



# TEST REPORT

Reference No..... : WTU20F07049490E  
 Applicant..... : PhotonTek Horticultral Lighting  
 Address..... : Ewropa Business centre, Level 3-701, Dun Karm Street Birkirkara, BKR 9034, Malta  
 Manufacturer ..... : The same as above  
 Address..... : The same as above  
 Product Name..... : PhotonTek X600W Pro LED  
 Model No..... : X600W PRO  
 Standards..... : 47 CFR PART 18 SUBPART C (Oct.,2018)  
 Date of Receipt sample .... : 2020-05-29  
 Date of Test ..... : 2020-05-29 to 2020-06-04  
 Date of Issue..... : 2020-07-31  
 Test Report Form No..... : WEO-FCC18A-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.

Prepared By:

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Danny Zhou / Manager



## 1 Test Summary

Test Item	Test Requirement	Class	Test Method	Test Result
Conducted Emission	47 CFR PART 18 SUBPART C (Oct.,2018)	Class B	FCC/OST MP-5:1986	Pass
Radiated Emission	47 CFR PART 18 SUBPART C (Oct.,2018)	Class B	FCC/OST MP-5:1986	Pass

Remark:

Pass

Test item meets the requirement

N/A

Test case does not apply to the test object



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### 3 General Information

#### 3.1 General Description of E.U.T.

**Product Name** ..... : PhotonTek X600W Pro LED  
**Model No.** ..... : X600W PRO  
**Remark**..... : ---

#### 3.2 Details of E.U.T.

**Technical Data** ..... : AC 120-277V, 50/60Hz, 600W

#### 3.3 Description of Support Units

The EUT has been tested as an independent unit. X600W PRO is the test sample. Both tests were performed in the condition of AC 120V/60Hz input. The worst case mode were recorded in this report.

#### 3.4 Standards Applicable for Testing

The tests were performed according to following standards:

47 CFR PART 18 SUBPART C (Oct.,2018) Industrial, Scientific, and Medical Equipment

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### 3.5 Test Facility

The test facility has a test site registered with the following organizations:

- **ISED – Registration No.: 21895**

Waltek Services (Foshan) Co., Ltd. has been registered and fully described in a report filed with the Innovation, Science and Economic Development Canada (ISED). The acceptance letter from the ISED is maintained in our files. Registration ISED number: 21895, March 12, 2019

- **FCC – Registration No.: 820106**

Waltek Services (Foshan) Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration 820106, August 16, 2018

- **NVLAP – Lab Code: 600191-0**

Waltek Services (Foshan) Co., Ltd. EMC Laboratory is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP/NIST). NVLAP Code: 600191-0.

This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.

### 3.6 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: ---

### 3.7 Abnormalities from Standard Conditions

None.

### 3.8 Other

This report is based on report No. WTU20S05032051E for adding new applicant and new model. The new model X600W PRO and original report model LFHL600T0WRD02 are identical product except for their model name. The changes do not affect the EMC test items. Therefore the EUT is deemed to fulfill all the requirements and no further test has been performed.



## 4 Equipment Used during Test

Mains Terminal Disturbance Voltage (Conducted Emission)					
Item	Equipment	Manufacturer	Model No.	Serial No.	Calibration Status
1.	EMI Test Receiver	R&S	ESCI	100947	Valid
2.	LISN	R&S	ENV216	101215	Valid
3.	Cable	Top	TYPE 16(3.5M)	-	Valid
3m Semi-anechoic Chamber for Radiation					
Item	Equipment	Manufacturer	Model No.	Serial No.	Calibration Status
1.	EMI Test Receiver	R&S	ESCI	101296	Valid
2.	Trilog Broadband Antenna	SCHWARZBECK	VULB9160	9160-3325	Valid
3.	Amplifier	Compliance pirection systems inc	PAP-0203	22024	Valid
4.	Cable	HUBER+SUHNER	CBL2	525178	Valid

### 4.1 Measurement Uncertainty

Test Item	Frequency Range	Uncertainty	Note
Mains Terminal Disturbance Voltage	150kHz~30MHz	±3.64dB	(1)
Radiated Emission	30MHz~300MHz	±5.03dB	(1)
Radiated Emission	1GHz~6GHz	±5.47dB	(1)

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

### 4.2 Special Accessories and Auxiliary Equipment

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

### 4.3 Decision Rule

Compliance or non-compliance with a disturbance limit shall be determined in the following manner.

