

## TEST REPORT

For

### SHANGHAI HONGBAO LIGHTING CO LTD

NO .888 wangdong Road Jiading district

<b>Model Number:</b>	LGB2-81/D10/U/30 LGB2-101/D10/U/30 LGB2-101/347/D10/W/30 LGB2-141/D10/U/30 LGB2-161/D10/U/30 LGB2-161/347/D10/W/30 LGB2-201/D10/U/30	
<b>Report Type:</b>	Electrical, Photometric and ISTMT tests according to the following standards and show the compliance to DLC Program SSL Technical Requirements V4.4	
<b>Standards:</b>	IES LM-79-08: Approved Method: Electrical & Photometric Measurement of Solid-state Lighting Products ANSI C82.77-10-2014: Harmonic Emission Limits – Related Power Quality Requirements for Lighting ANSI/UL 1598-2008: Standard for Safety of Luminaires	
<b>Test Engineer:</b>	George Yang	
<b>Report Number:</b>	RKS B190129004-10-1	
<b>Sample Size:</b>	Seven samples were received on 2019-01-29 and used for testing.	
<b>Test Date:</b>	2019-01-30 to 2019-02-28	
<b>Report Date:</b>	2019-03-01	
<b>Reviewed By:</b>	Ray Gao/ EE Engineer	
<b>Prepared By:</b>	Bay Area Compliance Laboratories Corp. (Kunshan). No.248 Chenghu Road, Kunshan, Jiangsu province, China. Tel: +86-0512-86175000 Fax:+86-0512-88934268	

## 1. Product Information and Description

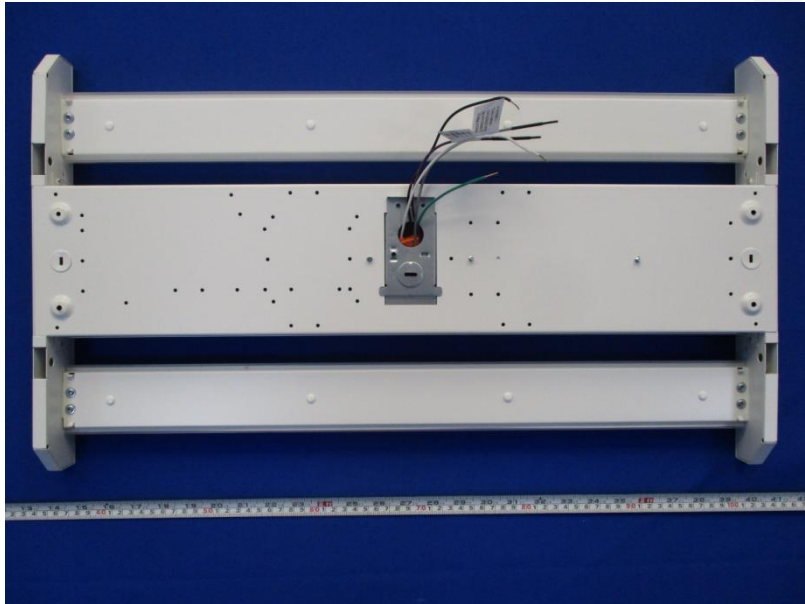
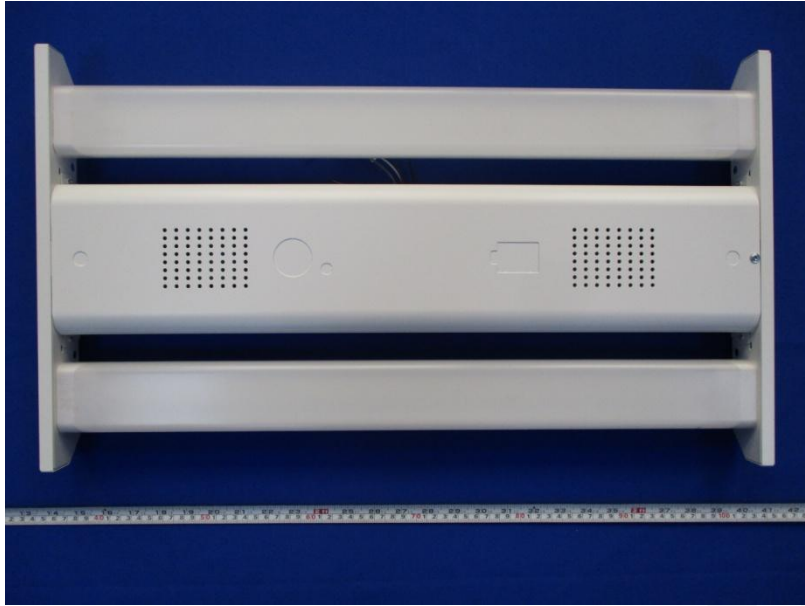
Product Primary Use: High-bay Luminaires for Commercial and Industrial Buildings  
 LED Source Manufacturer: LG Innotek Co.,Ltd  
 LED Source Model: LEMWS28R\*\*LSZ\*\*\*  
 Auxiliary Ballast Model: NA  
 Auxiliary Housing Model: NA

## 2. Test List

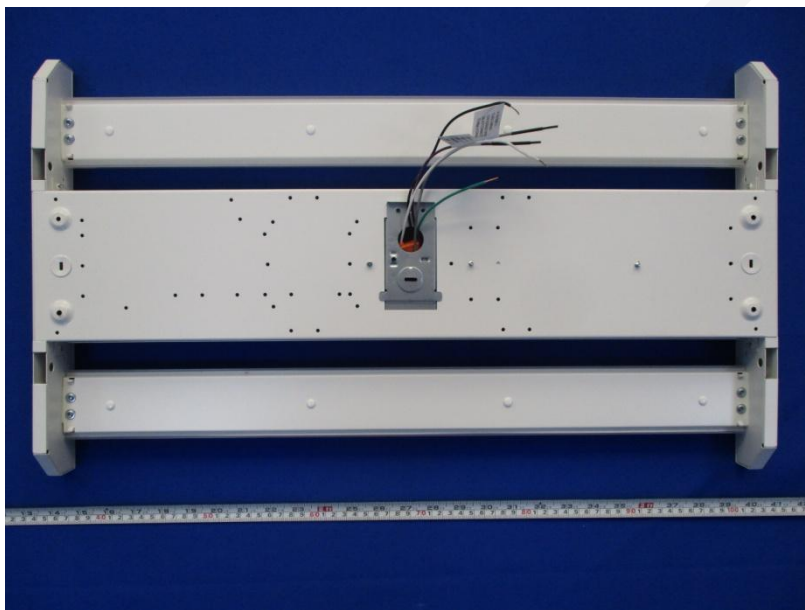
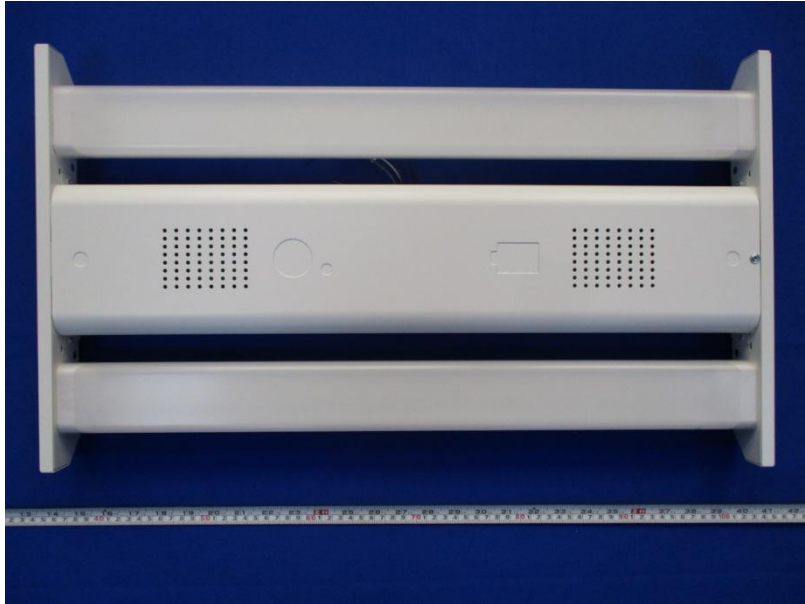
Test Model	Rated Voltage (V)	Rated Power (W)	Driver Model No.	Test Item			
				Goniophotometer Test	Integrating Sphere Test	THDi and PF Test	ISTMT
LGB2-81/D10/U/30	120-277	81	VDU80CC175V46DL1	/	Yes	Yes	Yes
LGB2-101/D10/U/30	120-277	101	VDU96CC210V46DL1	/	Yes	Yes	Yes
LGB2-101/347/D10/W/30	120-347	101	SDC96CC210V46DL1	/	Yes	Yes	Yes
LGB2-141/D10/U/30	120-277	141	VDU60CC150V40DL3	Yes	Yes	Yes	Yes
LGB2-161/D10/U/30	120-277	161	VDU80CC175V46DL1	/	Yes	Yes	Yes
LGB2-161/347/D10/W/30	120-347	161	SDC80CC175V46DL1	/	Yes	Yes	Yes
LGB2-201/D10/U/30	120-277	201	VDU96CC210V46DL1	/	Yes	Yes	Yes

