
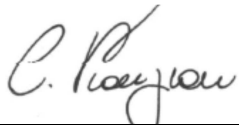
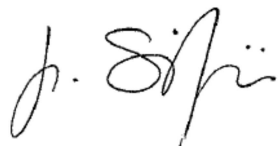


TEST REPORT Performance test Power measurement	
Report Number.....	R1732017_3_01
Date of issue.....	2017-06-19
Total number of pages	21
Name of Testing Laboratory preparing the Report	Analytical S.r.l. (CETACE) Via dei Cadolingi 6 50018 Scandicci (FI), Italy
Applicant's name	CREE Europe S.r.l. a S.U.
Address.....	Via Sandro Pertini, 122 50019 Sesto Fiorentino (FI), Italy
Test specification: Standard : N/A Test procedure : Performance test Non-standard test method : Power measurement – CREE Europe internal procedure	
Test Report Form No.	Power_meas_a
Test Report Form(s) Originator	Analytical S.r.l. (CETACE)
Master TRF	2017/06
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General disclaimer: The test results presented in this report relate only to the object tested. This report shall not be reproduced, except in full, without the written approval of the Issuing Testing Laboratory. The authenticity of this Test Report and its contents can be verified by contacting the Analytical S.r.l. (CETACE) laboratory, responsible for this Test Report.	

Test item description :	Built-in self ballasted LED module	
Trade Mark :		
Manufacturer	CREE Europe S.r.l. a S.U.	
Model/Type reference	RKTD4MEF40K+24WHWMA00 (EUT 1732017_001, EUT 1732017_002, EUT 1732017_003, EUT 1732017_004, EUT 1732017_005)	
Ratings	220-240 Vac, 50/60 Hz, MAX 45 W	
Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):		
<input checked="" type="checkbox"/>	Testing Laboratory:	
Testing location/ address :		Analytical S.r.l. (CETACE) Via dei Cadolingi 6, 50018 Scandicci (FI), Italy
Tested by (name, function, signature) :		Cosimo Pianigiani (ENG) 
Approved by (name, function, signature) ... :		Lorenzo Signorini (REW) 

List of Attachments (including a total number of pages in each attachment):

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Summary of testing:

Tests performed :

RKTD4MEF40K+24WHWMA00
(EUT 1732017_001, EUT 1732017_002,
EUT 1732017_003, EUT 1732017_004,
EUT 1732017_005)

Requirement test	Results
Performance Test Dimmer setting = 9	Table 1

RKTD4MEF40K+24WHWMA00
(EUT 1732017_001, EUT 1732017_002,
EUT 1732017_003, EUT 1732017_004,
EUT 1732017_005)

Requirement test	Results
Performance Test Dimmer setting = A	Table 2

RKTD4MEF40K+24WHWMA00
(EUT 1732017_001, EUT 1732017_002,
EUT 1732017_003, EUT 1732017_004,
EUT 1732017_005)

Requirement test	Results
Performance Test Dimmer setting = C	Table 3

RKTD4MEF40K+24WHWMA00
(EUT 1732017_001, EUT 1732017_002,
EUT 1732017_003, EUT 1732017_004,
EUT 1732017_005)

Requirement test	Results
Performance Test Dimmer setting = E	Table 4

Testing location:

