TEST REPORT

Reference No.	:	WTU23N04072303E
Applicant	:	PhotonTek Hoticultural Lighting
Address	:	Ewropa Business centre, Level 3-701,Dun Karm Street Birkirkara, BKR 9034,Malta
Manufacturer	:	Same as applicant
Address	:	Same as applicant
Product Name	:	LED Luminaires
Model No.	:	Refer to section 3.2
Test specification	:	ICES-005 Issue 5 (December, 2018)
Date of Receipt sample	:	2022-11-18
Date of Test	:	2022-11-18 to 2022-11-25
Date of Issue	:	2023-05-10
Test Report Form No.	:	WEL-ICES005A-01B
Test Result	:	**Pass**

Remarks:
The results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company. The report would be invalid without specific stamp of test institute and the signatures of compiler and approver.

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Tested by: Alice Wang

Approved by: Shouyin Wang

1 Test Summary

EMISSION			
Test Item	**Test Standard**	**Test Method**	**Test Result**
Conducted Emission	ICES-005 Issue 5 (December, 2018)	ANSI C63.4	Pass
Radiated Emission	ICES-005 Issue 5 (December, 2018)	ANSI C63.4	Pass

Remark:

Pass	EUTs meet the requirement
Fail	EUTs do not meet the requirement
N/A	EUTs do not apply to the test object

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3 General Information

3.1 General Description of E.U.T.

Product Name ..... : LED Luminaires

Model No. ..... : Refer to section 3.2

Protection Class ..... : Class I

Remark ..... :

1. The EUT (equipment under test) is an ordinary LED Luminaires for Lighting and similar use. For the further information, refer to the user's manual.
2. This report is based on original test report " WTU22N11231407E " to issue a co-license.
3. In electrical characteristics, all models are similar circuit principle and PCB layout, except for model name. For details information, refer to the section 3.2.
3. For the test results, the EUT had been tested in the all conditions of rated input. But only the worst case was shown in test report.

3.2 Details of E.U.T.

Technical Data..... :

No.	Model	Rated Input	Rated Power	Note
1.	X 1000W PRO 2.9	120 - 277 Vac, 50 / 60 Hz	1000 W	/
2.	X 1000W PRO 2.9 277V	120 - 277 Vac, 50 / 60 Hz	1000 W	/

3.3 Description of Support Units

The EUT has been tested as an independent unit. X 1000W PRO 2.9 is the tested sample. All tests were performed in the condition of 120V~, 60Hz input.

3.4 Standards Applicable for Testing

The tests were performed according to following standards:

ICES-005 Issue 5 (December, 2018) Spectrum Management and Telecommunications Interference-Causing Equipment Standard Lighting Equipment

3.5 Subcontracted

Whether parts of tests for the product have been subcontracted to other labs:

☐ Yes ☒ No

If Yes, list the related test items and lab information:

Test items:---

Lab information: ---

3.6 Abnormalities from Standard Conditions

None.

4 Equipment Used during Test

Conducted Emission					
Item	**Equipment**	**Manufacturer**	**Model No.**	**Serial No.**	**Calibration Status**
1	EMI Test Receiver	R&S	ESCI	101406	Valid
2	TWO-LINE V-NETWORK	R&S	ENV216	101208	Valid
Radiated Emission					
Item	**Equipment**	**Manufacturer**	**Model No.**	**Serial No.**	**Calibration Status**
1	EMI Test Receiver	R&S	ESR7	101777	Valid
2	TRILOG Biconic logarithmic periodic broadband antenna	SCHWARZBECK	VULB9163	01025	Valid

4.1 Measurement Uncertainty

Test Item	Frequency Range	Uncertainty	Note
Conducted Emission	0.15 MHz ~ 30 MHz	± 2.66 dB	(1)
Radiated Emission	30 MHz ~ 1000 MHz	± 5.03 dB	(1)

