Test Report issued under the responsibility of:

Analytical S.r.l. (CETACE)

TEST REPORT
Performance test
Power measurement

Report Number. .....:	**R3422017_3_01**
Date of issue .....:	**2017-10-27**
Total number of pages	**22**
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

This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.

General disclaimer:

The test results presented in this report relate only to the object tested.
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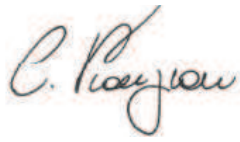
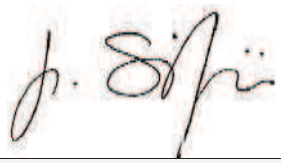
Test item description.....:	Built-in self-ballasted LED module
Trade Mark .....:	CREE
Manufacturer.....:	CREE Europe S.r.l. a S.U.
Model/Type reference.....:	RKT-A-275-B-40K-+-24-WH-DL-S-01-A00
Ratings .....:	220-240 Vac, 50 Hz, Max 63 W

Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):

☒	**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 :

Model RKT-A-275-B-40K-+-24-WH-DL-S-01-A00 (EUT 3422017_001, EUT 3422017_002, EUT 3422017_003, EUT 3422017_004, EUT 3422017_005)

Requirement test	Results
Performance Test Dimmer setting = 100%	Table 1

Model RKT-A-275-B-40K-+-24-WH-DL-S-01-A00 (EUT 3422017_001, EUT 3422017_002, EUT 3422017_003, EUT 3422017_004, EUT 3422017_005)

Requirement test	Results
Performance Test Dimmer setting = 70%	Table 2

Model RKT-A-275-B-40K-+-24-WH-DL-S-01-A00 (EUT 3422017_001, EUT 3422017_002, EUT 3422017_003, EUT 3422017_004, EUT 3422017_005)

Requirement test	Results
Performance Test Dimmer setting = 50%	Table 3

Model RKT-A-275-B-40K-+-24-WH-DL-S-01-A00 (EUT 3422017_001, EUT 3422017_002, EUT 3422017_003, EUT 3422017_004, EUT 3422017_005)

Requirement test	Results
Performance Test Dimmer setting = 30%	Table 4

Testing location:

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

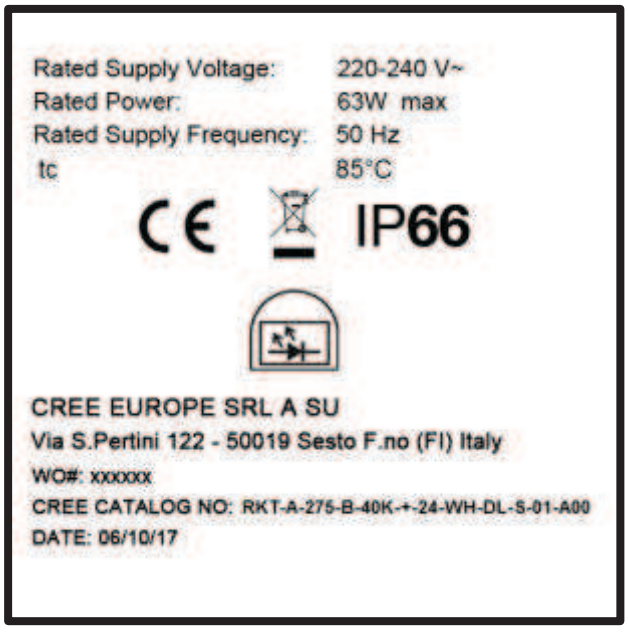
Model RKT-A-275-B-40K-+-24-WH-DL-S-01-A00 (EUT 3422017_001, EUT 3422017_002, EUT 3422017_003, EUT 3422017_004, EUT 3422017_005)

Requirement test	Results
Performance Test Dimmer setting = 10%	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.

Copy of marking plate for EUTs model RKT-A-275-B-40K-+-24-WH-DL-S-01-A00



Test item particulars ..... :	Built-in self-ballasted LED module
Classification of installation and use ..... :	Built-in self-ballasted LED module
Supply Connection..... :	Installation coupler
..... :	
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.....:	2017-10-19
Date (s) of performance of tests .....:	2017-10-19 – 2017-10-24

General remarks:

"(See Enclosure #)" refers to additional information appended to the report.
"(See appended table)" refers to a table appended to the report.

Throughout this report a ☒ comma / ☐ point is used as the decimal separator.

Clause numbers between brackets refer to clauses in EN 60068-2-11

Manufacturer's Declaration per sub-clause 4.2.5 of IECEE 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 ..... :	☐ **Yes** ☒ **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 LED luminaire has been set using the Tridonic DALI PS1 and the Master configurator software, with dimmer levels as follows:

- 100%
- 70%
- 50%
- 30%
- 10%

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

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

Table 1	Power measures - Dimmer setting = 100%

Voltage [Vac]	Recordings	EUT 3422017_001	EUT 3422017_002	EUT 3422017_003	EUT 3422017_004	EUT 3422017_005
210	Watt [W]	62,16	62,94	62,41	63,25	62,08
	VA [VA]	63,48	64,13	63,63	64,30	63,09
	Power factor	0,979	0,981	0,980	0,984	0,984
220	Watt [W]	62,11	62,91	62,38	63,22	62,01
	VA [VA]	63,41	64,30	63,59	64,42	63,36
	Power factor	0,979	0,978	0,980	0,981	0,979
230	Watt [W]	62,16	62,91	62,37	63,24	62,06
	VA [VA]	63,77	64,49	63,94	64,64	63,51
	Power factor	0,975	0,975	0,975	0,978	0,977
240	Watt [W]	62,15	62,90	62,38	63,20	62,04
	VA [VA]	63,90	64,66	64,09	64,80	63,67
	Power factor	0,972	0,973	0,973	0,975	0,974
250	Watt [W]	62,17	62,99	62,43	63,21	62,05
	VA [VA]	64,26	64,80	64,21	65,01	63,79
	Power factor	0,967	0,972	0,972	0,972	0,973

