



# REPORT

545 E. Algonquin Rd., Arlington Heights, IL 60005

Project No. G103157522

Date: February 15, 2018

REPORT NO. 103157522CHI-032

TEST OF ONE 300W HIGH BAY LUMINAIRE

MODEL NO. HBUD-50K300W  
LED MODEL NO. PHILIPS 3030  
DRIVER MODEL NO. MEAN WELL

RENDERED TO

SUPER BRIGHT LEDS  
4400 EARTH CITY EXP  
EARTH CITY, MO 63045

TEST: Electrical and Photometric tests as required to the IESNA test standard.

AUTHORIZATION: The testing performed was authorized by signed quote number Qu-00800853-0.

STANDARDS USED: The following American National Standards or Illuminating Engineering Society of North America Test Guides were used in part or totally to test each specimen:

IESNA LM-79 - 2008: Electrical and Photometric Measurements of Solid State Lighting

ANSI NEMA ANSLG C78.377: 2012: Specifications of the Chromaticity of Solid State Lighting Products

DESCRIPTION OF SAMPLE: The client submitted one production sample of model number HBUD-50K300W. The sample was received by Intertek on February 8, 2018, in undamaged condition and one sample was tested as received. The sample designation was AH02082018033253-032.

DATES OF TESTS: February 13, 2018 through February 15, 2018.

---

This report is for the exclusive use of Intertek's Client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this report. Only the Client is authorized to copy or distribute this report and then only in its entirety. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek. The observations and test results in this report are relevant only to the sample tested. This report by itself does not imply that the material, product, or service is or has ever been under an Intertek certification program.



SUMMARY

Model No.: HBUD-50K300W  
 Description: 300W High Bay Luminaire

Criteria	Result	
	Sphere	Goniometer
Total Lumen Output (Lumens)	38657	37233
Total Power (W)	308.0	307.9
Luminaire Efficacy (LPW)	125.5	120.9

Criteria	Result
Power Factor	0.998
Current ATHD %	2.47
Correlated Color Temperature (CCT - K)	5177
Color Rendering Index (CRI - Ra)	84.3
Color Rendering Index (CRI - R9)	16.4
DUV	0.001
Chromaticity Coordinate (x)	0.340
Chromaticity Coordinate (y)	0.351
Chromaticity Coordinate (u')	0.208
Chromaticity Coordinate (v')	0.484

EQUIPMENT LIST

Equipment Used	Model Number	Control Number	Last Date Calibrated	Calibration Due Date	Date Used
Yokogawa Power Meter	WT210	146919	07/10/17	07/10/18	02/15/18
Omega Newport Thermometer	DPI8-C24	146920	10/04/17	10/04/18	02/15/18
LSI High Speed Mirror Goniometer	6440T	146928	VBU	VBU	02/15/18
Newport Thermohygrometer	iServer	146382	03/22/17	03/22/18	02/15/18
Pacific, AC power supply	118-ACX	CHI0358	VBU	VBU	02/15/18
Labsphere Spectroradiometer	CDS1100	CHI0091	VBU	VBU	02/13/18
3 Meter Sphere	SPR600	CHI0088	VBU	VBU	02/13/18
Elgar AC Power Supply	CW1251	146112	VBU	VBU	02/13/18
Sorenson DC Power Supply	XFR150-8	146846	VBU	VBU	02/13/18
Newport Humidity Recorder	iTHX-SD	146961	07/14/17	07/14/18	02/13/18
Yokogawa Power Meter	WT1600	146768	10/03/17	10/03/18	02/13/18
Extech K Temperature Meter	SD200	CHI0207	04/05/17	04/05/18	02/13/18



## TEST METHODS

### Seasoning in Sample Orientation – LED Products

No seasoning was performed in accordance with IESNA LM-79.

### Photometric and Electrical Measurements – Integrating Sphere Method

A Labsphere Model CDS 1100 CCD Array Spectroradiometer and Two Meter or Ten Foot Sphere was used to measure correlated color temperature, chromaticity coordinates, and the color rendering index for each SSL unit.