**If  $U_{LAB}$  is less than or equal to  $U_{cispr}$ , then**

-Compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit;

-Non-compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit.

**If  $U_{LAB}$  is greater than  $U_{cispr}$ , then**

-Compliance is deemed to occur if no measured disturbance level, increased by  $(U_{LAB} - U_{cispr})$ , exceeds the disturbance limit;

-Non-compliance is deemed to occur if any measured disturbance level, increased by  $(U_{LAB} - U_{cispr})$ , exceeds the disturbance limit.

Waltek Services (Foshan) Co., Ltd.

<http://www.waltek.com.cn>



## 5 Emission Test Results

### 5.1 Conducted Emission

**Test Requirement**..... : 47 CFR PART 18, SUBPART C  
**Test Method**..... : ANSI C63.4  
**Test Result**..... : Pass  
**Test Limit**..... : 47 CFR PART 18, SUBPART B Section 18.307  
**Frequency Range**..... : 9kHz to 30MHz  
**Class**..... : Class B

#### 5.1.1 E.U.T. Operation

##### Operating Environment:

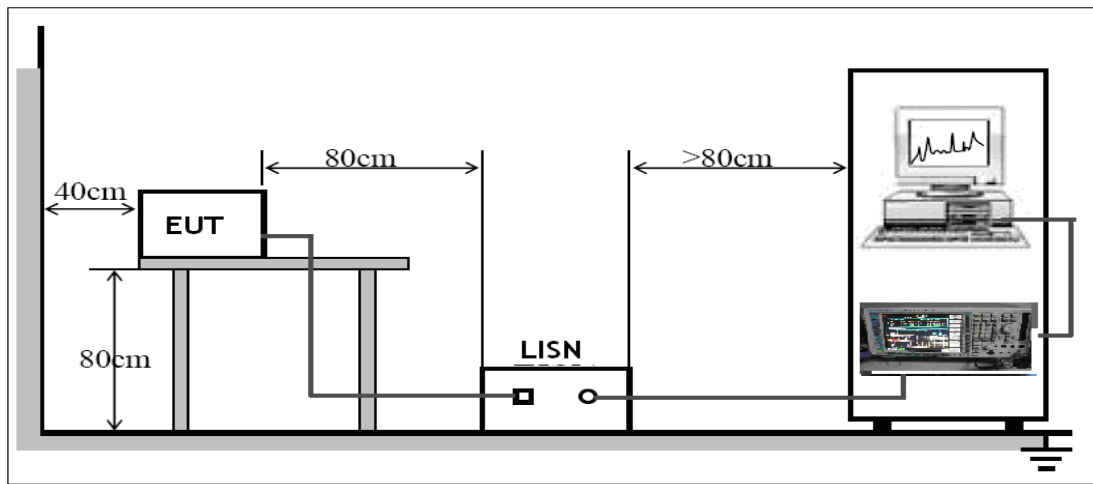
**Temperature** ..... : 23.1°C  
**Humidity**..... : 52.6%RH  
**Atmospheric Pressure**..... : 101.2 kPa

##### EUT Operation:

**Input Voltage** ..... : AC 120V/60Hz  
**Operating Mode**..... : Working mode

#### 5.1.2 Block Diagram of Test Setup

The Conducted Emission tests were performed in accordance with the FCC/OST MP-5:1986.



