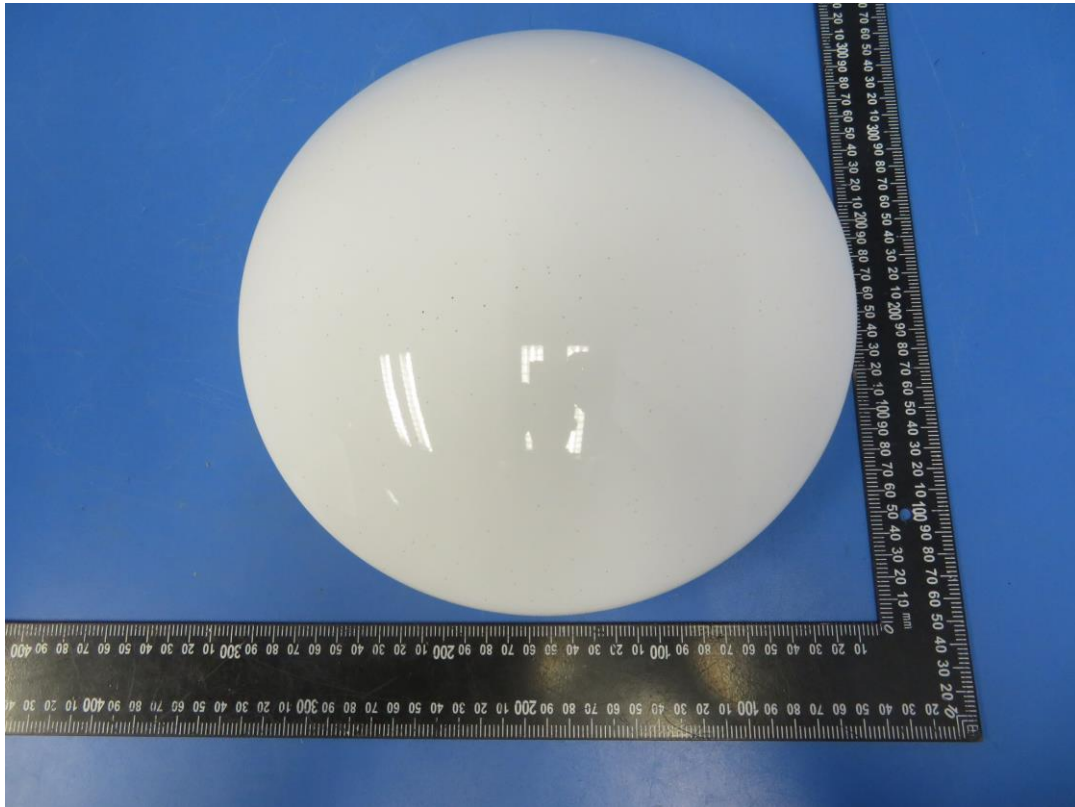
LED module model	LED-AC-12W #1 LED module	LED-AC-12W #2 LED module
LED module test report No.	16085271 001	16085271 001
Warm-up time (s)	0.004	0.004
Starting time (s)	0.056	0.066
Input Power(W)	13.10	12.61
Power Factor	0.537	0.532
Current(mA)	100	100
Total Lumen (lm)	1354.8	1291.4
Claimed equivalent incandescent lamp power (W)	N/A	N/A
Colour rendering	81.8	81.9
CCT (K)	4088	4105
Beam angle	117.8	117.6
Number of switching cycles before premature lamp failure	15000	15000
Lumen maintenance factor at the end of nominal	TBD	TBD

TBD: To Be Determined.