Analytical S.r.l. (CETACE)
Via dei Cadolingi 6,
50018 Scandicci (FI), Italy

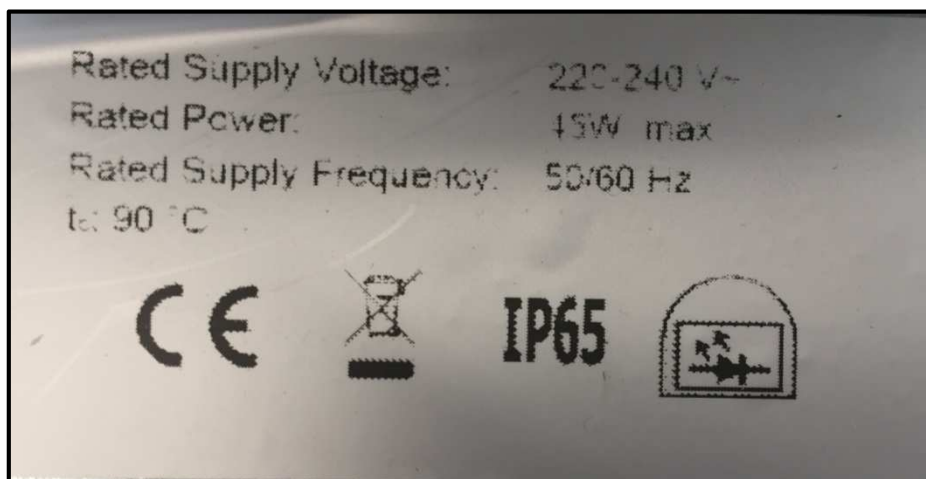
RKTD4MEF40K+24WHWMA00
(EUT 1732017_001, EUT 1732017_002,
EUT 1732017_003, EUT 1732017_004,
EUT 1732017_005)

Requirement test	Results
Performance Test Dimmer setting = F	Table 5

Copy of marking plate:

The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks.

Example of marking plate placed on built-in self-balasted LED module:



Test item particulars.....:	Built-in self-ballasted LED module
Classification of installation and use.....:	Built-in self-ballasted LED module
Supply Connection	Screwless terminals
.....:	
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	2017-05-29
Date (s) of performance of tests	2017-06-05 – 2017-06-13
General remarks:	
<p>"(See Enclosure #)" refers to additional information appended to the report. "(See appended table)" refers to a table appended to the report.</p> <p>Throughout this report a <input checked="" type="checkbox"/> comma / <input type="checkbox"/> point is used as the decimal separator.</p> <p>Clause numbers between brackets refer to clauses in EN 60068-2-11</p>	
Manufacturer's Declaration per sub-clause 4.2.5 of IECCE 02:	
The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided :	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> Not applicable
When differences exist; they shall be identified in the General product information section.	
Name and address of factory (ies)	CREE Europe S.r.l. a S.U. Via Sandro Pertini, 122 50019 Sesto Fiorentino (FI) Italy

General product information:

The purpose of the testing procedure is to provide an accurate indication of the load at the distribution network terminals of a particular equipment under normal conditions.

Circuit Watts (W), Volt Ampere (VA), and Power Factor have been measured at five different voltage levels from 210 Vac, increasing in 10 Vac increments, up to 250 Vac (at 50 Hz).

For each voltage level, the LED controlgear installed in each Built-in self-ballasted LED module has been set using a dimmer rotary switch as the following:

Dimmer Position	Rated output Power [W]
9	19 (minimum rated power)
A	27
C	34
E	43
F	45 (maximum rated power)

To perform those measures, a stabilized power source has been used.

All measures have been recorded at ambient temperature of 25 °C.

Table 1		Power measures - Dimmer setting = 9				
Voltage [Vac]	Recordings	EUT 1732017_001	EUT 1732017_002	EUT 1732017_003	EUT 1732017_004	EUT 1732017_005
210	Watt [W]	18,75	17,74	18,62	19,18	18,15
	VA [VA]	21,03	20,19	21,01	21,42	20,59
	Power factor	0,892	0,879	0,886	0,895	0,881
220	Watt [W]	18,78	17,78	18,63	19,29	18,25
	VA [VA]	21,58	20,71	21,57	22,0	21,13
	Power factor	0,870	0,859	0,864	0,877	0,864
230	Watt [W]	18,81	17,86	18,68	19,34	18,39
	VA [VA]	22,11	21,20	22,09	22,52	21,62
	Power factor	0,851	0,842	0,846	0,859	0,851
240	Watt [W]	18,89	17,88	18,76	19,41	18,41
	VA [VA]	22,60	21,88	22,58	23,05	22,34
	Power factor	0,836	0,817	0,831	0,842	0,824
250	Watt [W]	18,95	17,97	18,80	19,46	18,48
	VA [VA]	23,29	22,55	23,27	23,76	23,02
	Power factor	0,814	0,797	0,808	0,819	0,803