Ambient temperature was measured at a position inside the sphere. Each SSL unit was operated on the client provided driver at the rated input voltage in its designated orientation. Each SSL unit was allowed to stabilize for at least thirty minutes before measurements were made. Electrical measurements including voltage, current, and power were measured using the Xitron or Yokogawa Power Analyzer.

The calibration of the sphere photometer-spectroradiometer system is traceable to the National Institute of Standards and Technology.

### Photometric and Electrical Measurements – Distribution Method

A LSI Type C High Speed Model 6440 Mirror Goniometer was used to measure the intensity (candelas) at each angle of distribution for each sample.

Ambient temperature was measured equal to the height of the sample mounted on the Goniometer equipment. Each sample was operated at input rated voltage in its designated orientation. Each sample was allowed to stabilize for at least thirty minutes before measurements were made. Electrical measurements including voltage, current, and power were measured using the Xitron or Yokogawa Power Analyzer.

Some graphics were created with Photometrics Plus software.



**RESULTS OF TEST**

**Photometric and Electrical Measurements at Ambient Temperature (25°C +/- 1°C) - Integrating Sphere Method**

Intertek Sample No.	Base Orientation	Input Voltage {Vac}	Input Current (mA)	Input Power (Watts)	Input Power Factor	Current ATHD (%)	Luminous Flux (Lumens)	Lumen Efficacy (LPW)
AH02082018033253-032	UP	120.0	2571	308.0	0.998	2.47	38657	125.5

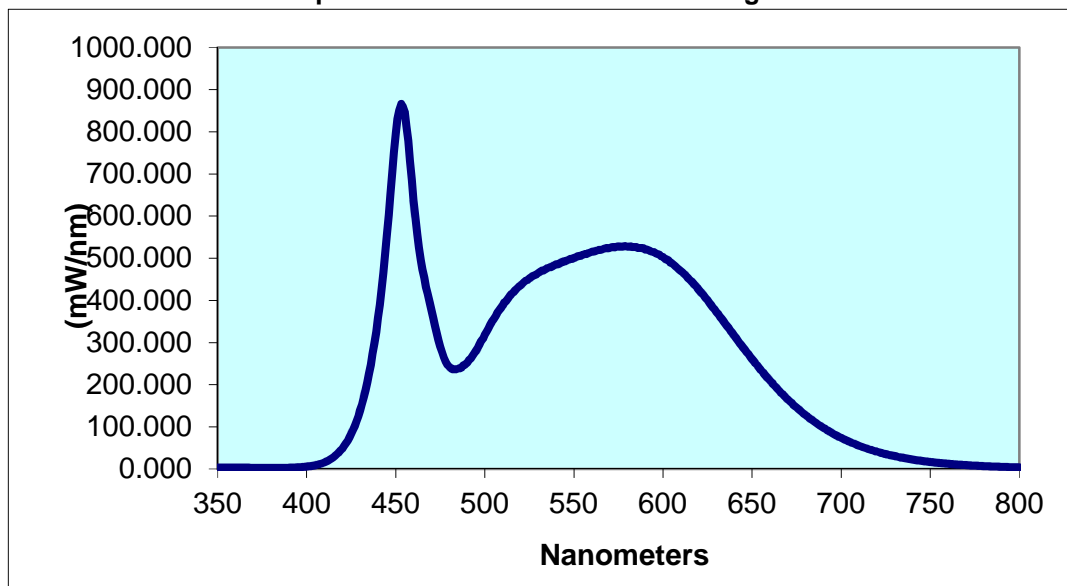
  

Correlated Color Temperature (K)	CRI -Ra	CRI -R9	DUV	CIE 31' Chromaticity Coordinate (x)	CIE 31' Chromaticity Coordinate (y)	CIE 76' Chromaticity Coordinate (u')	CIE 76' Chromaticity Coordinate (v')
5177	84.3	16.4	0.001	0.340	0.351	0.208	0.484