### 3. Product Photo

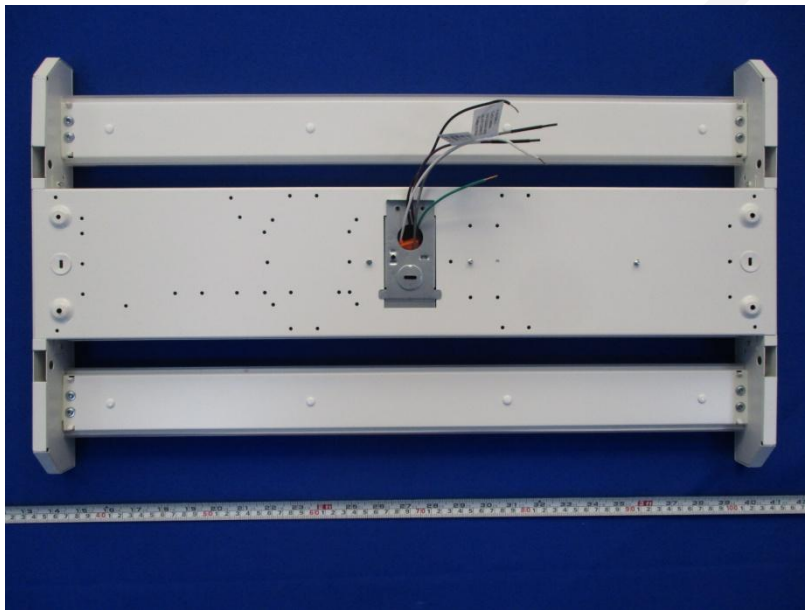
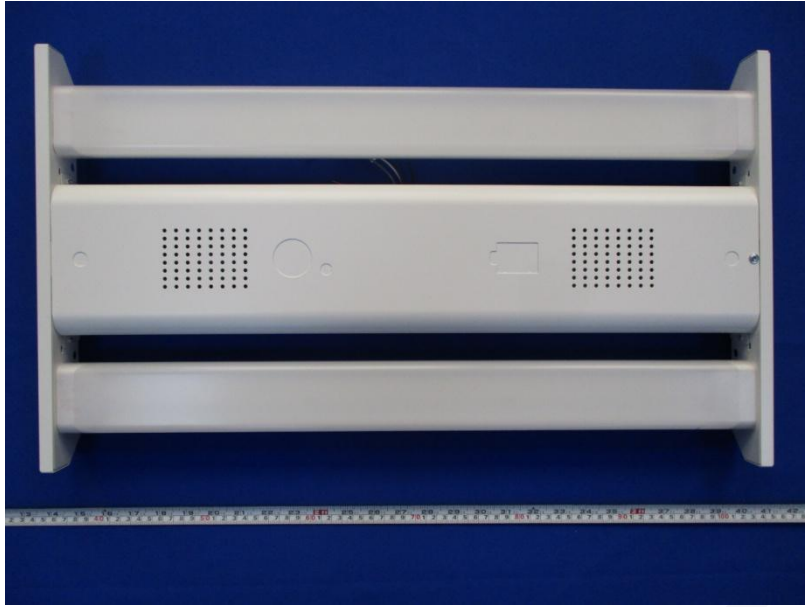
Product photo of model: LGB2-81/D10/U/30



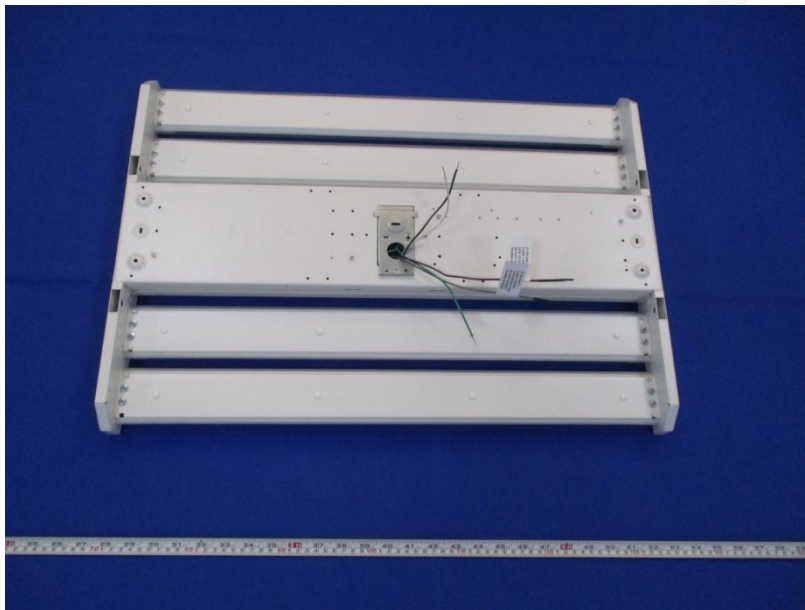
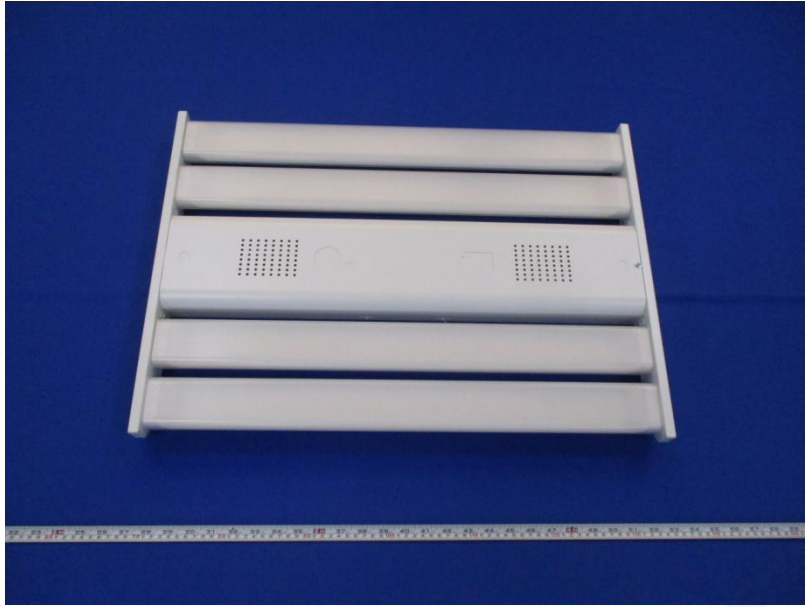
Product photo of model: LGB2-101/D10/U/30