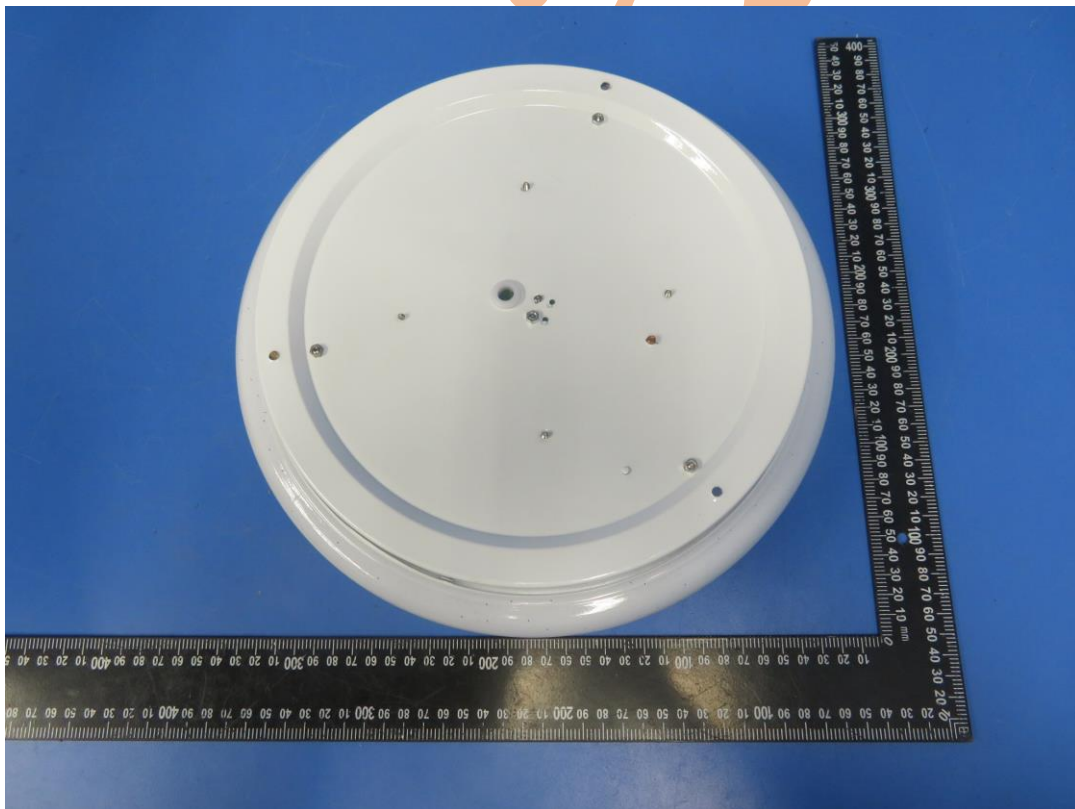
2.2 Rating for LED modules

LED module model	Rated wattage	Rated Lumen	Rated CRI	Rated CCT	EEI	Energy Efficacy
LED-AC-12W #1 LED module	12W	1350lm	81.8	4000K	0.132	A+
LED-AC-12W #2 LED module	12W	1300lm	81.9	4000K	0.133	A+