4.2 Special Accessories and Auxiliary Equipment

Item	Equipment	Technical Data	Manufacturer	Model No.	Serial No.
1.	/	/	/	/	/

(1)This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

5 Emission Test Results

5.1 Conducted Emission, 0.15 MHz to 30 MHz

Test Requirement ..... : ICES-005

Test Method ..... : ANSI C63.4

Test Result ..... : Pass

Test Limit..... : Table 2 of ICES-005

Frequency Range ..... : 0.15 MHz to 30 MHz

Class/Severity ..... : Class B

5.1.1 E.U.T. Operation

Operating Environment:

Temperature..... : 22.7 °C

Humidity ..... : 50%RH

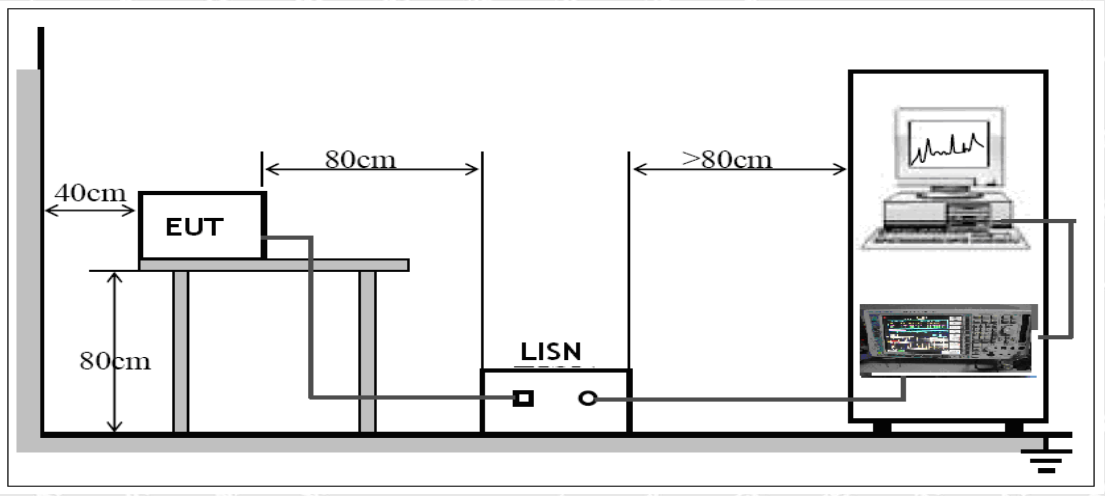
EUT Operation:

Input Voltage..... : 120 Vac, 60 Hz

Operating Mode ..... : On mode

5.1.2 Block Diagram of Test Setup

The Conducted Emission tests were performed in accordance with the ANSI C63.4.