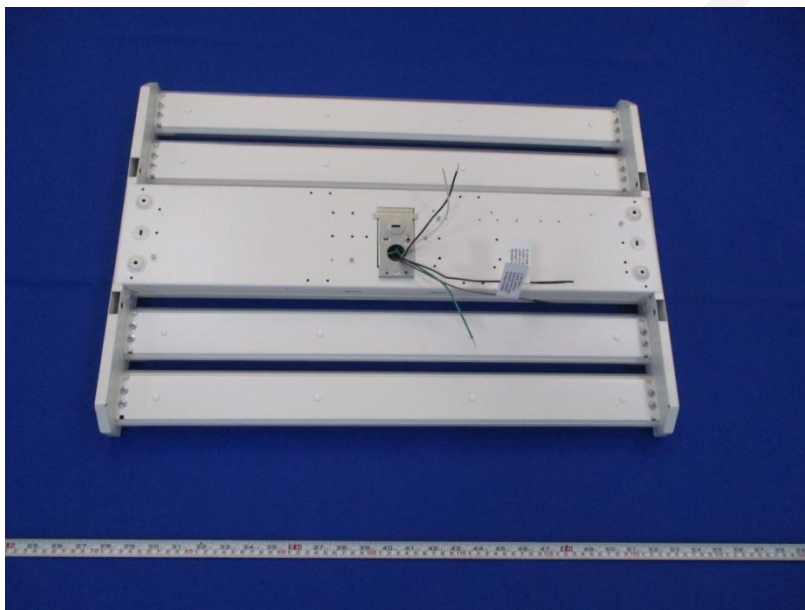
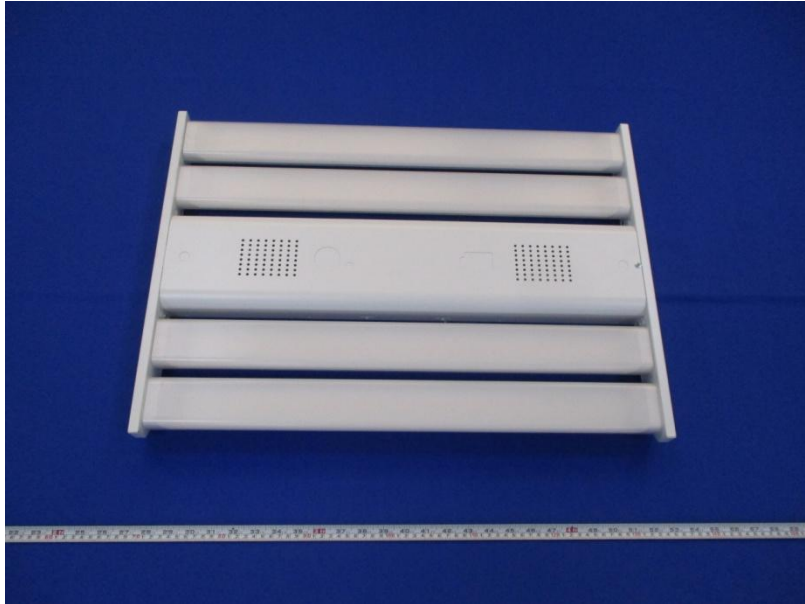
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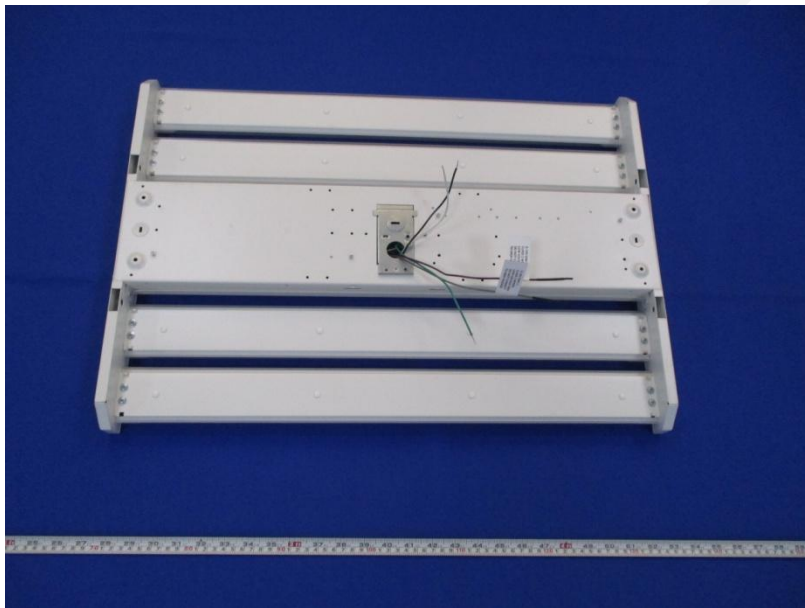
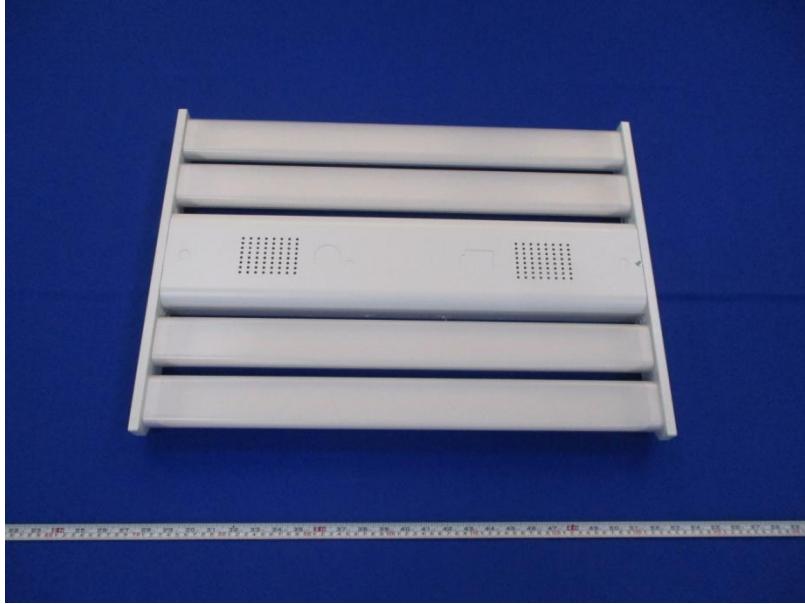
Product photo of model: LGB2-141/D10/U/30



Product photo of model: LGB2-161/D10/U/30

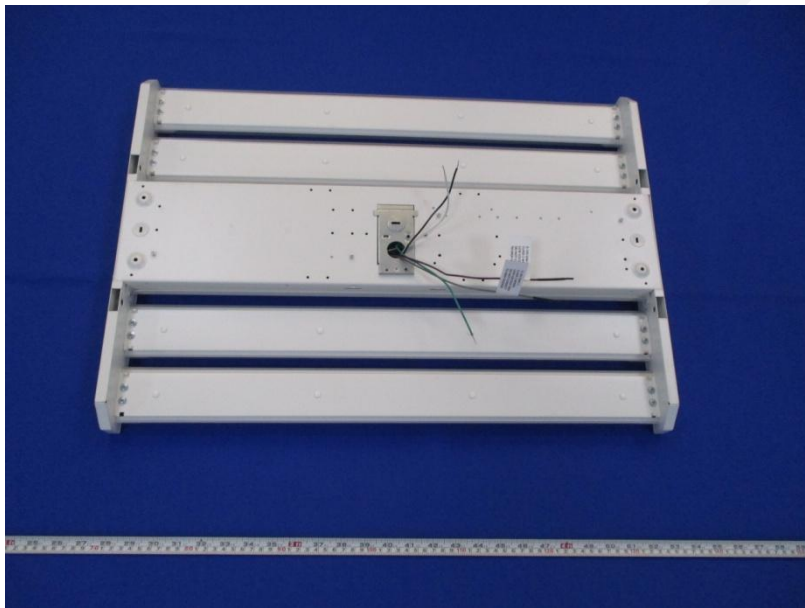
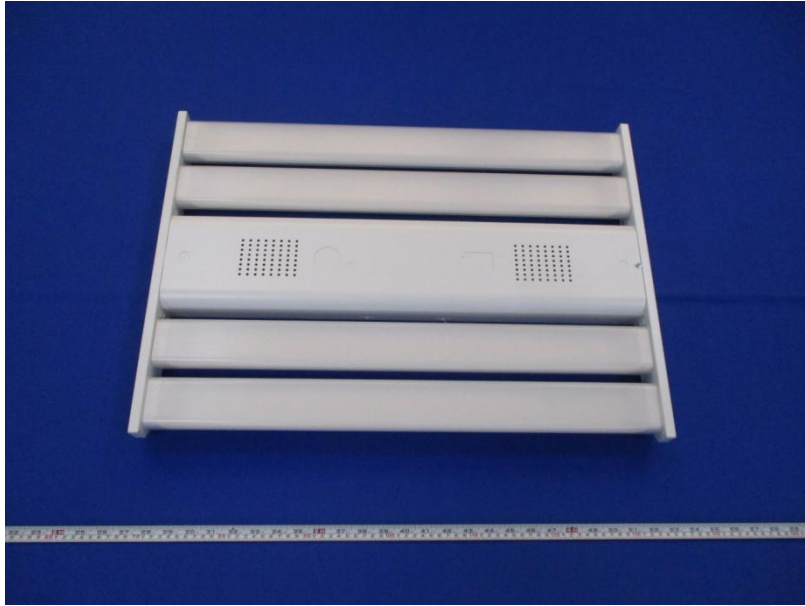


Product photo of model: LGB2-161/347/D10/W/30





Product photo of model: LGB2-201/D10/U/30



#### 4. Test Result

Test Model: LGB2-81/D10/U/30

Integrating Sphere Test; Orientation: Downward; Test Voltage: 120V 60Hz;

Test Item	Test Result	DLC Requirements	DLC Requirements(With tolerances and/or allowances)	Conclusion
Light Output(lm)	10672	≥10000	≥9000	Pass
Power(W)	77.61	None.	None.	N/A
Total Efficacy(lm/W)	137.5	≥130	≥122.317	Pass
CCT(K)	2948	2870~3220	2870~3220	Pass
Duv	-0.00066	-0.0059~0.0061	-0.0059~0.0061	Pass
R <sub>a</sub>	80.1	≥70	≥68	Pass
R <sub>r</sub>	80	None.	None.	N/A
R <sub>g</sub>	96	None.	None.	N/A

THDi、PF Test; Orientation: Downward;