Table 2		Power measures - Dimmer setting = A				
Voltage [Vac]	Recordings	EUT 1732017_001	EUT 1732017_002	EUT 1732017_003	EUT 1732017_004	EUT 1732017_005
210	Watt [W]	26,11	25,07	26,04	26,74	25,50
	VA [VA]	27,75	26,92	27,72	28,35	27,32
	Power factor	0,941	0,931	0,939	0,943	0,933
220	Watt [W]	26,13	25,11	26,07	26,74	25,51
	VA [VA]	28,19	27,11	28,18	28,82	27,74
	Power factor	0,927	0,926	0,925	0,928	0,920
230	Watt [W]	26,16	25,13	26,09	26,72	25,53
	VA [VA]	28,53	27,62	28,51	29,21	28,07
	Power factor	0,917	0,910	0,915	0,915	0,910
240	Watt [W]	26,19	25,21	26,13	26,78	25,57
	VA [VA]	29,05	28,11	29,03	29,52	28,59
	Power factor	0,902	0,897	0,900	0,907	0,894
250	Watt [W]	26,23	25,29	26,18	26,84	25,65
	VA [VA]	29,52	28,78	29,50	30,01	29,04
	Power factor	0,889	0,879	0,887	0,894	0,883

Table 3		Power measures - Dimmer setting = C				
Voltage [Vac]	Recordings	EUT 1732017_001	EUT 1732017_002	EUT 1732017_003	EUT 1732017_004	EUT 1732017_005
210	Watt [W]	32,82	31,74	32,79	33,44	32,04
	VA [VA]	34,26	33,23	34,22	34,87	33,41
	Power factor	0,958	0,955	0,958	0,959	0,959
220	Watt [W]	32,82	31,73	32,80	33,40	32,05
	VA [VA]	34,56	33,48	34,55	34,99	33,68
	Power factor	0,950	0,948	0,949	0,955	0,952
230	Watt [W]	32,82	31,76	32,82	33,43	32,11
	VA [VA]	34,76	33,86	34,97	35,46	34,06
	Power factor	0,944	0,938	0,939	0,943	0,943
240	Watt [W]	32,87	31,82	32,84	33,46	32,16
	VA [VA]	35,30	34,13	35,29	35,77	34,59
	Power factor	0,931	0,932	0,931	0,935	0,930
250	Watt [W]	32,90	31,85	32,87	33,54	32,17
	VA [VA]	35,53	34,55	35,77	36,27	35,03
	Power factor	0,926	0,922	0,919	0,925	0,918

Table 4		Power measures - Dimmer setting = E				
Voltage [Vac]	Recordings	EUT 1732017_001	EUT 1732017_002	EUT 1732017_003	EUT 1732017_004	EUT 1732017_005
210	Watt [W]	41,02	40,08	40,79	41,81	40,25
	VA [VA]	42,26	41,42	42,00	43,02	41,59
	Power factor	0,971	0,968	0,971	0,972	0,968
220	Watt [W]	41,02	39,96	40,80	41,82	40,33
	VA [VA]	42,48	41,42	42,25	43,32	41,81
	Power factor	0,966	0,965	0,966	0,965	0,965
230	Watt [W]	41,14	40,21	40,91	41,84	40,31
	VA [VA]	42,84	41,71	42,58	43,45	42,08
	Power factor	0,960	0,964	0,961	0,963	0,958
240	Watt [W]	41,16	40,15	41,02	41,97	40,33
	VA [VA]	42,99	42,30	42,97	43,92	42,49
	Power factor	0,957	0,949	0,955	0,956	0,949
250	Watt [W]	41,15	40,06	40,98	41,91	40,31
	VA [VA]	43,53	42,29	43,25	44,23	42,76
	Power factor	0,945	0,947	0,948	0,948	0,943