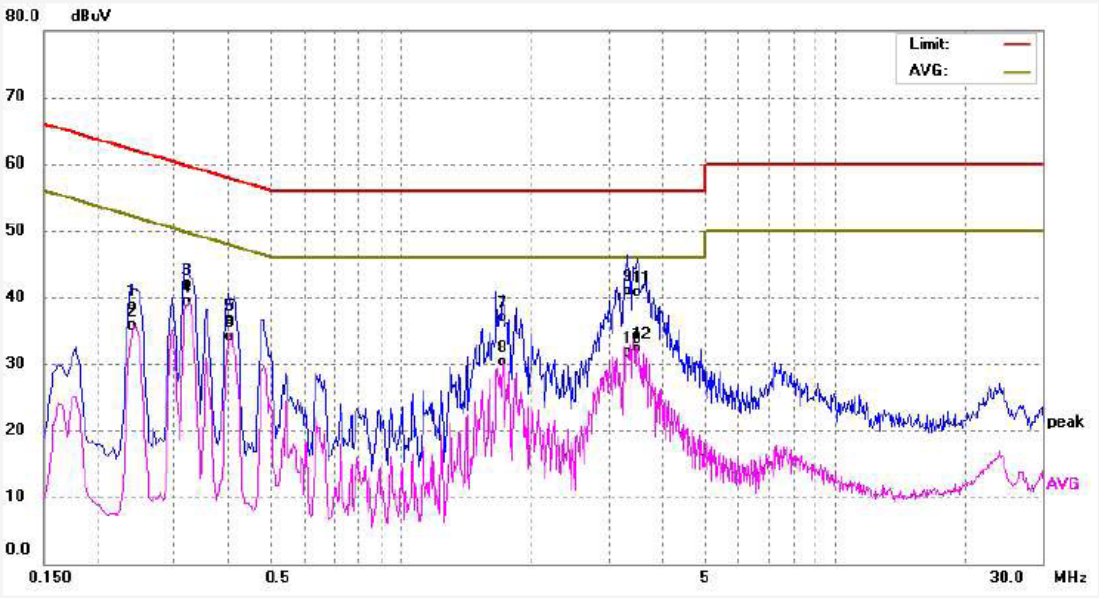


5.1.3 Measurement Data

The maximised peak emissions from the EUT was scanned and measured for both the Live and Neutral Lines. Quasi-peak & average measurements were performed if peak emissions were within 6dB of the average limit line.

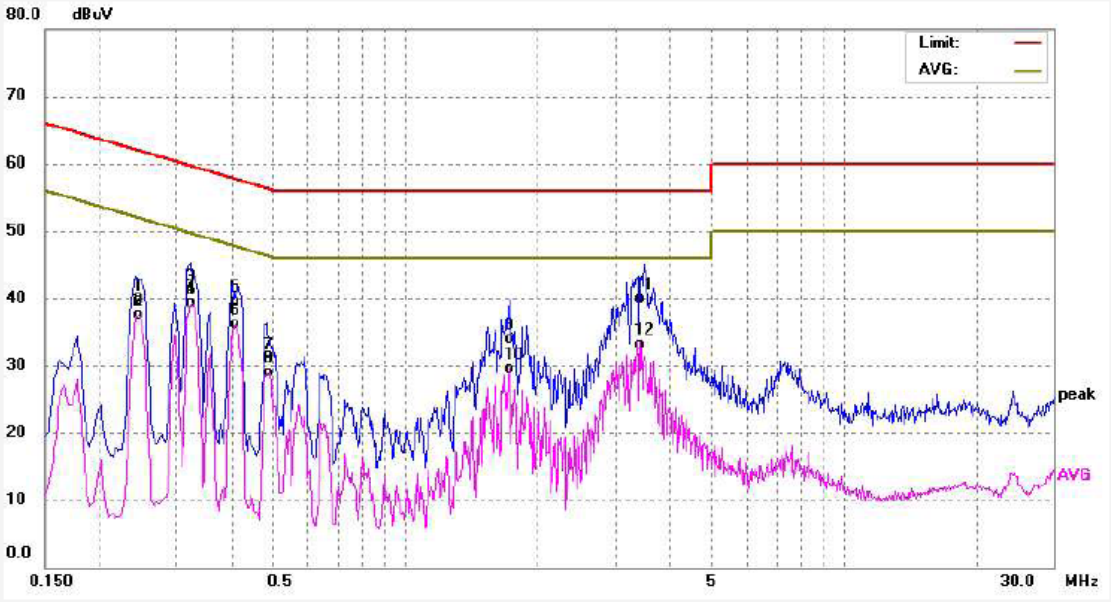
5.1.4 Conducted Emission Test Data

Live Line



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit dBuV	Margin (dB)	Detector	Remark
1	0.2420	29.17	9.63	38.80	62.02	-23.22	QP	
2	0.2420	26.05	9.63	35.68	52.02	-16.34	AVG	
3	0.3220	32.23	9.63	41.86	59.65	-17.79	QP	
4	0.3220	29.69	9.63	39.32	49.65	-10.33	AVG	
5	0.4052	26.80	9.63	36.43	57.75	-21.32	QP	
6	0.4052	24.44	9.63	34.07	47.75	-13.68	AVG	
7	1.7140	27.20	9.68	36.88	56.00	-19.12	QP	
8	1.7140	20.64	9.68	30.32	46.00	-15.68	AVG	
9	3.3140	31.17	9.71	40.88	56.00	-15.12	QP	
10	3.3140	22.09	9.71	31.80	46.00	-14.20	AVG	
11	3.4940	31.09	9.71	40.80	56.00	-15.20	QP	
12	3.4940	22.67	9.71	32.38	46.00	-13.62	AVG	