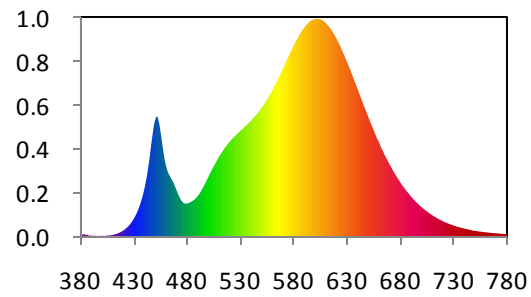
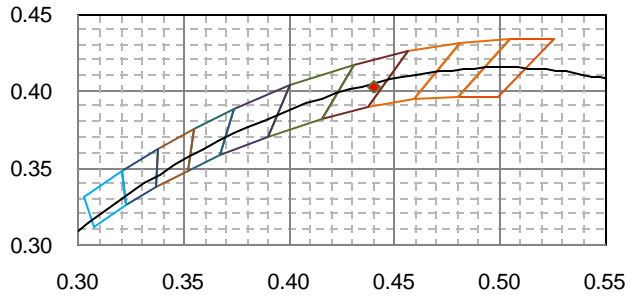
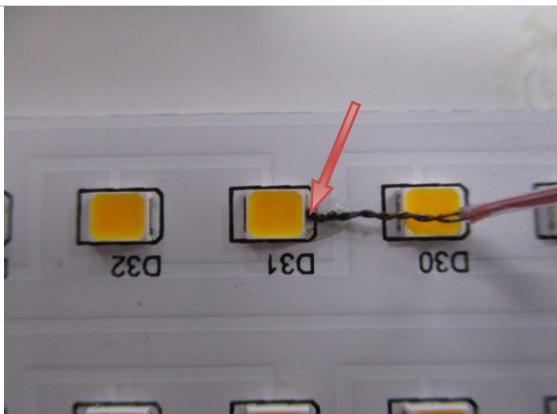
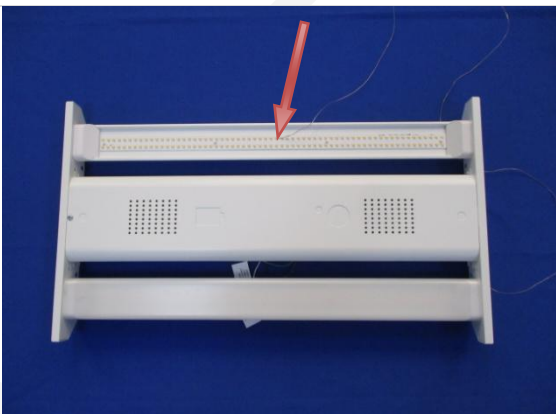
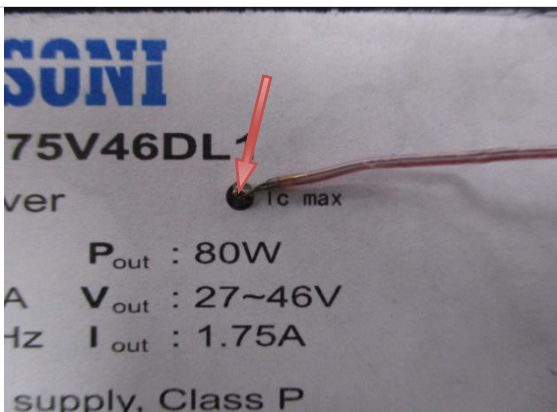
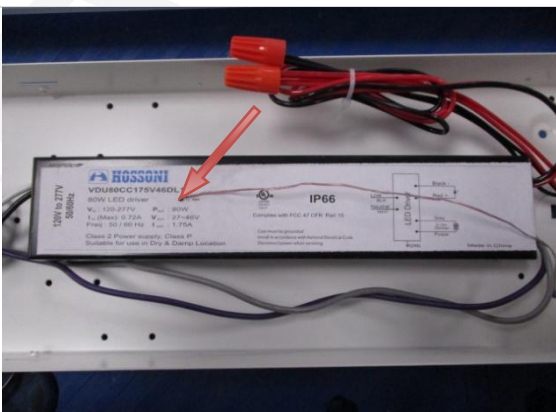
Test Voltage	Test Item	Test Result	DLC Requirements	DLC Requirements(With tolerances and/or allowances)	Conclusion
120	Power Factor	0.9948	≥0.9	≥0.87	Pass
120	THDi	7.05%	≤20%	≤25%	Pass
277	Power Factor	0.9653	≥0.9	≥0.87	Pass
277	THDi	9.34%	≤20%	≤25%	Pass

In-Situ Temperature Measurement Test: Test Voltage: 120V 60Hz;

Test Item	Test Result	DLC Requirements	DLC Requirements(With tolerances and/or allowances)	Conclusion
TMP <sub>LED</sub> (°C)	65.5	≤105	With tolerance of ≤ 1.1°C or 0.4%, whichever is greater due to thermocouple tolerance	Pass
TMP <sub>c</sub> (°C)	41	≤90	With tolerance of ≤ 1.1°C or 0.4%, whichever is greater due to thermocouple tolerance	Pass
Drive Current/Individual LED source(mA)	98	≤150	With +5% tolerance	Pass
TM-21 Projected Lumen Maintenance at 50000hours	88.64%	L <sub>70</sub> Life≥50000	L <sub>70</sub> Life≥50000	Pass
L <sub>70</sub> Lumen Maintenance Life (Hours)	>54000			
L <sub>90</sub> Lumen Maintenance Life (Hours)	44000	>36000	>36000	Pass

Note:

- The test results were measured directly from the test equipment.
- The DLC requirements were listed according to DLC Technical Requirements V4.4.
- The conclusion is for reference only. Test report that indicate product performance meets DLC Technical Requirements do not represent official DLC product qualification. All decisions regarding product qualification are made by the DLC.

<p style="text-align: center;">Spectral Power Distribution</p> 	<p style="text-align: center;">7-Step Chromaticity Quadrangles</p> 
<p style="text-align: center;">TMP<sub>LED</sub>(Zoomed-in View)</p> 	<p style="text-align: center;">TMP<sub>LED</sub>(Bird's-eye View)</p> 
<p style="text-align: center;">TMP<sub>c</sub>(Zoomed-in View)</p>  <p>SONI 75V46DL ver P<sub>out</sub> : 80W A V<sub>out</sub> : 27~46V Hz I<sub>out</sub> : 1.75A supply, Class P</p>	<p style="text-align: center;">TMP<sub>c</sub> (Bird's-eye View)</p>  <p>ROSSONI VD88CC175V46DL 80W LED Driver V<sub>in</sub> 120-277V P<sub>in</sub> 80W V<sub>out</sub> 27-46V I<sub>out</sub> 1.75A Freq 50/60 Hz f<sub>sw</sub> 1.75A Class B Power Factor Class P Suitable for use in Dry &amp; Damp Location IP66 LED Driver Made in China</p>

**Test Model: LGB2-101/D10/U/30**

**Integrating Sphere Test; Orientation: Downward; Test Voltage: 120V 60Hz;**

Test Item	Test Result	DLC Requirements	DLC Requirements(With tolerances and/or allowances)	Conclusion
Light Output(lm)	12787	≥10000	≥9000	Pass
Power(W)	93.24	None.	None.	N/A
Total Efficacy(lm/W)	137.14	≥130	≥122.317	Pass
CCT(K)	2966	2870~3220	2870~3220	Pass
Duv	-0.00064	-0.0059~0.0061	-0.0059~0.0061	Pass
R <sub>a</sub>	80	≥70	≥68	Pass
R <sub>r</sub>	80	None.	None.	N/A
R <sub>g</sub>	96	None.	None.	N/A

**THDi, PF Test; Orientation: Downward;**

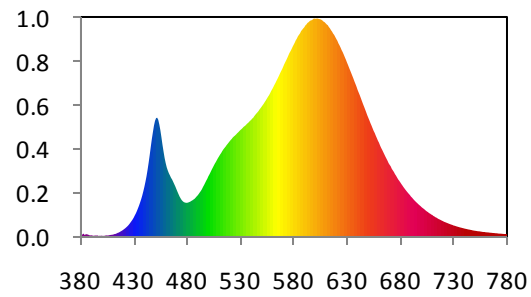
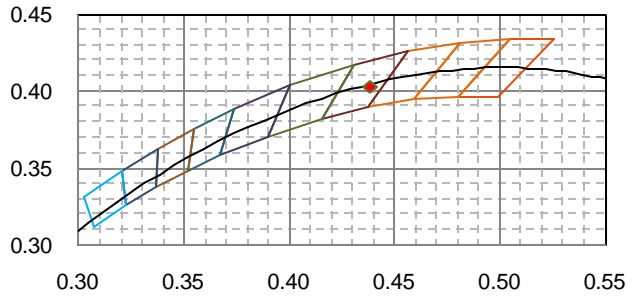
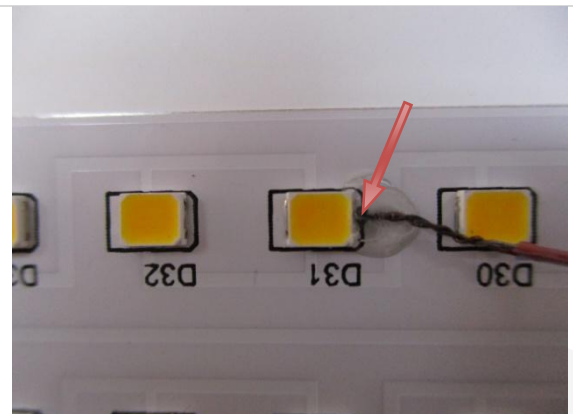
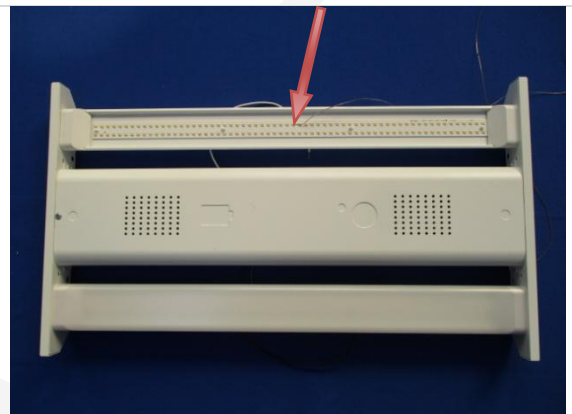