Table 2	Power measures - Dimmer setting = 70%

Voltage [Vac]	Recordings	EUT 3422017_001	EUT 3422017_002	EUT 3422017_003	EUT 3422017_004	EUT 3422017_005
210	Watt [W]	43,44	43,98	43,61	44,17	43,39
	VA [VA]	44,99	45,44	45,16	45,59	44,77
	Power factor	0,965	0,968	0,966	0,969	0,969
220	Watt [W]	43,42	43,99	43,60	44,16	43,44
	VA [VA]	45,12	45,60	45,32	45,76	45,15
	Power factor	0,962	0,965	0,962	0,965	0,962
230	Watt [W]	43,45	44,08	43,67	44,23	43,47
	VA [VA]	45,30	46,03	45,51	46,01	45,34
	Power factor	0,959	0,958	0,960	0,961	0,959
240	Watt [W]	43,66	44,26	43,82	44,29	43,47
	VA [VA]	45,87	46,37	46,08	46,32	45,40
	Power factor	0,952	0,954	0,951	0,956	0,957
250	Watt [W]	43,73	44,37	43,92	44,32	43,50
	VA [VA]	46,04	46,81	46,26	46,50	45,78
	Power factor	0,950	0,948	0,949	0,953	0,950

Table 3	Power measures - Dimmer setting = 50%

Voltage [Vac]	Recordings	EUT 3422017_001	EUT 3422017_002	EUT 3422017_003	EUT 3422017_004	EUT 3422017_005
210	Watt [W]	31,50	31,94	31,67	31,98	31,55
	VA [VA]	33,43	33,87	33,60	33,82	33,42
	Power factor	0,942	0,943	0,943	0,946	0,944
220	Watt [W]	31,51	31,97	31,73	32,00	31,53
	VA [VA]	33,68	33,92	33,88	33,88	33,46
	Power factor	0,936	0,942	0,936	0,944	0,942
230	Watt [W]	31,55	31,96	31,74	32,04	31,61
	VA [VA]	33,85	34,34	34,06	34,27	33,84
	Power factor	0,932	0,930	0,932	0,935	0,934
240	Watt [W]	31,58	32,02	31,78	32,10	31,58
	VA [VA]	34,34	34,61	34,32	34,57	34,11
	Power factor	0,920	0,925	0,926	0,928	0,926
250	Watt [W]	31,61	32,04	31,80	32,12	31,57
	VA [VA]	34,52	35,04	34,76	34,77	34,28
	Power factor	0,915	0,914	0,915	0,924	0,920

Table 4	Power measures - Dimmer setting = 30%

Voltage [Vac]	Recordings	EUT 3422017_001	EUT 3422017_002	EUT 3422017_003	EUT 3422017_004	EUT 3422017_005
210	Watt [W]	19,52	19,78	19,65	19,76	19,48
	VA [VA]	22,06	22,28	22,24	22,05	21,86
	Power factor	0,885	0,888	0,883	0,896	0,891
220	Watt [W]	19,57	19,86	19,72	19,83	19,56
	VA [VA]	22,44	22,68	22,65	22,44	22,24
	Power factor	0,872	0,876	0,871	0,884	0,879
230	Watt [W]	19,65	19,91	19,78	19,90	19,63
	VA [VA]	22,78	23,02	22,99	23,00	22,56
	Power factor	0,863	0,865	0,860	0,865	0,870
240	Watt [W]	19,72	19,99	19,86	19,95	19,67
	VA [VA]	23,29	23,54	23,51	23,28	23,05
	Power factor	0,847	0,849	0,845	0,857	0,853
250	Watt [W]	19,76	20,03	19,91	19,99	19,72
	VA [VA]	23,77	24,03	24,01	23,75	23,52
	Power factor	0,831	0,833	0,829	0,842	0,838

Table 5	Power measures - Dimmer setting = 10%

Voltage [Vac]	Recordings	EUT 3422017_001	EUT 3422017_002	EUT 3422017_003	EUT 3422017_004	EUT 3422017_005
210	Watt [W]	7,86	8,03	7,99	7,92	7,90
	VA [VA]	12,80	12,60	13,01	12,60	12,61
	Power factor	0,614	0,637	0,614	0,629	0,626
220	Watt [W]	7,85	7,97	7,93	7,90	7,87
	VA [VA]	13,64	13,63	13,64	13,42	13,21
	Power factor	0,575	0,585	0,581	0,589	0,596
230	Watt [W]	7,82	7,91	7,90	7,86	7,81
	VA [VA]	14,27	14,27	14,49	14,03	14,04
	Power factor	0,548	0,554	0,545	0,560	0,556
240	Watt [W]	7,81	7,90	7,87	7,83	7,77
	VA [VA]	14,88	14,89	14,87	14,64	14,41
	Power factor	0,523	0,531	0,529	0,535	0,539
250	Watt [W]	7,76	7,88	7,84	7,79	7,74
	VA [VA]	15,50	15,52	15,50	15,25	15,01
	Power factor	0,501	0,508	0,506	0,511	0,516

Annex 1	Critical Components

Object / part No.	Code	Manufacturer/ trademark	Type / model	Technical data
LED controlgear	-	Philips	XI FP 75W 0.3-1.0A SNLDAE 230V S240 sXt	Uin = 220-240 Vac, 50/60 Hz Uout = 35-108 Vdc Uout (open circuit) = 140 Vdc max t_c = 85 °C
LED	-	CREE	MD-A 1450	1500 mA Max, 5700 K Max, 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
		Dimmer, Tridonic, DALI PS1	--	Not under calibration
		Software, Tridonic, Master Configurator v. 2.22.0.1596	--	Not under calibration