**Spectral Distribution over Visible Wavelengths**

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
350	3.504	440	357.8	530	465.2	620	426.0	710	55.27
355	3.570	445	555.3	535	476.3	625	400.3	715	47.73
360	3.398	450	797.3	540	485.7	630	372.5	720	41.19
365	3.225	455	847.5	545	492.8	635	344.8	725	35.53
370	3.175	460	638.5	550	501.1	640	316.5	730	30.57
375	2.890	465	473.7	555	508.2	645	288.1	735	26.29
380	2.843	470	377.9	560	515.1	650	260.8	740	22.72
385	2.862	475	290.9	565	520.0	655	234.6	745	19.49
390	3.206	480	243.1	570	524.5	660	210.0	750	16.79
395	4.132	485	238.2	575	527.9	665	186.9	755	14.44
400	5.809	490	252.2	580	527.5	670	165.2	760	12.54
405	9.261	495	280.0	585	526.4	675	146.0	765	10.74
410	15.79	500	318.4	590	520.9	680	128.1	770	9.293
415	27.90	505	355.1	595	514.9	685	112.2	775	8.048
420	48.67	510	388.0	600	502.8	690	97.86	780	6.971
425	83.09	515	415.5	605	487.8	695	85.17		
430	138.4	520	435.3	610	470.1	700	73.83		
435	226.2	525	452.2	615	449.2	705	64.01		

**Spectral Data Over Visible Wavelengths**





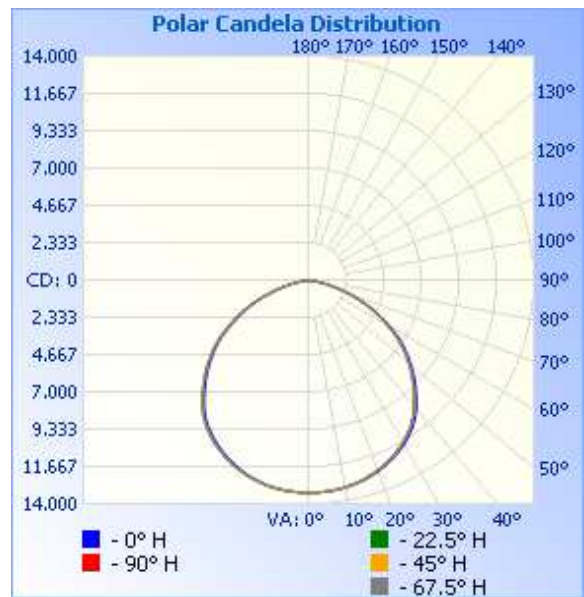
**RESULTS OF TEST** (cont'd)

**Photometric and Electrical Measurements at Ambient Temperature (25°C +/- 1°C) – Distribution Method**

Intertek Sample No.	Base Orientation	Input Voltage {Vac}	Input Current (mA)	Input Power (Watts)	Input Power Factor	Absolute Luminous Flux (Lumens)	Lumen Efficacy (LPW)
AH02082018033253-032	UP	120.0	2572	307.9	0.997	37233	120.9

**Intensity (Candlepower) Summary at 25°C - Candelas**

Angle	0	22.5	45	67.5	90
0	13286	13286	13286	13286	13286
5	13273	13259	13265	13258	13269
10	13177	13148	13151	13142	13152
15	12994	12939	12942	12931	12939
20	12723	12633	12639	12623	12633
25	12342	12231	12226	12216	12220
30	11870	11725	11722	11720	11718
35	11260	11109	11106	11096	11096
40	10446	10238	10229	10228	10230
45	9421	9224	9212	9212	9221
50	8356	8168	8169	8165	8182
55	7230	7036	7043	7041	7049
60	5910	5706	5700	5723	5712
65	4576	4380	4368	4366	4370
70	3175	2985	2982	2977	2969
75	1836	1668	1667	1670	1658
80	737	637	636	633	631
85	118	87	88	89	90
90	5	5	5	6	5
95	5	5	5	5	5
100	5	5	6	5	5
105	6	6	6	6	6
110	7	7	8	8	8
115	8	9	9	9	8
120	10	10	10	10	10
125	11	11	11	11	11
130	13	13	13	13	13
135	16	14	15	15	14
140	18	16	16	16	16
145	19	16	17	17	17
150	20	17	17	17	17
155	20	17	18	18	17
160	19	18	18	18	17
165	19	18	18	18	18
170	19	18	18	18	19
175	19	19	18	19	18
180	18	18	18	18	18