Test Voltage	Test Item	Test Result	DLC Requirements	DLC Requirements(With tolerances and/or allowances)	Conclusion
120	Power Factor	0.9982	≥0.9	≥0.87	Pass
120	THDi	3.05%	≤20%	≤25%	Pass
277	Power Factor	0.942	≥0.9	≥0.87	Pass
277	THDi	9.02%	≤20%	≤25%	Pass

**In-Situ Temperature Measurement Test; Test Voltage: 120V 60Hz;**

Test Item	Test Result	DLC Requirements	DLC Requirements(With tolerances and/or allowances)	Conclusion
TMP <sub>LED</sub> (°C)	70.5	≤105	With tolerance of ≤ 1.1°C or 0.4%, whichever is greater due to thermocouple tolerance	Pass
TMP <sub>c</sub> (°C)	54.7	≤90	With tolerance of ≤ 1.1°C or 0.4%, whichever is greater due to thermocouple tolerance	Pass
Drive Current/Individual LED source(mA)	116	≤150	With +5% tolerance	Pass
TM-21 Projected Lumen Maintenance at 50000hours	87.81%	L <sub>70</sub> Life≥50000	L <sub>70</sub> Life≥50000	Pass
L <sub>70</sub> Lumen Maintenance Life (Hours)	>54000			
L <sub>90</sub> Lumen Maintenance Life (Hours)	41000	>36000	>36000	Pass

**Note:**

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- The DLC requirements were listed according to DLC Technical Requirements V4.4.
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<p style="text-align: center;">Spectral Power Distribution</p> 	<p style="text-align: center;">7-Step Chromaticity Quadrangles</p> 
<p style="text-align: center;">TMP<sub>LED</sub>(Zoomed-in View)</p> 	<p style="text-align: center;">TMP<sub>LED</sub>(Bird's-eye View)</p> 
<p style="text-align: center;">TMP<sub>c</sub>(Zoomed-in View)</p> 	<p style="text-align: center;">TMP<sub>c</sub> (Bird's-eye View)</p> 

**Test Model: LGB2-101/347/D10/W/30**

**Integrating Sphere Test; Orientation: Downward; Test Voltage: 120V 60Hz;**

Test Item	Test Result	DLC Requirements	DLC Requirements(With tolerances and/or allowances)	Conclusion
Light Output(lm)	12834	≥10000	≥9000	Pass
Power(W)	92.05	None.	None.	N/A
Total Efficacy(lm/W)	139.42	≥130	≥122.317	Pass
CCT(K)	2966	2870~3220	2870~3220	Pass
Duv	-0.000823	-0.0059~0.0061	-0.0059~0.0061	Pass
R <sub>a</sub>	80	≥70	≥68	Pass
R <sub>r</sub>	80	None.	None.	N/A
R <sub>g</sub>	96	None.	None.	N/A

**THDi, PF Test; Orientation: Downward;**

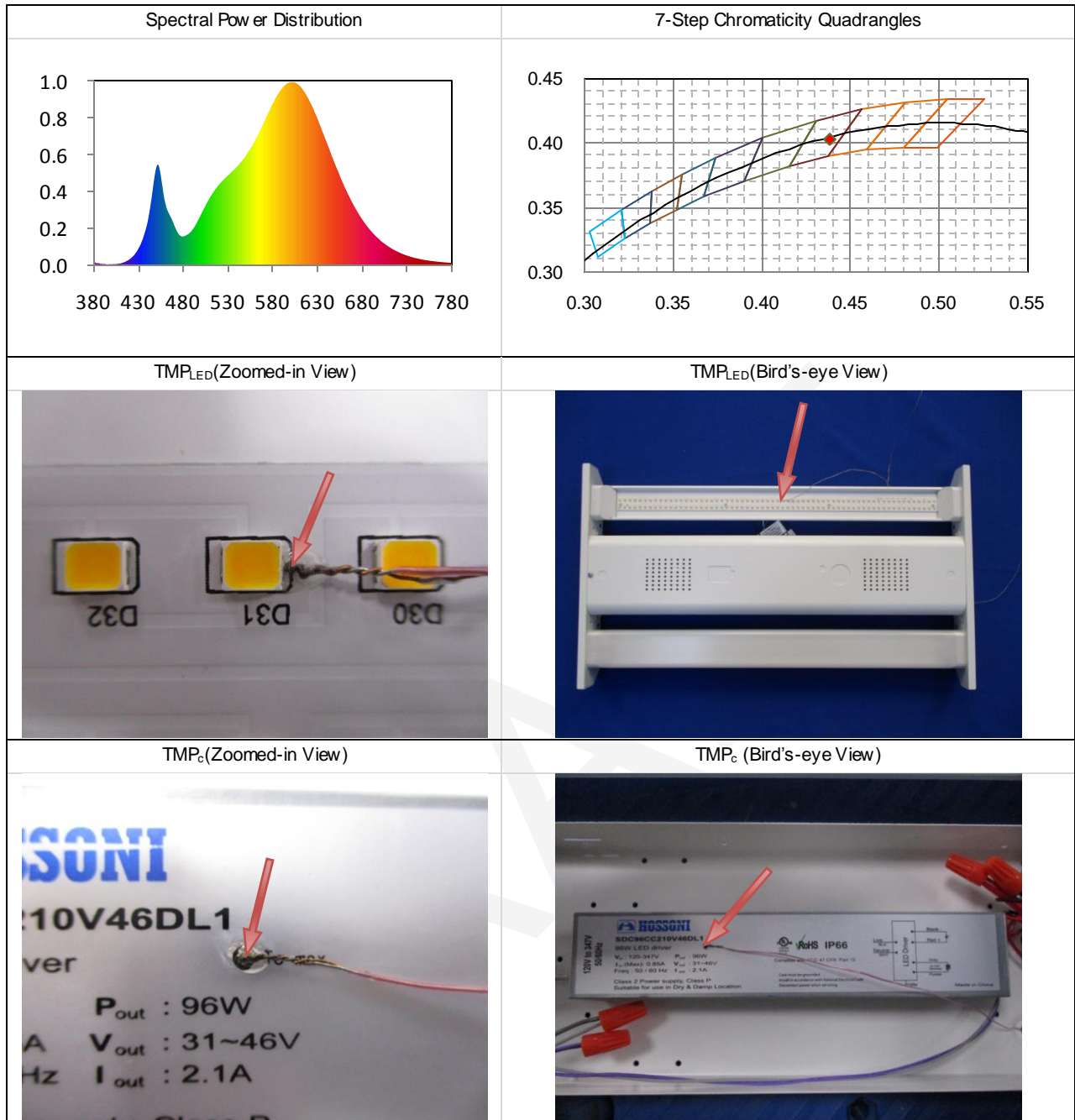
Test Voltage	Test Item	Test Result	DLC Requirements	DLC Requirements(With tolerances and/or allowances)	Conclusion
120	Power Factor	0.9975	≥0.9	≥0.87	Pass
120	THDi	5.39%	≤20%	≤25%	Pass
347	Power Factor	0.917	≥0.9	≥0.87	Pass
347	THDi	7.57%	≤20%	≤25%	Pass

**In-Situ Temperature Measurement Test; Test Voltage: 120V 60Hz;**

Test Item	Test Result	DLC Requirements	DLC Requirements(With tolerances and/or allowances)	Conclusion
TMP <sub>LED</sub> (°C)	74.5	≤105	With tolerance of ≤ 1.1°C or 0.4%, whichever is greater due to thermocouple tolerance	Pass
TMP <sub>c</sub> (°C)	59	≤90	With tolerance of ≤ 1.1°C or 0.4%, whichever is greater due to thermocouple tolerance	Pass
Drive Current/Individual LED source(mA)	118	≤150	With +5% tolerance	Pass
TM-21 Projected Lumen Maintenance at 50000hours	87.61%	L <sub>70</sub> Life≥50000	L <sub>70</sub> Life≥50000	Pass
L <sub>70</sub> Lumen Maintenance Life (Hours)	>54000			
L <sub>90</sub> Lumen Maintenance Life (Hours)	40000	>36000	>36000	Pass

**Note:**

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- The DLC requirements were listed according to DLC Technical Requirements V4.4.
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**Test Model: LGB2-141/D10/U/30**

Integrating Sphere Test; Orientation: Dow nward; Test Voltage: 120V 60Hz;

Test Item	Test Result	DLC Requirements	DLC Requirements(With tolerances and/or allowances)	Conclusion
CCT(K)	2942	2870~3220	2870~3220	Pass
Duv	-0.000734	-0.0059~0.0061	-0.0059~0.0061	Pass
R <sub>a</sub>	80.4	≥70	≥68	Pass
R <sub>r</sub>	81	None.	None.	N/A
R <sub>g</sub>	96	None.	None.	N/A

Goniophotometer Test; Orientation: Dow nward; Test Voltage: 120V 60Hz;