Appendix 2	Photographs

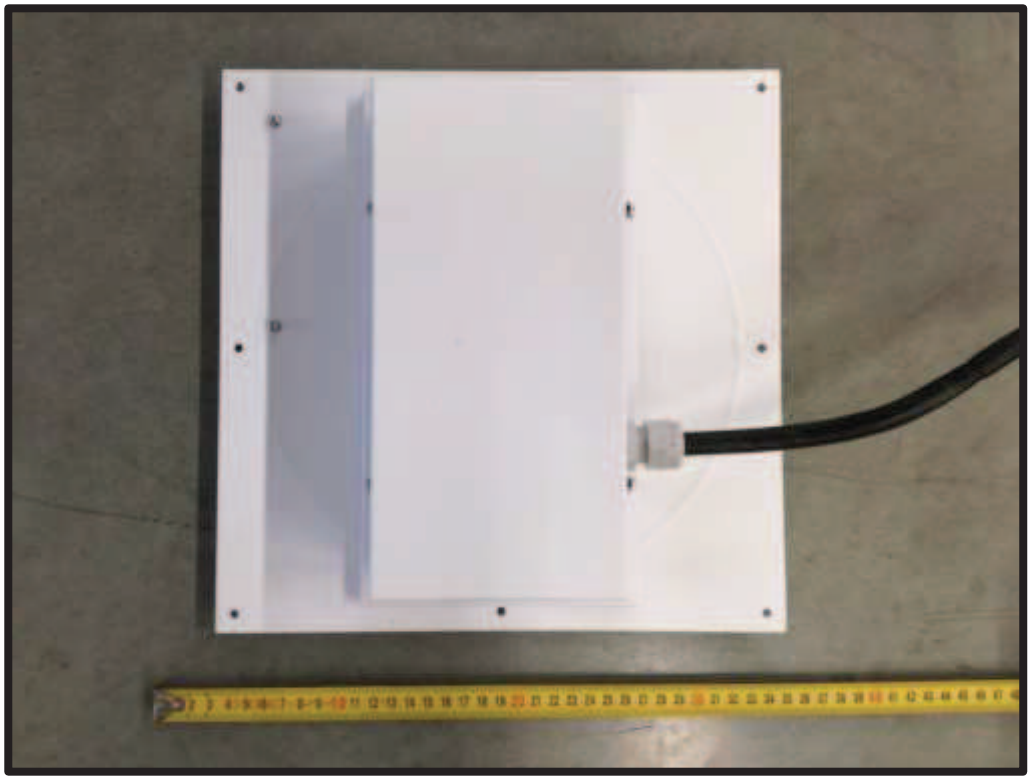


Fig. 1: LED luminaire (EUT 3422017_001) – Top view

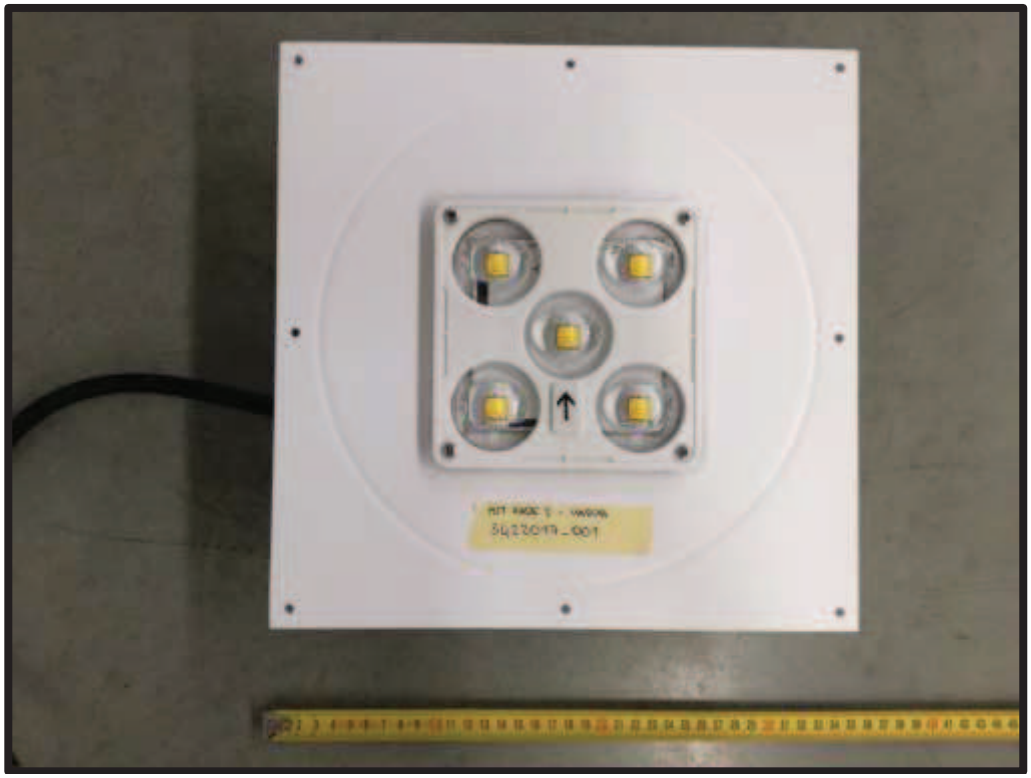


Fig. 2: LED luminaire (EUT 3422017_001) – Bottom view

Appendix 2	Photographs

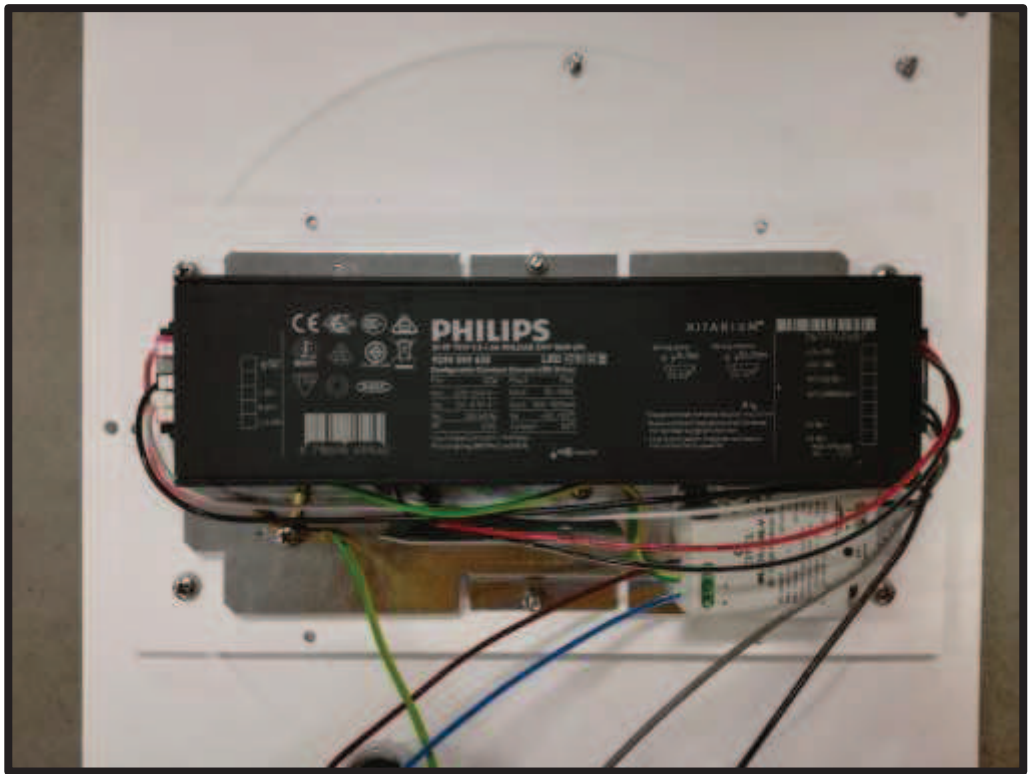


