

Report of Test

LLIA001130-003A

Catalog Number: HEC7MCPENNWNGN

High Bay mounted, cast aluminum housing, white center reflector, clear plastic enclosure.
504 white LEDs, one 1500-HIB-0049-00 RevA LED board with circular white baffles around LEDs.
One LED driver.

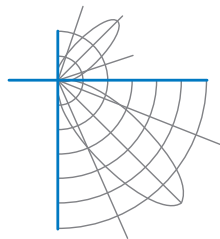
480.0Vac, 60.00Hz, 0.4455A, 212.7W, 0.994PF, 10.2%THD(i)



Performance Summary

Total Light Output	27208 lm
Luminaire Power	212.7 W
Luminous Efficacy	127.9 lm/W

PREPARED FOR : Dialight, 1501 Route 34 South, Farmingdale, NJ 07727, USA



Test Report No. LLIA001130-003A

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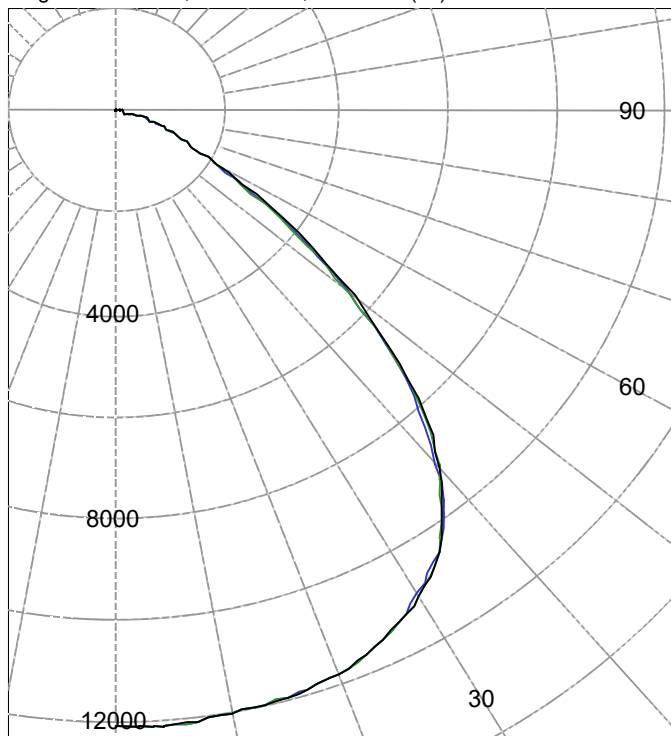
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Legend: C0-Black, C45-Green, C90-Blue (cd)



AVERAGE LUMINANCE (cd / m²)

Gamma	C0	C45	C90
45.0	189497	189665	187531
55.0	115147	112376	111574
65.0	55164	55316	54711
75.0	37974	37834	37388
85.0	12213	12614	12539

INTENSITY SUMMARY (cd)

Gamma	C-Plane					Flux (lm)
	C0	C22.5	C45	C67.5	C90	
0.0	12100	12100	12100	12100	12100	1151
5.0	12080	12082	12082	12084	12081	
10.0	12019	12020	12021	12020	12016	
15.0	11933	11931	11930	11934	11928	3375
20.0	11772	11781	11778	11770	11776	
25.0	11448	11479	11473	11449	11487	
30.0	11017	10970	10998	11005	10942	5283
35.0	10268	10276	10251	10267	10282	
40.0	9146	9077	9077	9093	9031	
45.0	7502	7449	7509	7516	7425	5712
50.0	5651	5525	5518	5631	5452	
55.0	3698	3572	3609	3615	3583	
60.0	2137	2121	2119	2127	2099	1364
65.0	1305	1310	1309	1306	1295	
70.0	924	918	922	921	906	
75.0	550	549	548	548	542	585
80.0	228	226	229	229	223	
85.0	60	60	62	62	61	
90.0	0	0	0	0	0	88

ZONAL FLUX AND PERCENTAGES

Zone	Flux (lm)	% Lamp	% Luminaire
0-30	9810	N / A	36.1
0-40	16183	N / A	59.5
0-60	25171	N / A	92.5
0-90	27208	N / A	100.0
40-90	11025	N / A	40.5
60-90	2037	N / A	7.5
90-180	0	N / A	0.0
0-180	27208	N / A	100.0

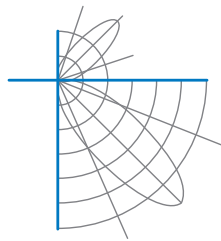
Total Light Output = 27,208 lm

Spacing Criterion: 0-180 1.3
Spacing Criterion: 90-270 1.3

Signed:

Authorized Signatory

Date of test 14-Jun-2019
Date of report 19-Jun-2019



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High Bay mounted, cast aluminum housing, white center reflector, clear plastic enclosure.