Test Item	Test Result	DLC Requirements	DLC Requirements(With tolerances and/or allowances)	Conclusion
Light Output(lm)	18209.2	≥10000	≥9000	Pass
Power(W)	130.94	None.	None.	N/A
Total Efficacy(lm/W)	139.12	≥130	≥122.317	Pass
Zonal Lumen Distribution (20-50°)	48.39%	20-50°≥30%	20-50°≥20%	Pass

THDi、PF Test; Orientation: Dow nward;

Test Voltage	Test Item	Test Result	DLC Requirements	DLC Requirements(With tolerances and/or allowances)	Conclusion
120	Power Factor	0.9883	≥0.9	≥0.87	Pass
120	THDi	15.20%	≤20%	≤25%	Pass
277	Power Factor	0.9547	≥0.9	≥0.87	Pass
277	THDi	8.47%	≤20%	≤25%	Pass

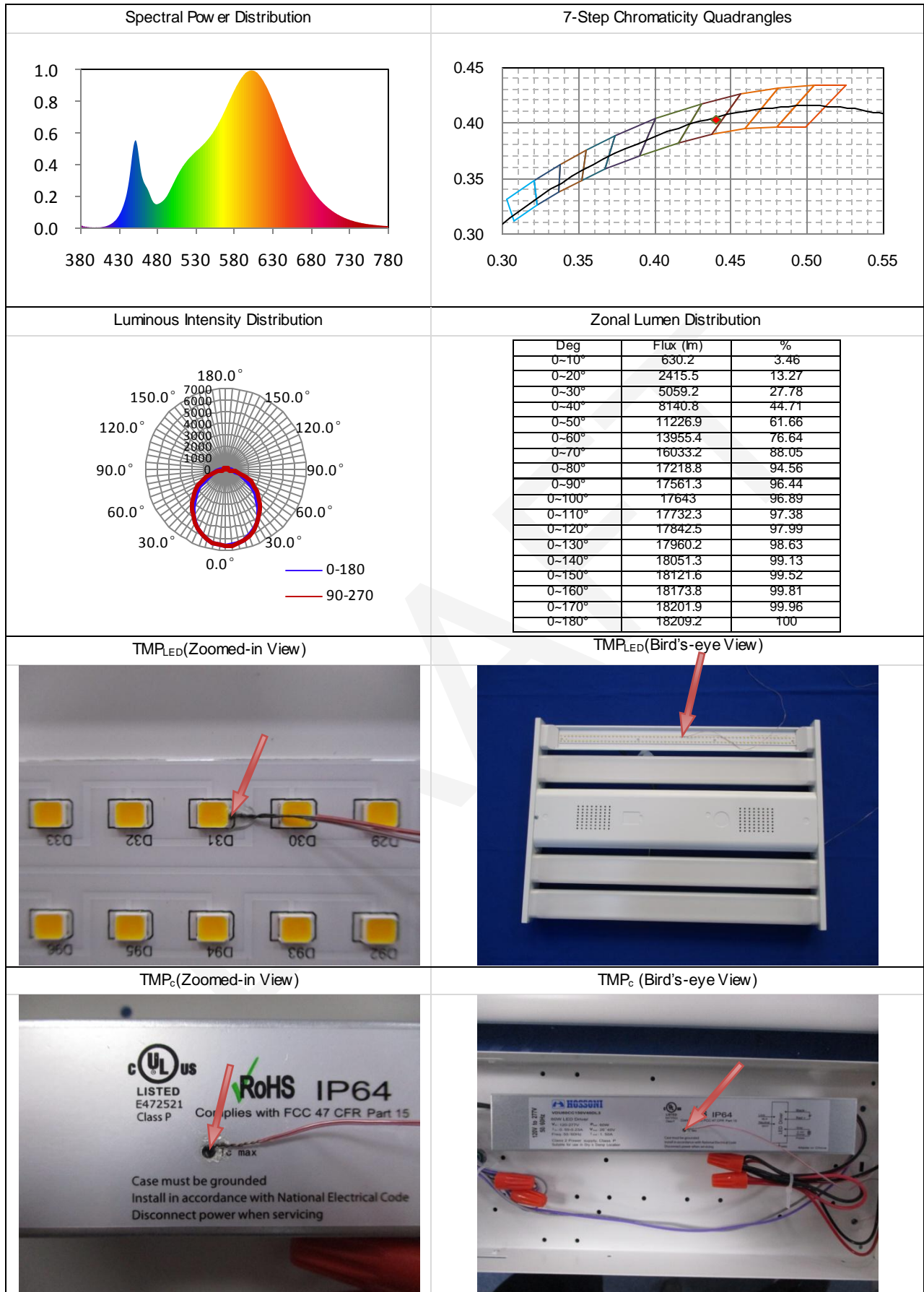
In-Situ Temperature Measurement Test; Test Voltage: 120V 60Hz;

Test Item	Test Result	DLC Requirements	DLC Requirements(With tolerances and/or allowances)	Conclusion
TMP <sub>LED</sub> (°C)	54.8	≤105	With tolerance of ≤ 1.1°C or 0.4%, whichever is greater due to thermocouple tolerance	Pass
TMP <sub>c</sub> (°C)	47.7	≤90	With tolerance of ≤ 1.1°C or 0.4%, whichever is greater due to thermocouple tolerance	Pass
Drive Current/Individual LED source(mA)	83	≤150	With +5% tolerance	Pass
TM-21 Projected Lumen Maintenance at 50000hours	88.64%	L <sub>70</sub> Life≥50000	L <sub>70</sub> Life≥50000	Pass
L <sub>70</sub> Lumen Maintenance Life (Hours)	>54000			
L <sub>90</sub> Lumen Maintenance Life (Hours)	44000			

Note:

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**Test Model: LGB2-161/D10/U/30**

Integrating Sphere Test; Orientation: Downward; Test Voltage: 120V 60Hz;

Test Item	Test Result	DLC Requirements	DLC Requirements(With tolerances and/or allowances)	Conclusion
Light Output(lm)	20814	≥10000	≥9000	Pass
Power(W)	151.1	None.	None.	N/A
Total Efficacy(lm/W)	137.71	≥130	≥122.317	Pass
CCT(K)	2966	2870~3220	2870~3220	Pass
Duv	-0.00113	-0.0059~0.0061	-0.0059~0.0061	Pass
R <sub>a</sub>	80.1	≥70	≥68	Pass
R <sub>r</sub>	80	None.	None.	N/A
R <sub>g</sub>	96	None.	None.	N/A

THDi, PF Test; Orientation: Downward;

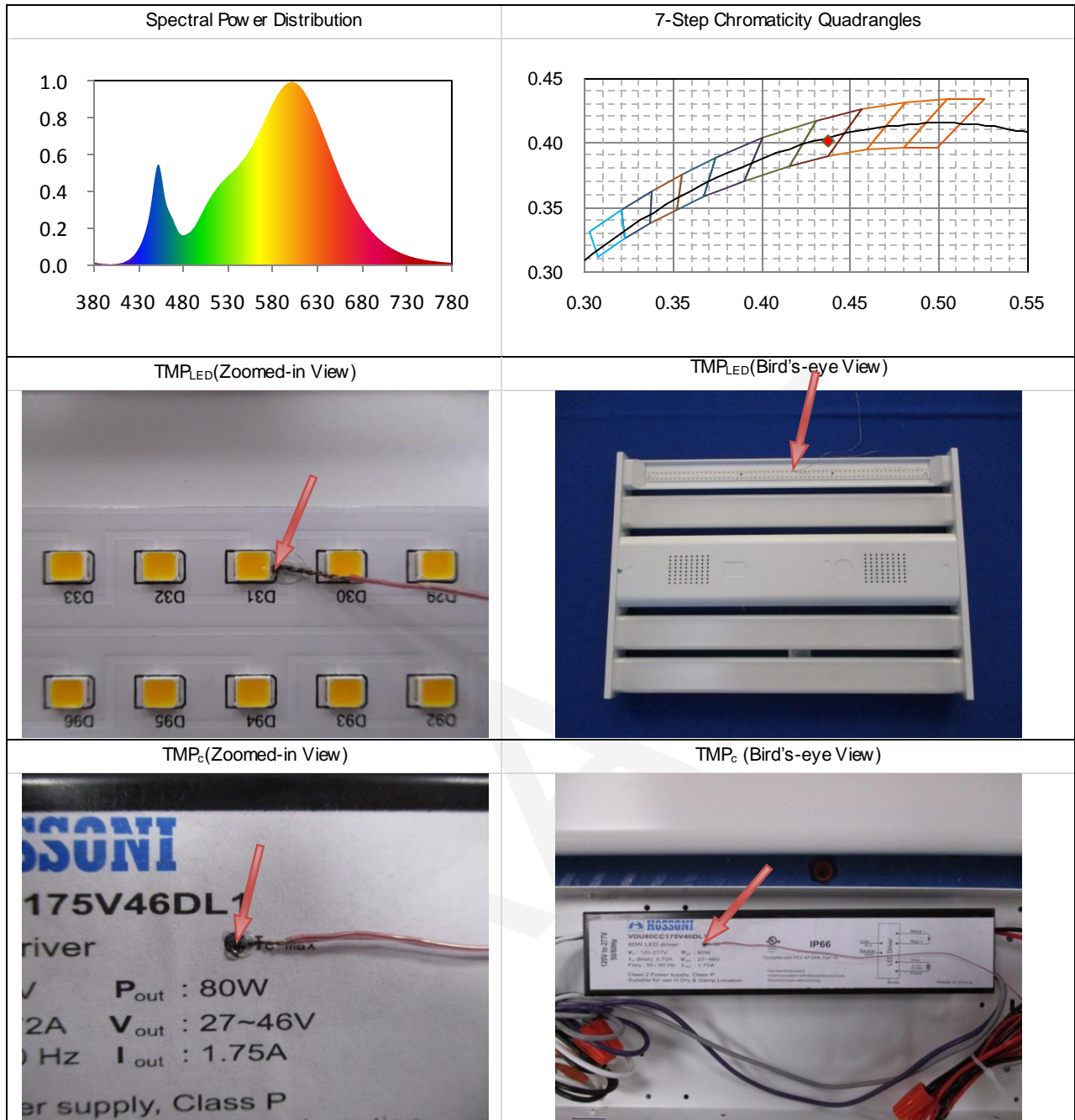
Test Voltage	Test Item	Test Result	DLC Requirements	DLC Requirements(With tolerances and/or allowances)	Conclusion
120	Power Factor	0.9949	≥0.9	≥0.87	Pass
120	THDi	8.51%	≤20%	≤25%	Pass
277	Power Factor	0.9746	≥0.9	≥0.87	Pass
277	THDi	11.46%	≤20%	≤25%	Pass