Fig. 3: LED luminaire (EUT 3422017_001) – Internal view

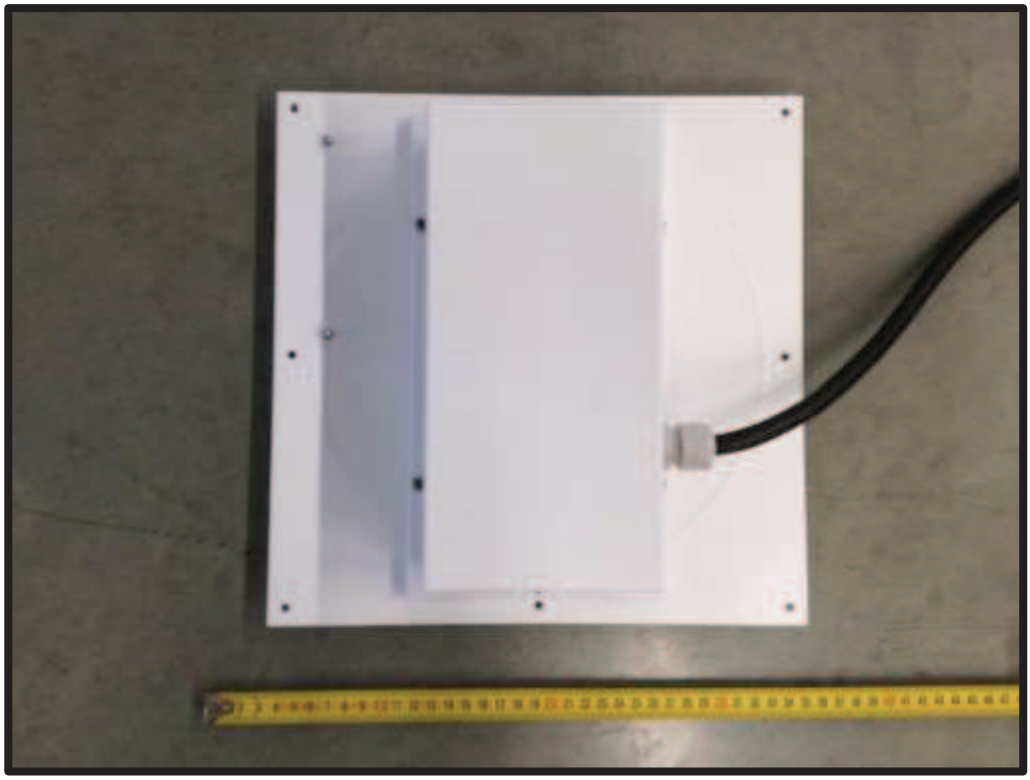


Fig. 4: LED luminaire (EUT 3422017_002) – Top view

Appendix 2	Photographs

Fig. 5: LED luminaire (EUT 3422017_002) – Bottom view

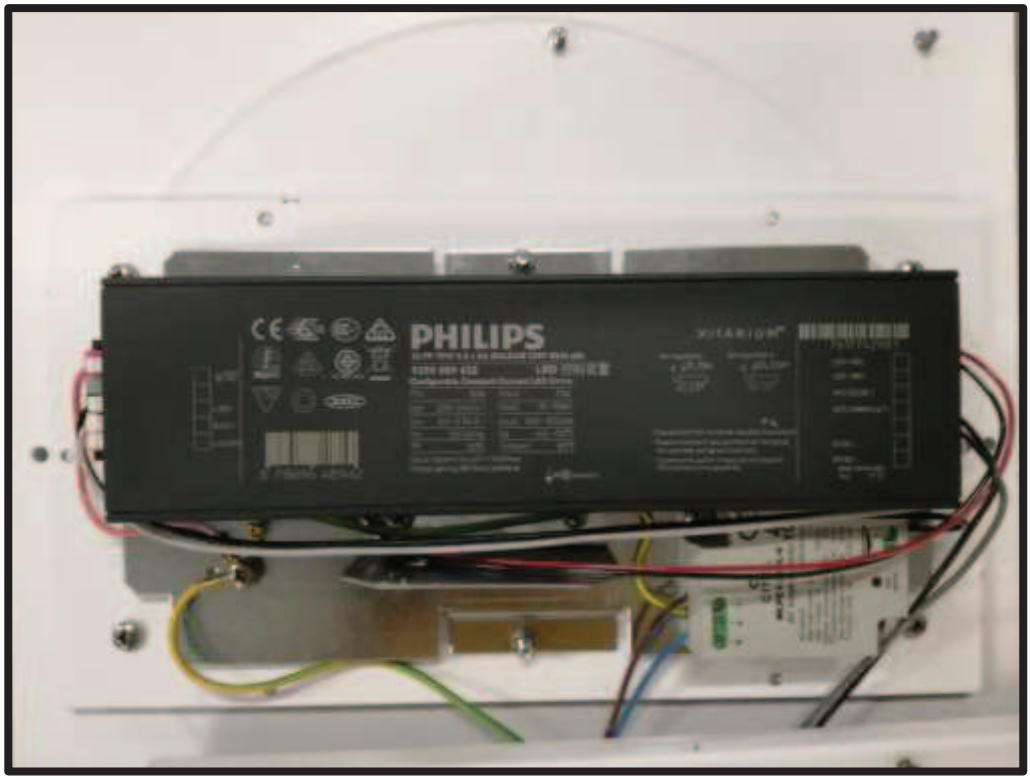