#### 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 Corrected Amplitude & Margin Calculation

The Corrected factor is calculated by adding LISN VDF(Voltage Division Facotr), Cable Loss and Transient Limiter Attenuation. The basic equation is as follows:

$$\text{Measurement} = \text{Reading Level} + \text{Correct Factor}$$

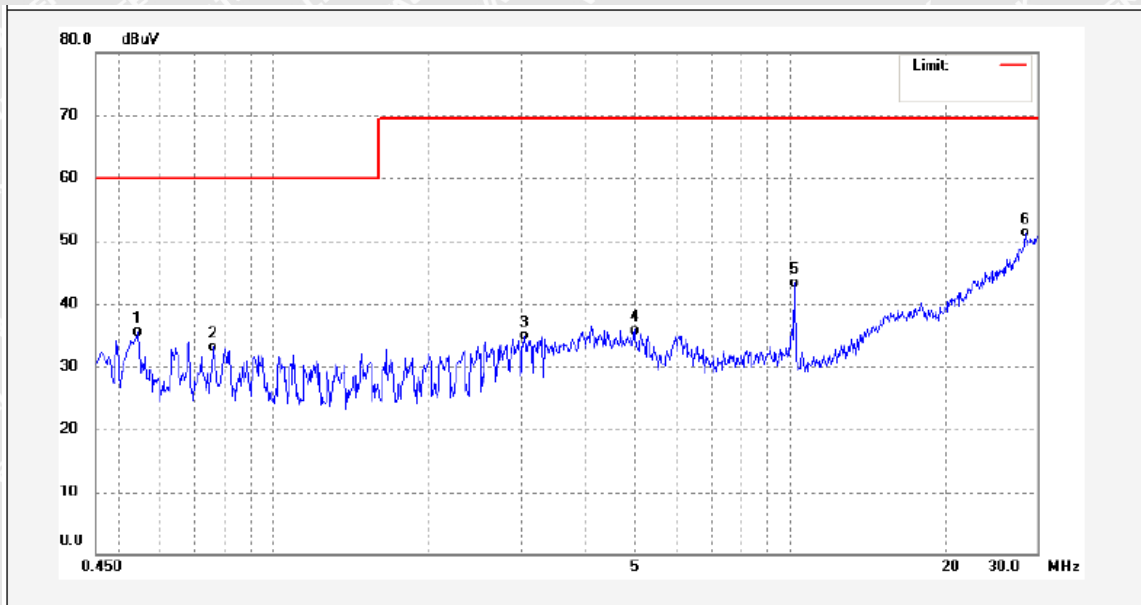
$$\text{Correct Facotor} = \text{LISN VDF} + \text{Cable Loss}$$

The “Margin” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of 7dB means the emission is 7dB below the limit. The equation for margin calculation is as follows:

$$\text{Margin} = \text{Limit} - \text{Measurement}$$

### 5.1.5 Conducted Emission Test Data

Live Line:

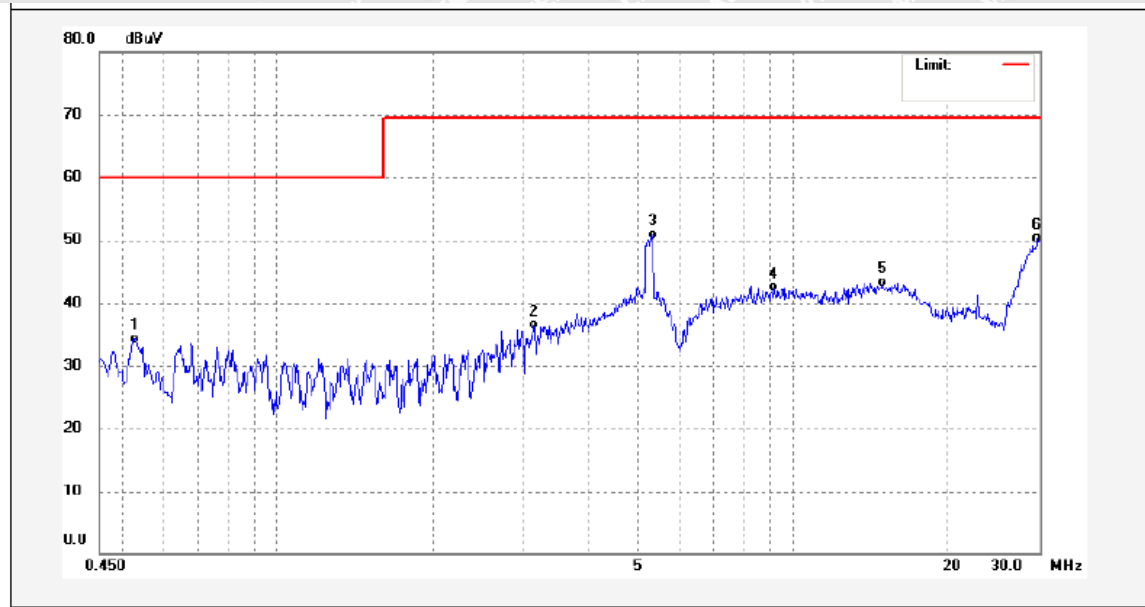


No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit dBuV	Margin (dB)	Detector	Remark
1	0.5420	25.59	9.82	35.41	60.00	-24.59	QP	
2	0.7580	23.29	9.85	33.14	60.00	-26.86	QP	
3	3.0500	24.91	9.93	34.84	69.50	-34.66	QP	
4	4.9780	25.72	10.08	35.80	69.50	-33.70	QP	
5	10.1660	33.19	10.06	43.25	69.50	-26.25	QP	
6	28.5220	40.99	10.38	51.37	69.50	-18.13	QP	





**Neutral Line:**



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit dBuV	Margin (dB)	Detector	Remark
1	0.5299	24.52	9.82	34.34	60.00	-25.66	QP	
2	3.1340	26.65	9.93	36.58	69.50	-32.92	QP	
3	5.3300	40.81	10.08	50.89	69.50	-18.61	QP	
4	9.1620	32.46	10.07	42.53	69.50	-26.97	QP	
5	14.8180	33.15	10.14	43.29	69.50	-26.21	QP	
6	29.7380	40.00	10.39	50.39	69.50	-19.11	QP	





### 5.2 Radiated Emission

- Test Requirement**..... : 47 CFR PART 18, SUBPART C
- Test Method**..... : FCC/OST MP-5:1986
- Test Limit**..... : 47 CFR PART 18, SUBPART C Section 18.309
- Test Result**..... : Pass
- Frequency Range**..... : 30MHz to 1000MHz
- Class**..... : Class B

#### 5.2.1 E.U.T. Operation

**Operating Environment:**

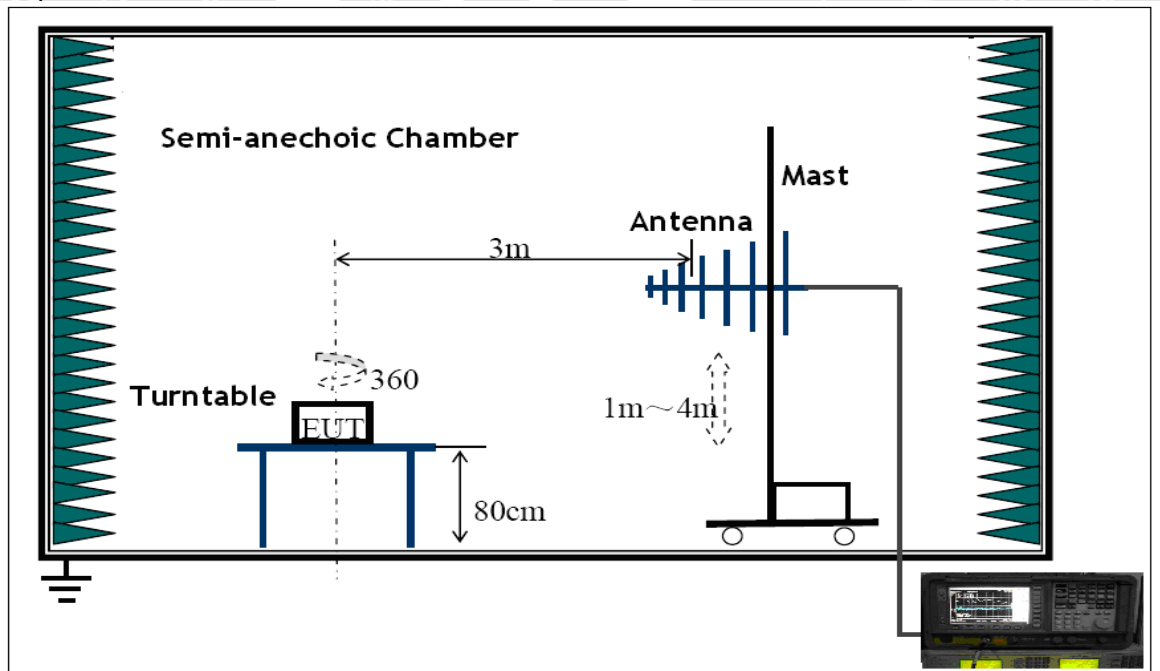
- Temperature** ..... : 22.5°C
- Humidity**..... : 52.6%RH
- Atmospheric Pressure**..... : 101.8 kPa