Neutral Line



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit dBuV	Margin (dB)	Detector	Remark
1	0.2460	30.05	9.63	39.68	61.89	-22.21	QP	
2	0.2460	27.97	9.63	37.60	51.89	-14.29	AVG	
3	0.3260	31.56	9.63	41.19	59.55	-18.36	QP	
4	0.3260	29.73	9.63	39.36	49.55	-10.19	AVG	
5	0.4100	29.90	9.64	39.54	57.65	-18.11	QP	
6	0.4100	26.46	9.64	36.10	47.65	-11.55	AVG	
7	0.4900	21.36	9.64	31.00	56.17	-25.17	QP	
8	0.4900	19.25	9.64	28.89	46.17	-17.28	AVG	
9	1.7180	24.19	9.68	33.87	56.00	-22.13	QP	
10	1.7180	19.74	9.68	29.42	46.00	-16.58	AVG	
11	3.4340	30.15	9.71	39.86	56.00	-16.14	QP	
12	3.4340	23.47	9.71	33.18	46.00	-12.82	AVG	

5.2 Radiation Emission

Test Requirement ..... : ICES-005

Test Method ..... : ANSI C63.4

Test Limit..... : Table 4 of ICES-005

Test Result ..... : Pass

Frequency Range ..... : 30 MHz to 1 GHz

Class/Severity..... : Class B

5.2.1 E.U.T. Operation

Operating Environment:

Temperature..... : 20.4-22.3 °C

Humidity ..... : 47-49%RH

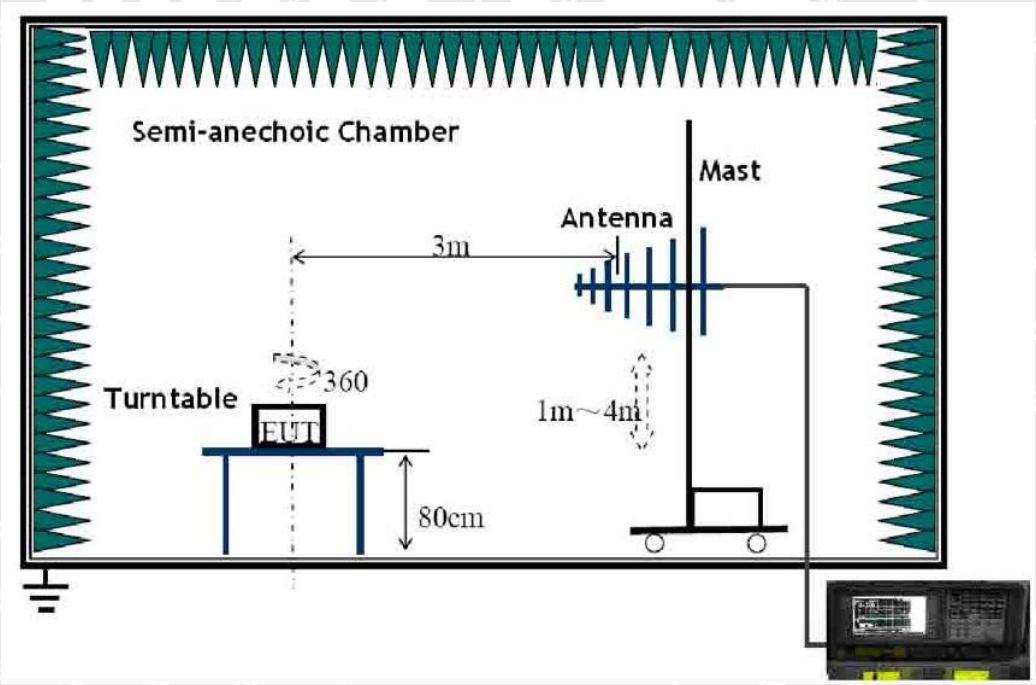
EUT Operation:

Input Voltage..... : 120 Vac, 60 Hz

Operating Mode ..... : On mode

5.2.2 Block Diagram of Test Setup

The Radiated Emission tests were performed in the 3 m Semi- Anechoic Chamber test site, using the setup accordance with the ANSI C63.4.

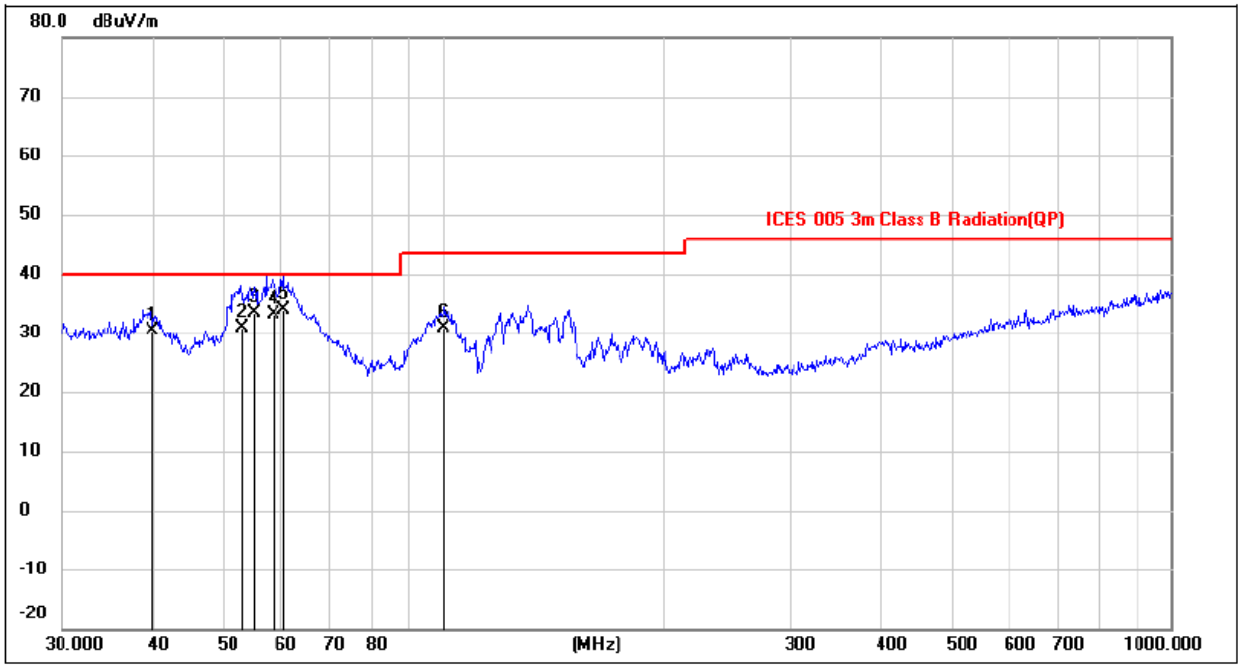


5.2.3 Measurement Data

The maximised peak emissions from the EUT was scanned and measured for EUT 0° - 360°.Quasi-peak measurements were performed if peak emissions were within 6 dB of the limit line.