Table 5		Power measures - Dimmer setting = F				
Voltage [Vac]	Recordings	EUT 1732017_001	EUT 1732017_002	EUT 1732017_003	EUT 1732017_004	EUT 1732017_005
210	Watt [W]	43,47	42,49	43,39	44,00	42,53
	VA [VA]	44,79	43,95	44,73	45,33	43,89
	Power factor	0,971	0,967	0,970	0,971	0,969
220	Watt [W]	43,50	42,58	43,43	43,97	42,51
	VA [VA]	44,91	43,83	44,88	45,50	43,78
	Power factor	0,969	0,971	0,968	0,966	0,971
230	Watt [W]	43,48	42,50	43,42	43,98	42,41
	VA [VA]	45,12	44,23	45,10	45,52	44,16
	Power factor	0,964	0,961	0,963	0,966	0,960
240	Watt [W]	43,60	42,40	43,48	43,92	42,60
	VA [VA]	45,40	44,21	45,36	45,82	44,42
	Power factor	0,960	0,959	0,959	0,959	0,959
250	Watt [W]	43,57	42,52	43,53	43,83	42,57
	VA [VA]	45,80	44,82	45,76	46,47	44,75
	Power factor	0,951	0,949	0,951	0,943	0,951

Annex 1	Critical Components
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ANNEX 1	TABLE: Critical components information				
Object / part No.	Code	Manufacturer/ trademark	Type / model	Technical data	
LED controlgear	-	Alvit S.r.l.	ALSM4570/1-10-IP	Built-in, SELV, with double or reinforced insulation, 220-240 Vac, 50/60 Hz, lin: 240 mA, Iout: 700 mA, Vout (operating): 25-68 Vdc, Vout max: 80 Vdc, Pout: 48 W, tc=80 °C	
LED	-	CREE	MD-A 1450	12,4 V, Tj = 150 °C	

Appendix 1		List of equipment used		
Clause	Measurement / testing	Testing / measuring equipment / material used	Range used	Expire Calibration date (yyyy/mm/gg)
-	Performance Test	23 – Draught-proof enclosure, A.T.S. Galbusera, AOM	--	2018/02/04
		539 – Stabilized Power Supply, Agilent, 6813B	--	Not under calibration
		228 – Powermeter, AV Power, PA4400-4	--	2018/06/06

Appendix 2	Photographs
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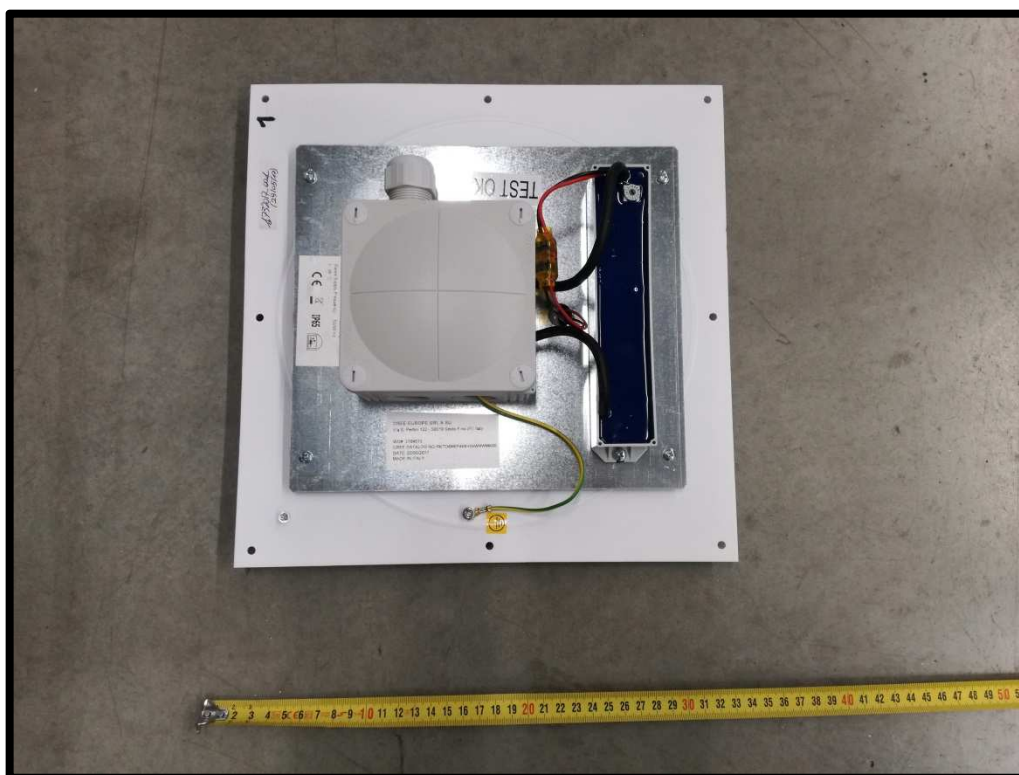