**EUT Operation:**

- Input Voltage** ..... : AC 120V/60Hz
- Operating Mode**..... : Working mode

#### 5.2.2 Block Diagram of Test Setup

The Radiated Emission tests were performed in the 3m Semi- Anechoic Chamber test site, using the setup accordance with the FCC/OST MP-5:1986.



#### 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 6dB of the limit line.



### 5.2.4 Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and Cable Factor, and subtracting the Amplifier Gain from the Amplitude reading. The basic equation is as follows:

$$\text{Corr. Ampl.} = \text{Indicated Reading} + \text{Corr. Factor}$$

$$\text{Corr. Factor} = \text{Antenna Factor} + \text{Cable Factor} - \text{Amplifier Gain}$$

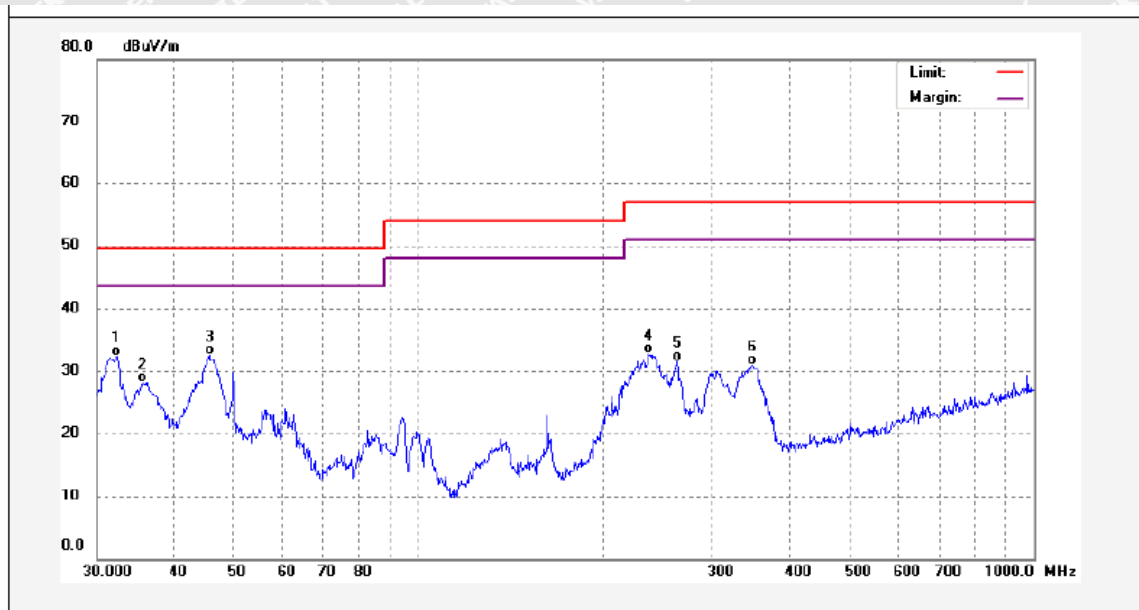
The "Margin" column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of -7dB means the emission is 7dB below the maximum limit for Class B.