Fig. 6: LED luminaire (EUT 3422017_002) – Internal view

Appendix 2	Photographs

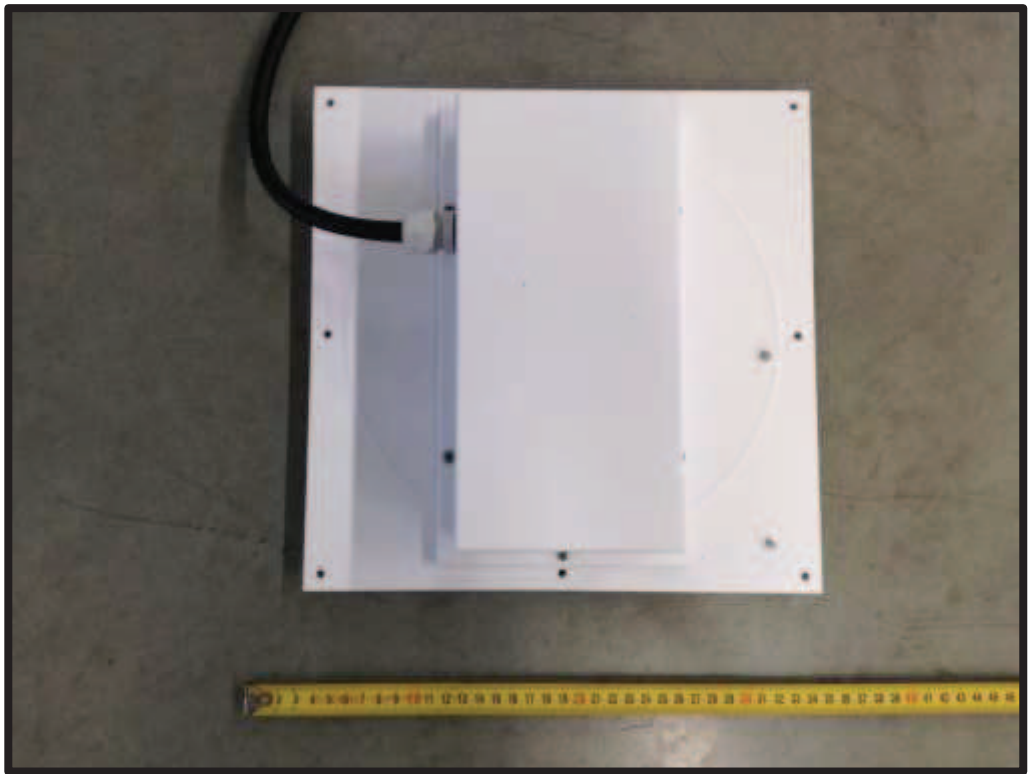


Fig. 7: LED luminaire (EUT 3422017_003) – Top view

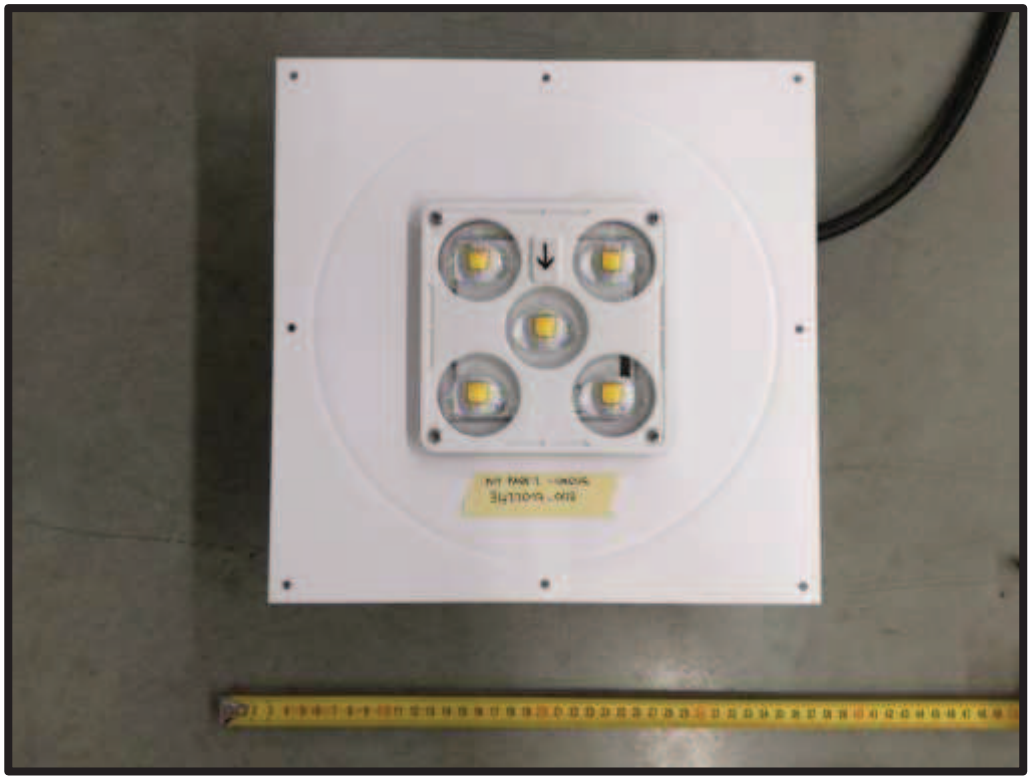


Fig. 8: LED luminaire (EUT 3422017_003) – Bottom view

Appendix 2	Photographs