Fig. 1: Built-in Self-Ballasted LED module (EUT 1732017_001) – Top view



Fig. 2: Built-in Self-Ballasted LED module (EUT 1732017_001) – Bottom view

Appendix 2	Photographs
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Fig. 3: Built-in Self-Ballasted LED module (EUT 1732017_002) – Top view



Fig. 4: Built-in Self-Ballasted LED module (EUT 1732017_002) – Bottom view

LED Strip Light

LED Panel

TEST OK

Technical Specifications:

- Rated Power: 10W
- Rated Voltage: 12V
- Rated Current: 0.83A
- Rated Power Factor: 0.95
- Rated Life: 50,000 hours
- Rated Temperature: 40°C

CE

IP65

3

2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45

A top-down view of a square LED light fixture. The fixture has a white square faceplate with a large circular recessed area in the center. Inside this circle is a smaller square panel containing five circular LED chips arranged in a cross pattern (one in the center, four around it). A small black arrow points upwards between the bottom two LEDs. The fixture is mounted on a grey concrete surface. A yellow measuring tape is placed horizontally below the fixture, showing measurements in inches and centimeters.

TRF No. Power_meas_a

Appendix 2	Photographs
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Fig. 7: Built-in Self-Ballasted LED module (EUT 1732017_004) – Top view