The equation for margin calculation is as follows:

$$\text{Margin} = \text{Corr. Ampl.} - \text{Limit}$$

### 5.2.5 Radiated Emission Test Data

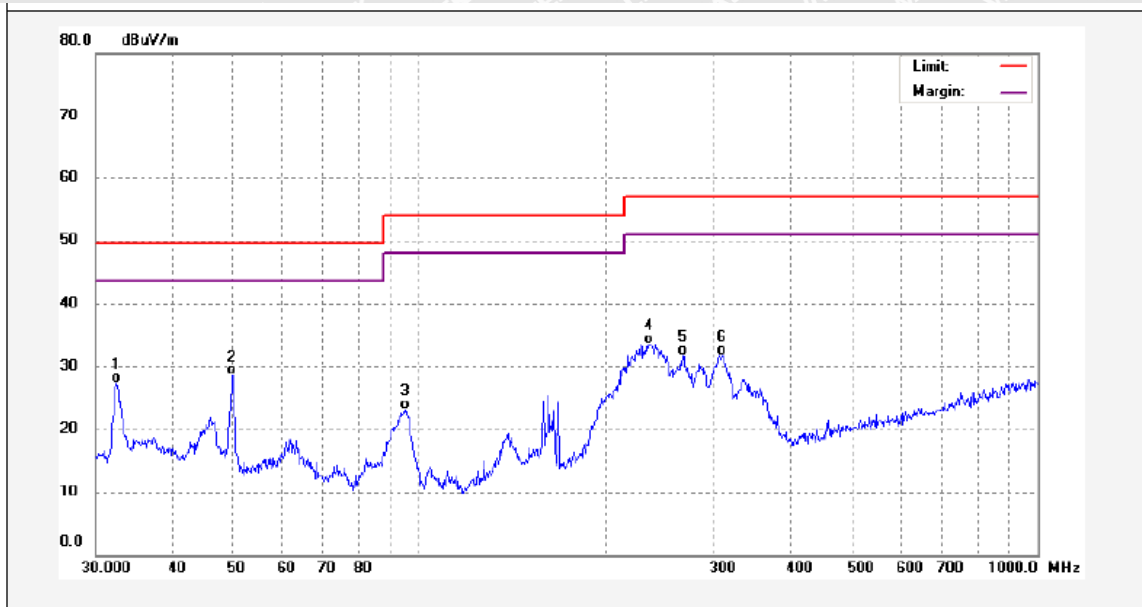
#### Vertical Polarization



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Remark
1	32.1795	50.04	-17.66	32.38	49.50	-17.12	QP	
2	35.4993	45.11	-17.03	28.08	49.50	-21.42	QP	
3	45.6948	48.65	-16.09	32.56	49.50	-16.94	QP	
4	235.8164	49.41	-16.69	32.72	56.90	-24.18	QP	
5	262.8955	47.29	-15.86	31.43	56.90	-25.47	QP	
6	348.0274	44.46	-13.59	30.87	56.90	-26.03	QP	



### Horizontal Polarization



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Remark
1	32.4059	44.91	-17.61	27.30	49.50	-22.20	QP	
2	49.8814	44.93	-16.38	28.55	49.50	-20.95	QP	
3	94.7601	42.77	-19.57	23.20	53.97	-30.77	QP	
4	234.9909	50.25	-16.73	33.52	56.90	-23.38	QP	
5	266.6089	47.37	-15.76	31.61	56.90	-25.29	QP	
6	308.9126	46.42	-14.68	31.74	56.90	-25.16	QP	