In-Situ Temperature Measurement Test; Test Voltage: 120V 60Hz;

Test Item	Test Result	DLC Requirements	DLC Requirements(With tolerances and/or allowances)	Conclusion
TMP <sub>LED</sub> (°C)	65.9	≤105	With tolerance of ≤ 1.1°C or 0.4%, whichever is greater due to thermocouple tolerance	Pass
TMP <sub>c</sub> (°C)	47.5	≤90	With tolerance of ≤ 1.1°C or 0.4%, whichever is greater due to thermocouple tolerance	Pass
Drive Current/Individual LED source(mA)	98	≤150	With +5% tolerance	Pass
TM-21 Projected Lumen Maintenance at 50000hours	88.64%	L <sub>70</sub> Life≥50000	L <sub>70</sub> Life≥50000	Pass
L <sub>70</sub> Lumen Maintenance Life (Hours)	>54000			
L <sub>90</sub> Lumen Maintenance Life (Hours)	44000	>36000	>36000	Pass

Note:

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**Test Model: LGB2-161/347/D10/W/30**

**Integrating Sphere Test; Orientation: Downward; Test Voltage: 120V 60Hz;**

Test Item	Test Result	DLC Requirements	DLC Requirements(With tolerances and/or allowances)	Conclusion
Light Output(lm)	20921	≥10000	≥9000	Pass
Power(W)	151.4	None.	None.	N/A
Total Efficacy(lm/W)	138.2	≥130	≥122.317	Pass
CCT(K)	2955	2870~3220	2870~3220	Pass
Duv	-0.000874	-0.0059~0.0061	-0.0059~0.0061	Pass
R <sub>a</sub>	80.2	≥70	≥68	Pass
R <sub>r</sub>	80	None.	None.	N/A
R <sub>g</sub>	96	None.	None.	N/A

**THDi, PF Test; Orientation: Downward;**

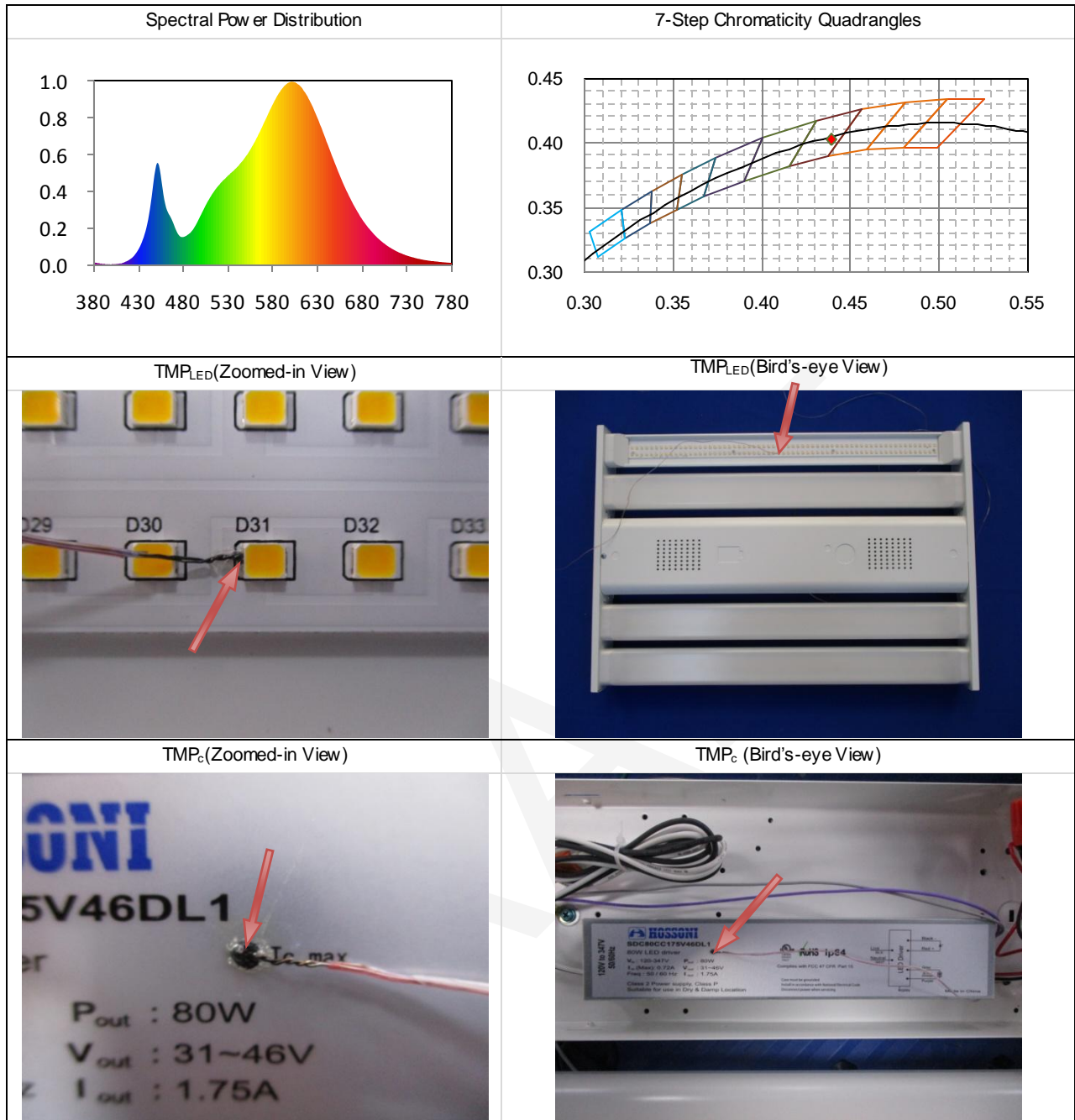
Test Voltage	Test Item	Test Result	DLC Requirements	DLC Requirements(With tolerances and/or allowances)	Conclusion
120	Power Factor	0.9842	≥0.9	≥0.87	Pass
120	THDi	13.75%	≤20%	≤25%	Pass
347	Power Factor	0.9583	≥0.9	≥0.87	Pass
347	THDi	15.92%	≤20%	≤25%	Pass

**In-Situ Temperature Measurement Test; Test Voltage: 120V 60Hz;**

Test Item	Test Result	DLC Requirements	DLC Requirements(With tolerances and/or allowances)	Conclusion
TMP <sub>LED</sub> (°C)	69.2	≤105	With tolerance of ≤ 1.1°C or 0.4%, whichever is greater due to thermocouple tolerance	Pass
TMP <sub>c</sub> (°C)	53.4	≤90	With tolerance of ≤ 1.1°C or 0.4%, whichever is greater due to thermocouple tolerance	Pass
Drive Current/Individual LED source(mA)	98	≤150	With +5% tolerance	Pass
TM-21 Projected Lumen Maintenance at 50000hours	87.87%	L <sub>70</sub> Life≥50000	L <sub>70</sub> Life≥50000	Pass
L <sub>70</sub> Lumen Maintenance Life (Hours)	>54000			
L <sub>90</sub> Lumen Maintenance Life (Hours)	41000	>36000	>36000	Pass

**Note:**

- The test results were measured directly from the test equipment.
- The DLC requirements were listed according to DLC Technical Requirements V4.4.
- The conclusion is for reference only. Test report that indicate product performance meets DLC Technical Requirements do not represent official DLC product qualification. All decisions regarding product qualification are made by the DLC.