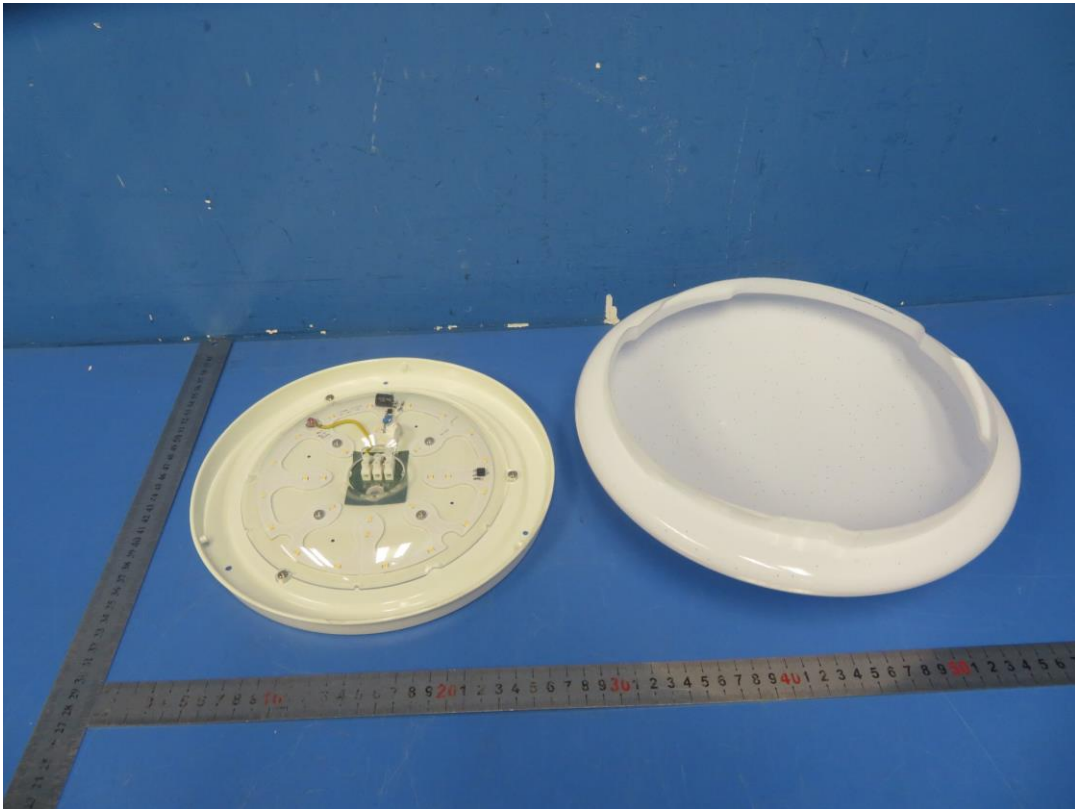
3 Product photo documentation:



Picture 1 Model: LED-AC-12W



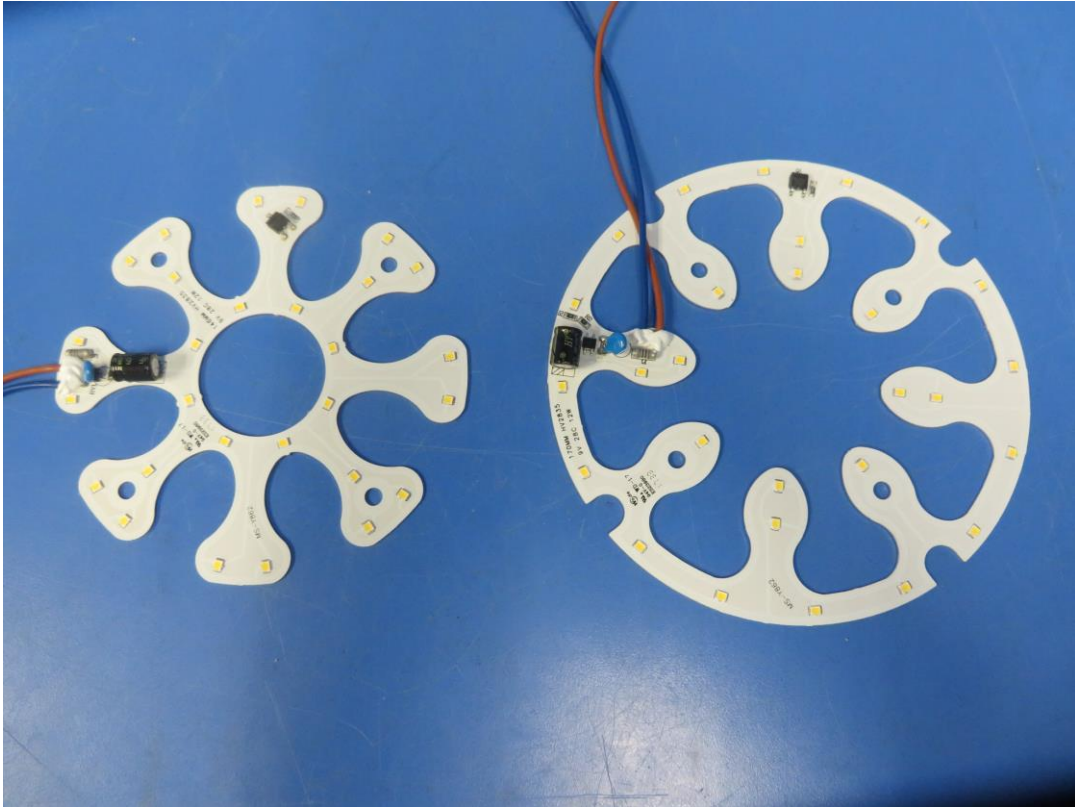
Picture 2



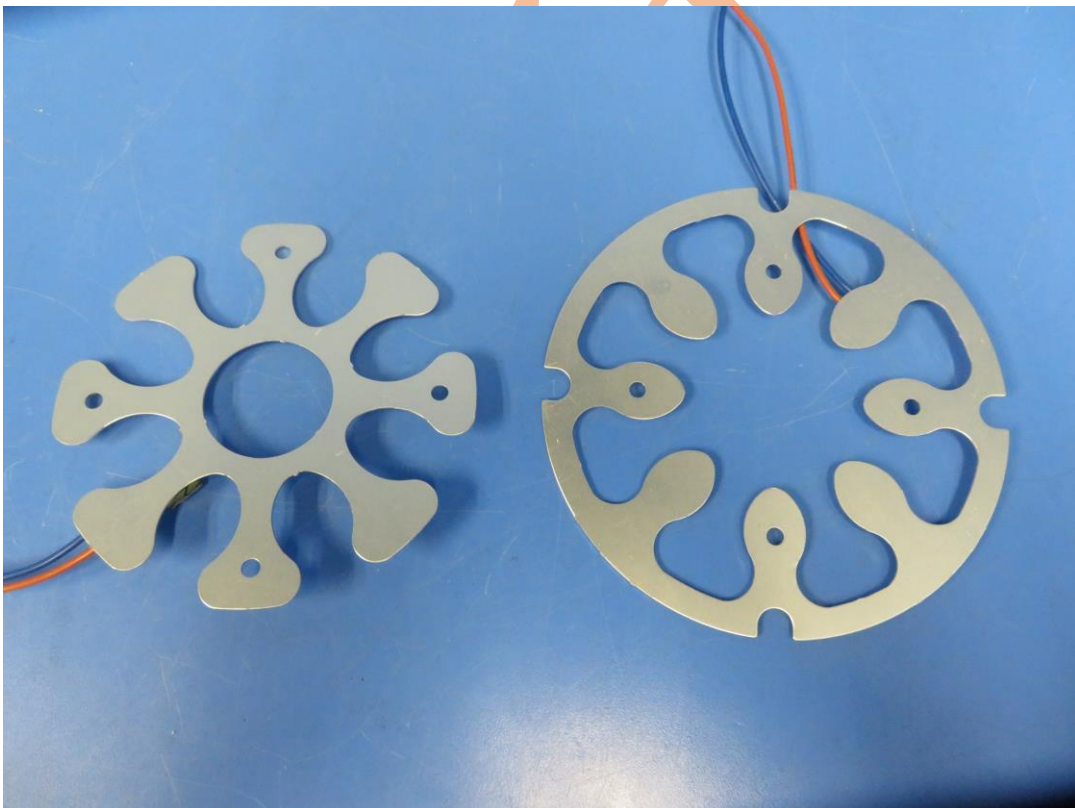
Picture 3 with LED-AC-12W #2 LED module



Picture 4 with LED-AC-12W #1 LED module



Picture 5



Picture 6

-- End of report --