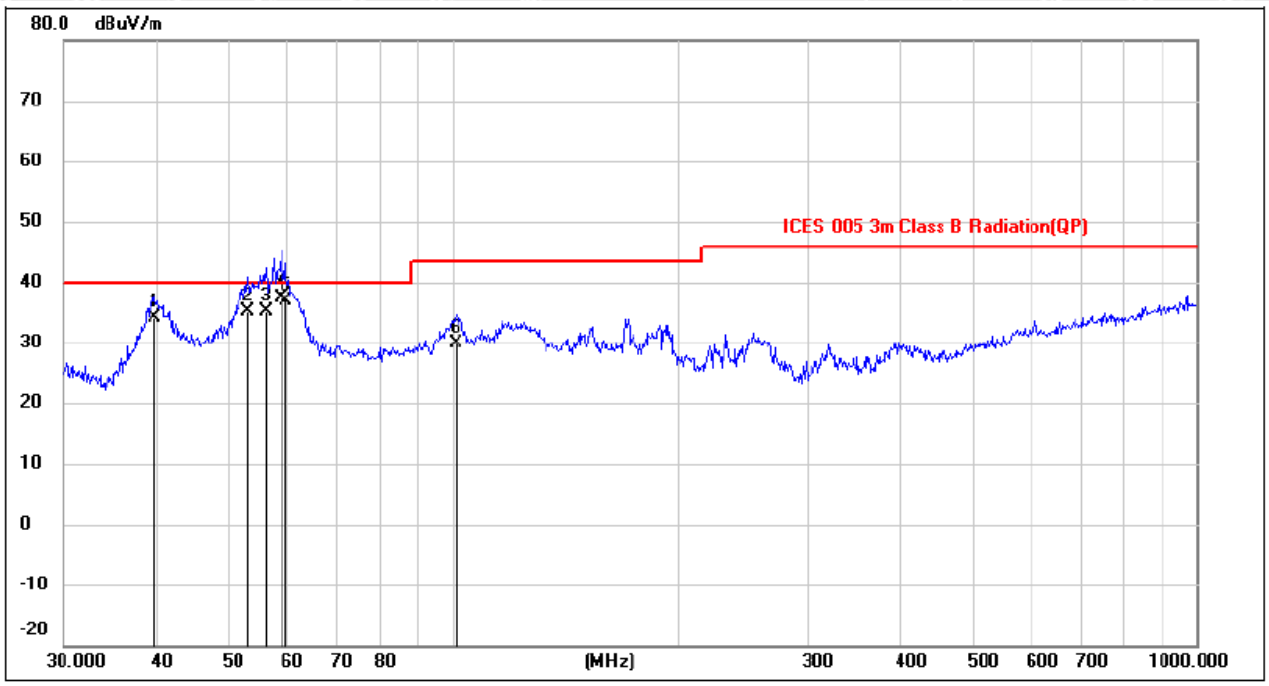
5.2.4 Radiated Emission Test Data

Vertical



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	39.8542	16.94	13.41	30.35	40.00	-9.65	QP
2	52.9453	16.73	14.24	30.97	40.00	-9.03	QP
3	55.2207	19.41	14.06	33.47	40.00	-6.53	QP
4	58.4074	19.69	13.47	33.16	40.00	-6.84	QP
5	60.4919	20.91	13.01	33.92	40.00	-6.08	QP
6	100.5806	18.24	12.68	30.92	43.50	-12.58	QP

Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	39.7146	20.70	13.37	34.07	40.00	-5.93	QP
2	53.1313	20.95	14.22	35.17	40.00	-4.83	QP
3	56.1974	21.27	13.88	35.15	40.00	-4.85	QP
4	58.8185	24.03	13.39	37.42	40.00	-2.58	QP
5	59.6492	23.65	13.24	36.89	40.00	-3.11	QP
6	101.2883	17.28	12.66	29.94	43.50	-13.56	QP

6 Photographs – Test Setup

6.1 Photograph – Conducted Emission Test Setup

6.2 Photograph –Radiation Emission Test Setup

7 Photographs – Constructional Details

7.1 EUT – Front View

7.2 EUT – Front View

====== End of Report ======