**Test Model: LGB2-201/D10/U/30**

Integrating Sphere Test; Orientation: Downward; Test Voltage: 120V 60Hz;

Test Item	Test Result	DLC Requirements	DLC Requirements(With tolerances and/or allowances)	Conclusion
Light Output(lm)	25624	≥10000	≥9000	Pass
Power(W)	191.5	None.	None.	N/A
Total Efficacy(lm/W)	133.81	≥130	≥122.317	Pass
CCT(K)	2955	2870~3220	2870~3220	Pass
Duv	-0.000957	-0.0059~0.0061	-0.0059~0.0061	Pass
R <sub>a</sub>	80.1	≥70	≥68	Pass
R <sub>r</sub>	80	None.	None.	N/A
R <sub>g</sub>	96	None.	None.	N/A

THDi, PF Test; Orientation: Downward;

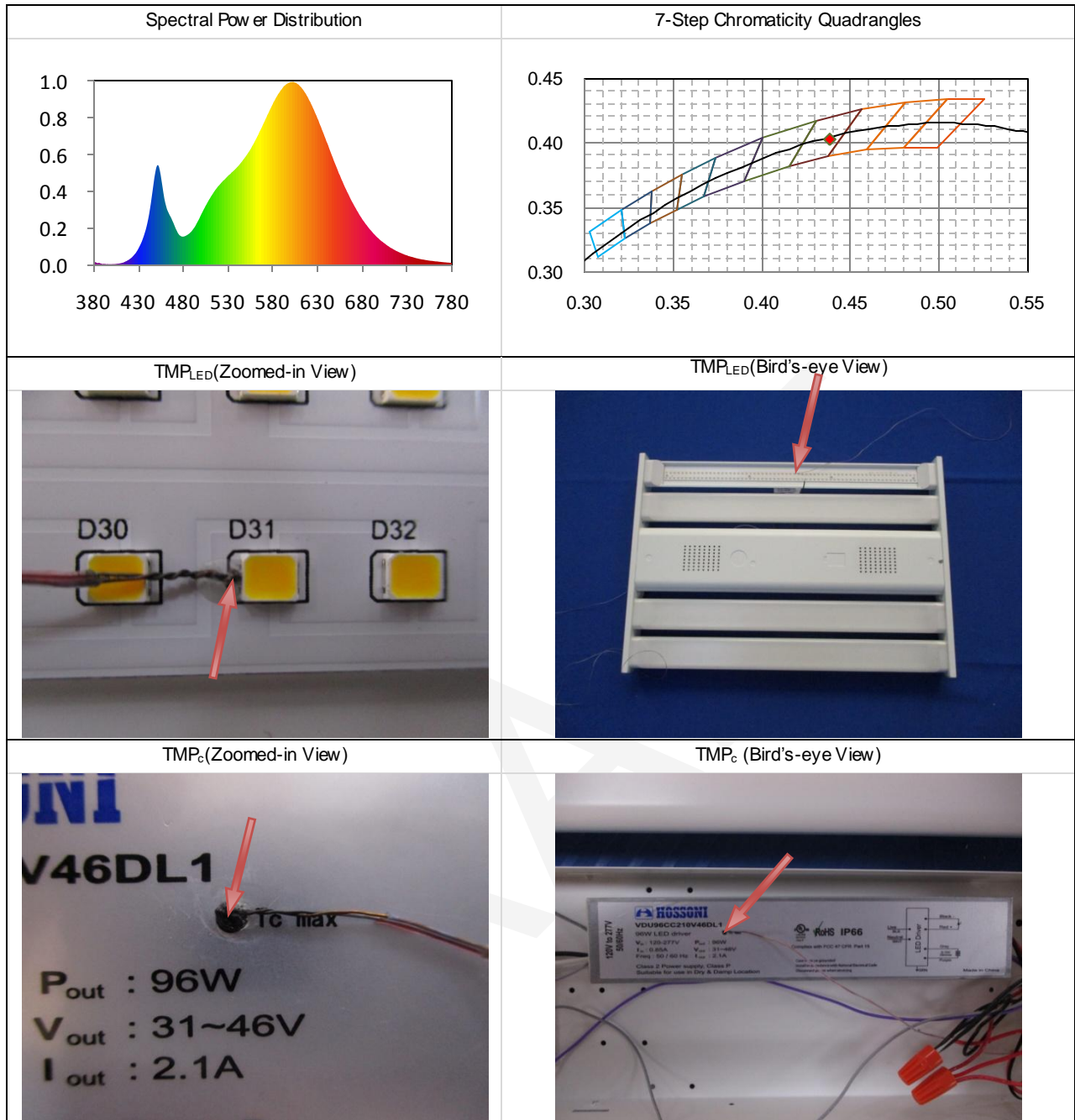
Test Voltage	Test Item	Test Result	DLC Requirements	DLC Requirements(With tolerances and/or allowances)	Conclusion
120	Power Factor	0.9983	≥0.9	≥0.87	Pass
120	THDi	17.60%	≤20%	≤25%	Pass
277	Power Factor	0.9556	≥0.9	≥0.87	Pass
277	THDi	6.25%	≤20%	≤25%	Pass

In-Situ Temperature Measurement Test; Test Voltage: 120V 60Hz;

Test Item	Test Result	DLC Requirements	DLC Requirements(With tolerances and/or allowances)	Conclusion
TMP <sub>LED</sub> (°C)	69.5	≤105	With tolerance of ≤ 1.1°C or 0.4%, whichever is greater due to thermocouple tolerance	Pass
TMP <sub>c</sub> (°C)	56	≤90	With tolerance of ≤ 1.1°C or 0.4%, whichever is greater due to thermocouple tolerance	Pass
Drive Current/Individual LED source(mA)	116	≤150	With +5% tolerance	Pass
TM-21 Projected Lumen Maintenance at 50000hours	87.85%	L <sub>70</sub> Life≥50000	L <sub>70</sub> Life≥50000	Pass
L <sub>70</sub> Lumen Maintenance Life (Hours)	>54000			
L <sub>90</sub> Lumen Maintenance Life (Hours)	41000	>36000	>36000	Pass

Note:

- The test results were measured directly from the test equipment.
- The DLC requirements were listed according to DLC Technical Requirements V4.4.
- The conclusion is for reference only. Test report that indicate product performance meets DLC Technical Requirements do not represent official DLC product qualification. All decisions regarding product qualification are made by the DLC.



5. Description of Test Equipment

Device	Manufacture	Model No	Serial No	Calibration date	Calibration due date
2.0m integrating sphere	EVERFINE	R98	G121960CS1361154D	2018-12-23	2019-12-23
spectroradiometer	EVERFINE	HAAS-2000	M12048CS1361148	2018-12-23	2019-12-23
Digital CC&CV DC Power Supply	EVERFINE	WY305	G115986CN1361134	2019-02-02	2020-02-02
Temperature/humidity/dock	KEJIAN	TA298	EE053	2018-12-01	2019-12-01
Standard Light Source	EVERFINE	D215S	G119786CS1361115	2018-12-07	2019-12-07
Digital Power Meter	YOKOGAWA	WT210	91KB35700	2018-04-16	2019-04-16
Intelligence ac power supply	EVERFINE	DPS1005	G119890CS1361121	2019-02-02	2020-02-02
AC Power Supply	INVENTFINE	CHP-5KVA	900511765	2018-04-08	2019-04-08
DC Power Supply	INVENTFINE	WL3010	JWDMP030001	2018-04-08	2019-04-08
Power Meter	INVENTFINE	WT500	GSDSQ200007	2018-04-08	2019-04-08
Goniophotometer	INVENTFINE	GPM-1900	YWGCF120001	2019-01-24	2020-01-24
Wireless Weather Station	ZHONGXING	KG218	N/A	2018-12-01	2019-12-01
Standard Light Source	INVENTFINE	N/A	JWBYSR040008	2019-01-24	2020-01-24
Digital Multimeter	FLUKE	115C	37840512WS	2018-09-06	2019-09-06
Hybrid Recorder	YOKOGAWA	DR230	4TJH0903	2018-04-08	2019-04-08
Power Supply	SC	SC/BP-11003	1608110030553	2018-11-30	2019-11-30

Statement of Traceability: Bay Area Compliance Laboratories Corp. (Kunshan) attested that all calibration has been performed using suitable standards traceable to National Primary Standards and International System of Units (SI).

6. Test Method

Product was tested with no seasoning. All stabilization and measurements were made in compliance with IES LM-79-08. The ambient temperature of the sample was maintained at 25°C±1°C during measurement. And relative humidity is less than 65%.The product was operated in its intended orientation in application during all testing.

**Integrating Sphere System**

The system includes AC power source, digital power meter, DC power supply, Spectroradiometer, and integrating sphere. The integrating sphere system is calibrated by standard spectrum light source before measurement. 4π geometry was used during measurement.

**Goniophotometer System**

Type C goniophotometer was used for measuring luminous intensity distribution. The vertical angle (γ) test intervals were set no more than 1 degree while data for 5 degree intervals is reported. The horizontal angle (C plane) test intervals were set no more than 22.5 degree.

\*\*\*\*\*END OF REPORT\*\*\*\*\*