Fig. 8: Built-in Self-Ballasted LED module (EUT 1732017_004) – Bottom view

Appendix 2	Photographs
-------------------	--------------------



Fig. 9: Built-in Self-Ballasted LED module (EUT 1732017_005) – Top view



Fig. 10: Built-in Self-Ballasted LED module (EUT 1732017_005) – Bottom view

Appendix 2 | **Photographs**



Fig. 11: LED controlgear used

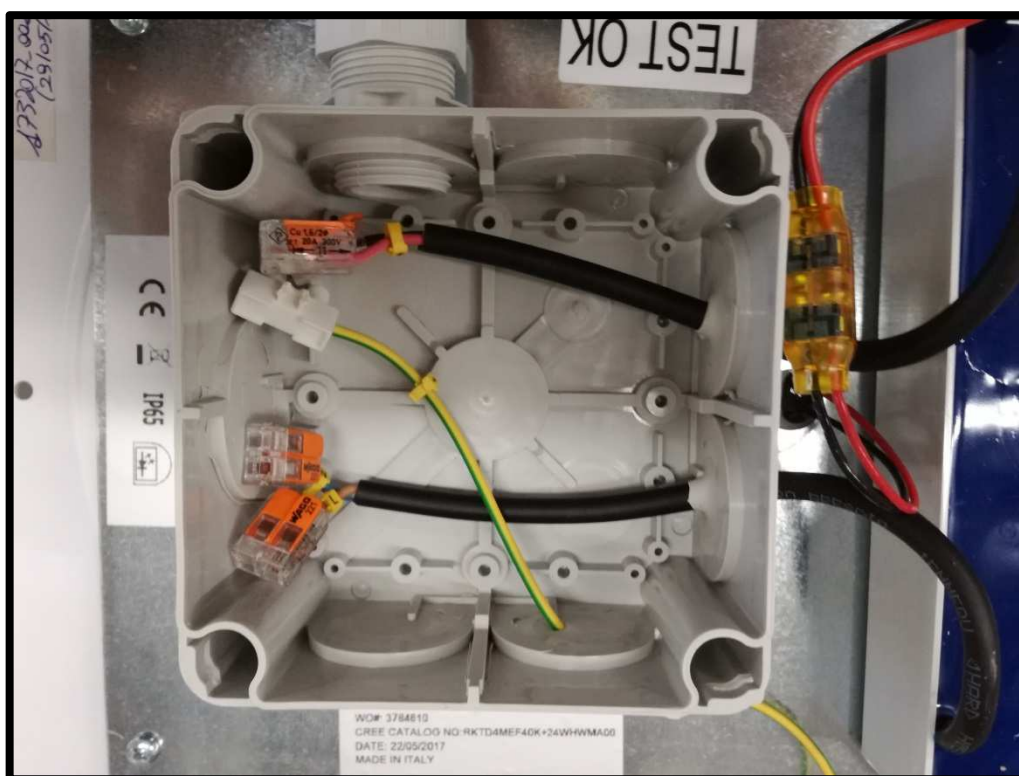


Fig. 12: Internal view

Appendix 2	Photographs
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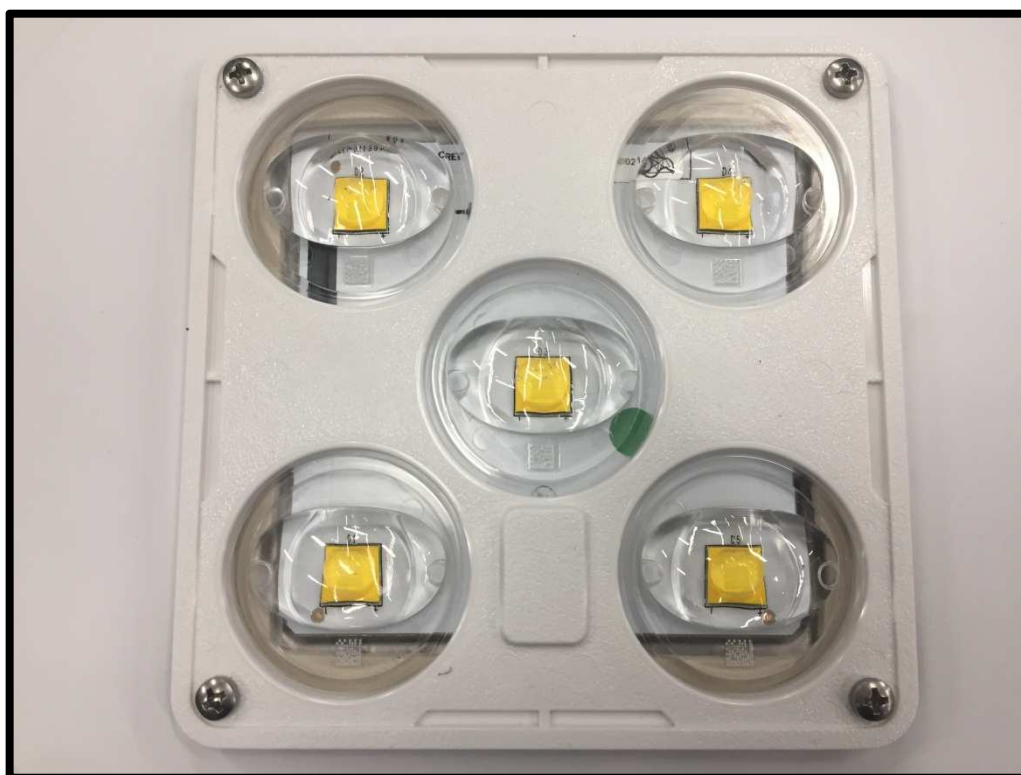


Fig. 13: LED module view