RESULTS OF TEST (cont'd)

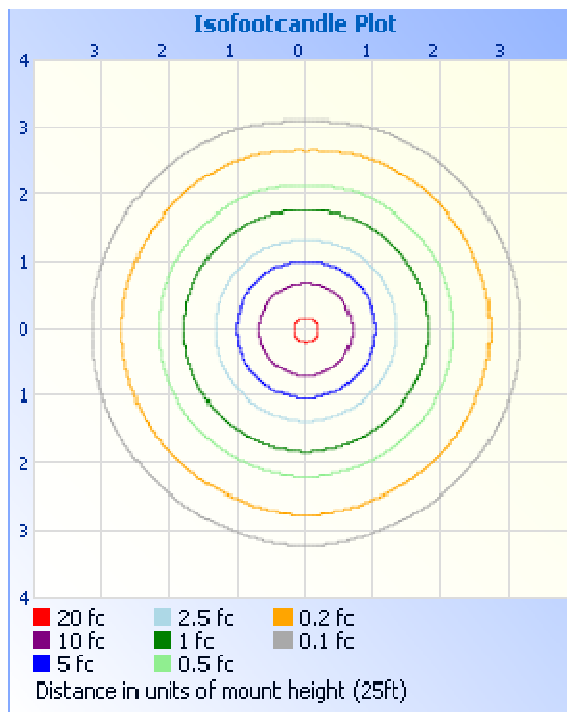
Illumination Plots

Mounting Height: 25 ft.

Illuminance - Cone of Light



Isoillumination Plot



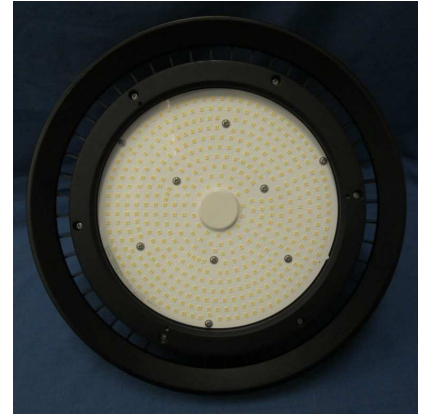
Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens	% Luminaire
0-30	10552	28.3
0-40	17479	46.9
0-60	30856	82.9
60-90	6310	16.9
0-90	37166	99.8
90-180	67.1	0.2
0-180	37233	100.0

Zonal Lumens and Percentages at 25°C

Zone	Lumens	% Luminaire
0-10	1262	3.4
10-20	3654	9.8
20-30	5636	15.1
30-40	6928	18.6
40-50	7117	19.1
50-60	6260	16.8
60-70	4308	11.6
70-80	1810	4.9
80-90	192.7	0.5
90-100	5.4	0.0
100-110	6.7	0.0
110-120	8.6	0.0
120-130	10.1	0.0
130-140	11.1	0.0
140-150	10.3	0.0
150-160	8.0	0.0
160-170	5.1	0.0
170-180	1.8	0.0

PICTURES (not to scale)



CONCLUSION

The results tabulated in this report are representative of the actual test samples submitted for this report only. The data is provided to the client for further evaluation. Compliance to the referenced specification requirements was not determined in this report.

In Charge Of Tests:



Timothy Quigley  
Engineer  
Lighting Division

Attachment: None

Report Reviewed By:



Hector Huitron  
Associate Engineer  
Lighting Division