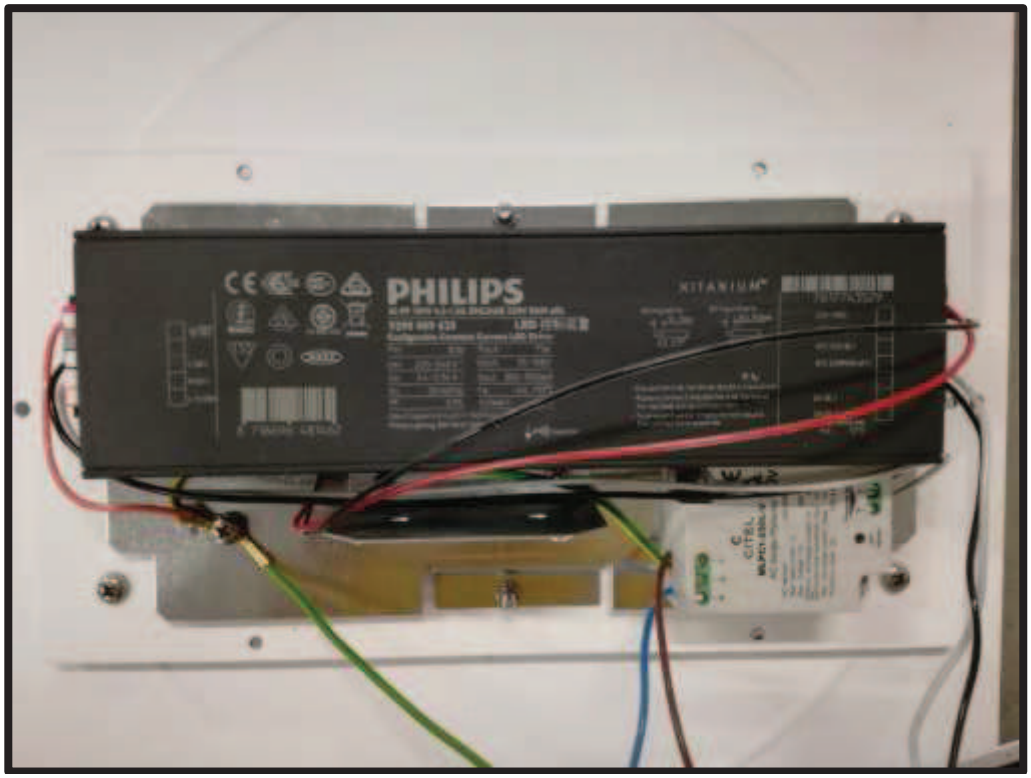


Fig. 9: LED luminaire (EUT 3422017_003) – Internal view

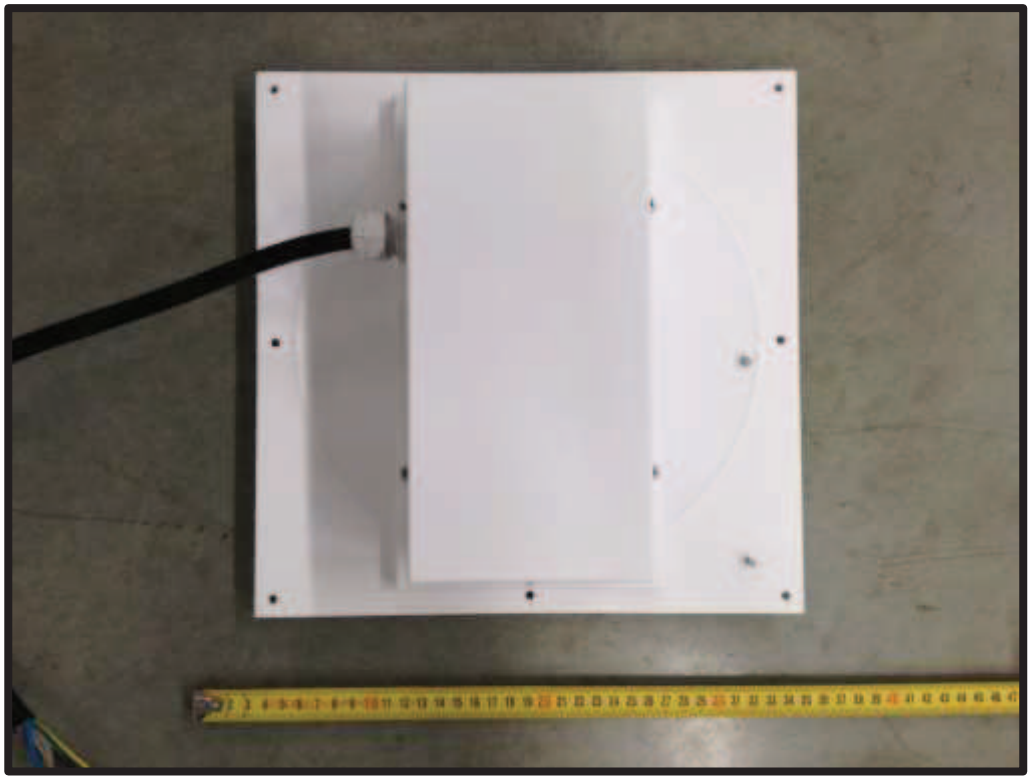


Fig. 10: LED luminaire (EUT 3422017_004) – Top view

Appendix 2	Photographs

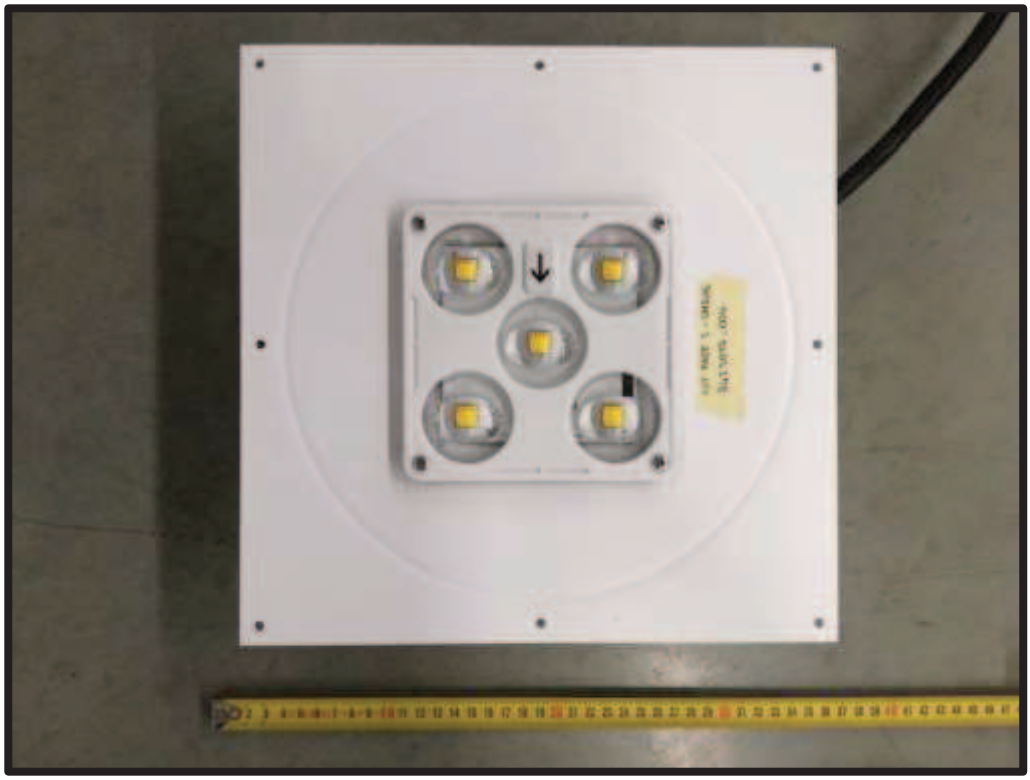


Fig. 11: LED luminaire (EUT 3422017_004) – Bottom view