## 6 Photographs – Test Setup

### 6.1 Photograph – Conducted Emission Test Setup



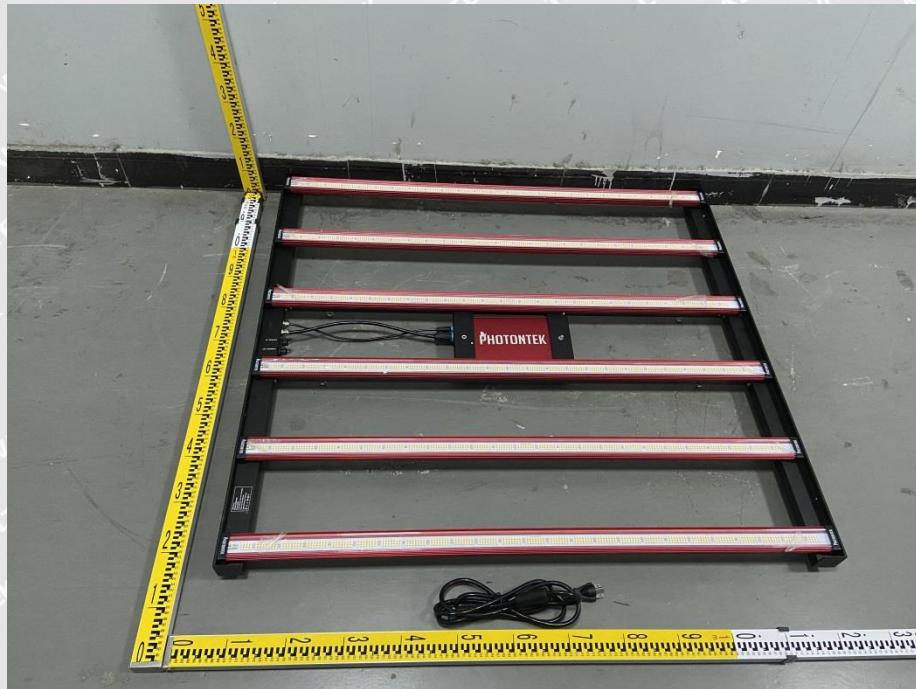
### 6.2 Photograph – Radiated Emission Test Setup

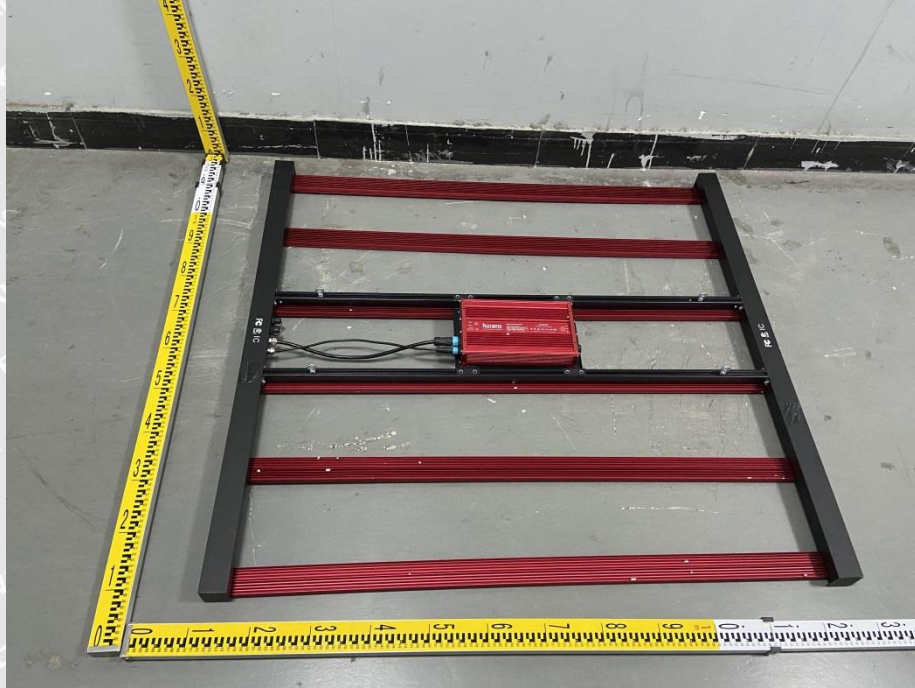




## 7 Photographs – Constructional Details

### 7.1 EUT – External View





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