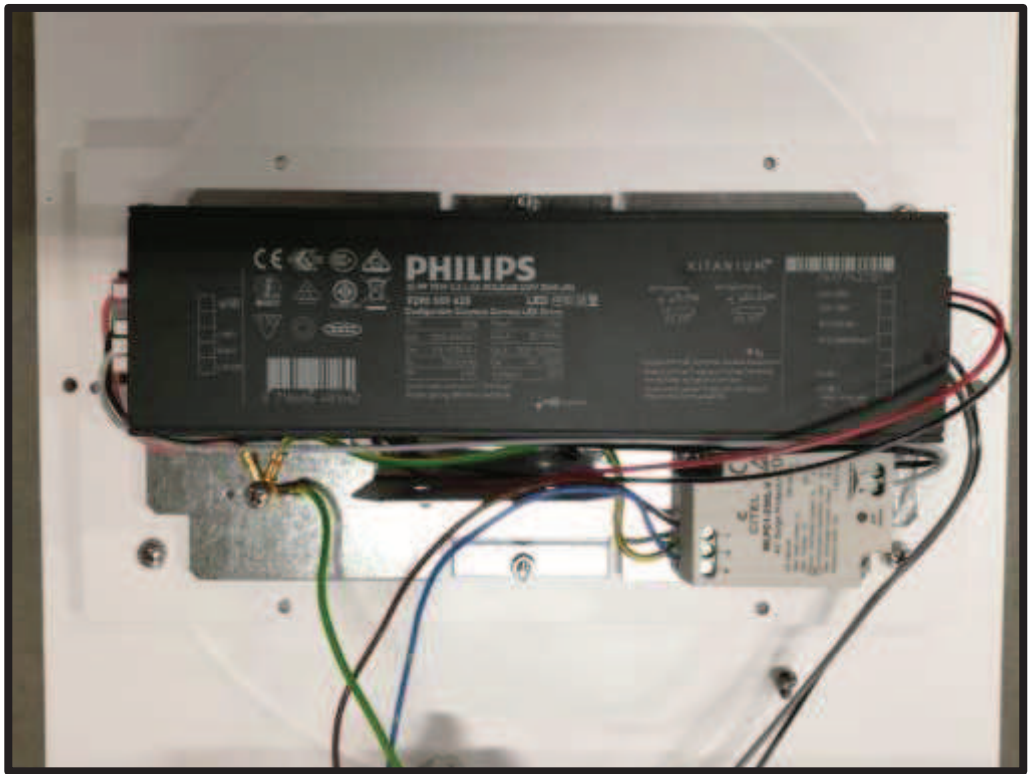


Fig. 12: LED luminaire (EUT 3422017_004) – Internal view

Appendix 2	Photographs

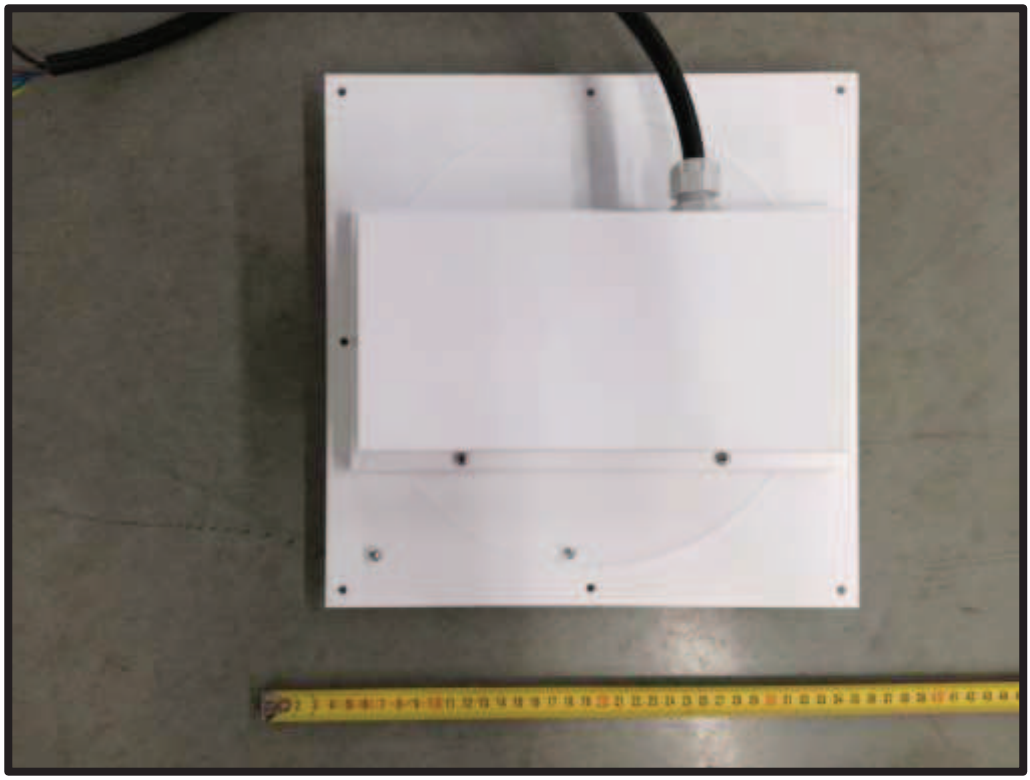


Fig. 13: LED luminaire (EUT 3422017_005) – Top view

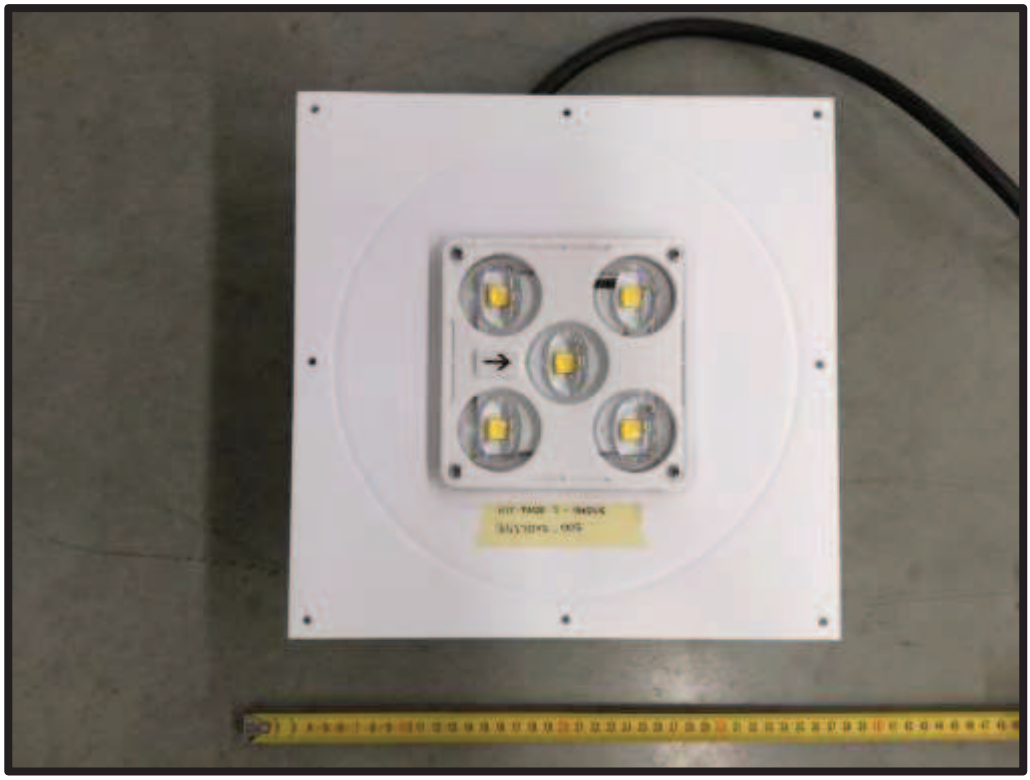


Fig. 14: LED luminaire (EUT 3422017_005) – Bottom view

Appendix 2	Photographs

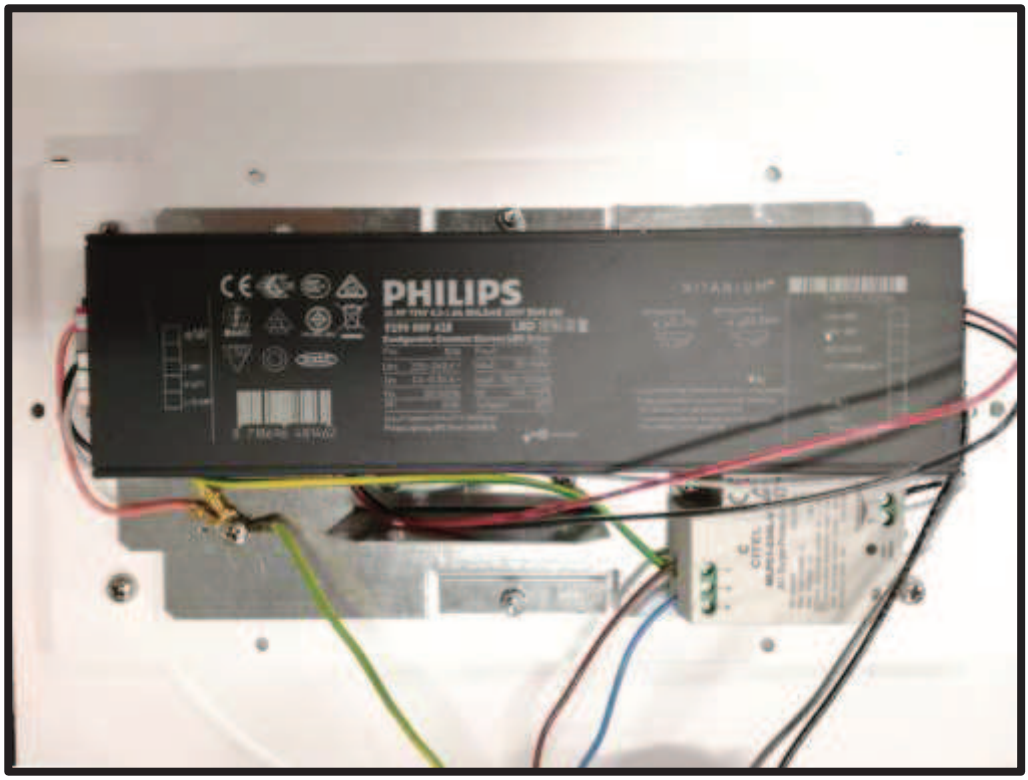


Fig. 15: LED luminaire (EUT 3422017_005) – Internal view

Fig. 16: LED controlgear used

Appendix 2	Photographs

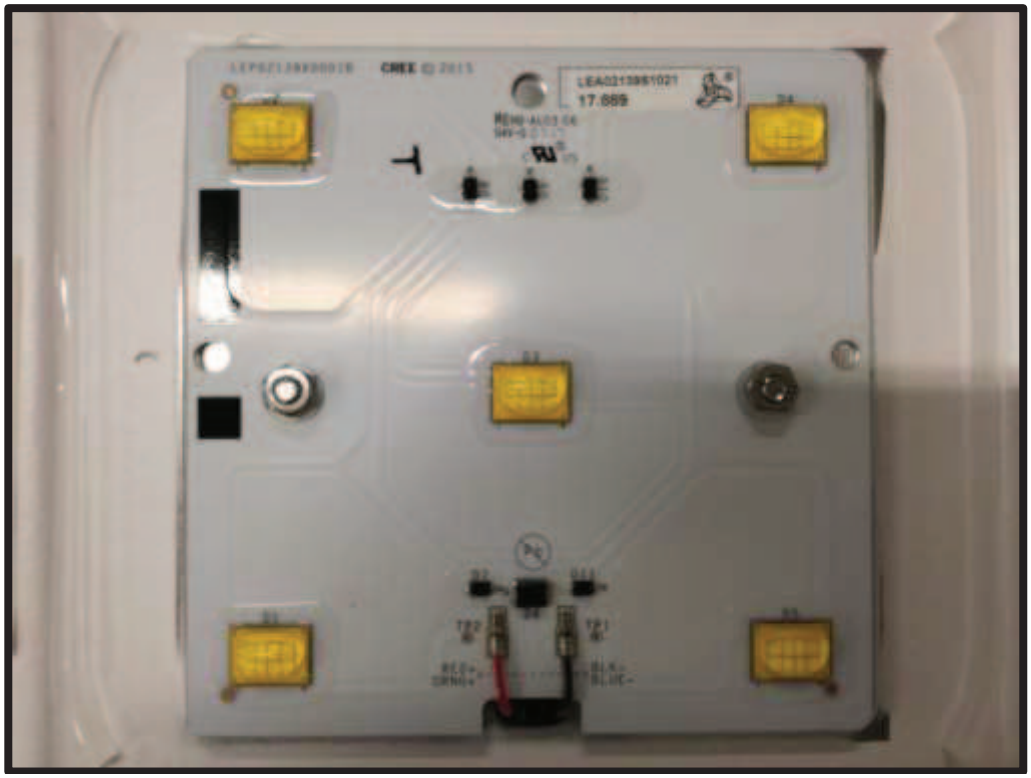


Fig. 17: LED module view