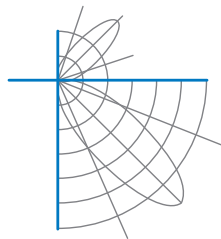
504 white LEDs, one 1500-HIB-0049-00 RevA LED board with circular white baffles around LEDs.

One LED driver.

480.0Vac, 60.00Hz, 0.4455A, 212.7W, 0.994PF, 10.2%THD(i)

Intensity data (cd)

Gamma	C-Plane				
	C0	C22.5	C45	C67.5	C90
0.0	12100	12100	12100	12100	12100
2.5	12098	12096	12094	12098	12092
5.0	12080	12082	12082	12084	12081
7.5	12053	12056	12059	12056	12055
10.0	12019	12020	12021	12020	12016
12.5	11983	11980	11979	11982	11976
15.0	11933	11931	11930	11934	11928
17.5	11866	11866	11866	11866	11864
20.0	11772	11781	11778	11770	11776
22.5	11635	11656	11655	11637	11653
25.0	11448	11479	11473	11449	11487
27.5	11245	11248	11248	11241	11239
30.0	11017	10970	10998	11005	10942
32.5	10724	10656	10687	10714	10646
35.0	10268	10276	10251	10267	10282
37.5	9735	9730	9672	9701	9801
40.0	9146	9077	9077	9093	9031
42.5	8424	8306	8385	8398	8236
45.0	7502	7449	7509	7516	7425
47.5	6582	6486	6484	6601	6528
50.0	5651	5525	5518	5631	5452
52.5	4637	4522	4548	4569	4472
55.0	3698	3572	3609	3615	3583
57.5	2842	2772	2783	2795	2752
60.0	2137	2121	2119	2127	2099
62.5	1635	1625	1633	1634	1620
65.0	1305	1310	1309	1306	1295
67.5	1104	1098	1106	1103	1097
70.0	924	918	922	921	906
72.5	746	734	738	739	723
75.0	550	549	548	548	542
77.5	371	372	369	373	367
80.0	228	226	229	229	223
82.5	128	125	129	129	124
85.0	60	60	62	62	61
87.5	30	30	30	30	30
90.0	0	0	0	0	0



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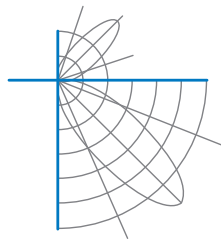
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One LED driver.

480.0Vac, 60.00Hz, 0.4455A, 212.7W, 0.994PF, 10.2%THD(i)

Intensity data (cd)					
Gamma	C-Plane				
	C0	C22.5	C45	C67.5	C90
90.0	0	0	0	0	0
92.5	0	0	0	0	0
95.0	0	0	0	0	0
97.5	0	0	0	0	0
100.0	0	0	0	0	0
102.5	0	0	0	0	0
105.0	0	0	0	0	0
107.5	0	0	0	0	0
110.0	0	0	0	0	0
112.5	0	0	0	0	0
115.0	0	0	0	0	0
117.5	0	0	0	0	0
120.0	0	0	0	0	0
122.5	0	0	0	0	0
125.0	0	0	0	0	0
127.5	0	0	0	0	0
130.0	0	0	0	0	0
132.5	0	0	0	0	0
135.0	0	0	0	0	0
137.5	0	0	0	0	0
140.0	0	0	0	0	0
142.5	0	0	0	0	0
145.0	0	0	0	0	0
147.5	0	0	0	0	0
150.0	0	0	0	0	0
152.5	0	0	0	0	0
155.0	0	0	0	0	0
157.5	0	0	0	0	0
160.0	0	0	0	0	0
162.5	0	0	0	0	0
165.0	0	0	0	0	0
167.5	0	0	0	0	0
170.0	0	0	0	0	0
172.5	0	0	0	0	0
175.0	0	0	0	0	0
177.5	0	0	0	0	0
180.0	0	0	0	0	0



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Coefficients Of Utilization - Zonal Cavity Method

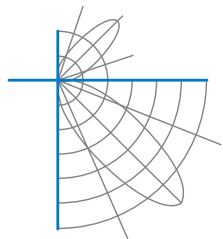
Effective Floor Cavity Reflectance 0.20

RC RW	80				70				50			30			10			0
	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	111	107	104	101	109	105	102	99	101	98	96	97	95	93	94	92	90	89
2	103	96	90	86	100	94	89	85	91	87	83	88	84	81	85	82	79	77
3	95	86	79	74	93	85	78	73	82	76	72	79	75	71	77	73	70	68
4	88	78	70	64	86	76	69	64	74	68	63	72	66	62	70	65	61	59
5	82	70	62	56	80	69	62	56	67	61	56	65	60	55	64	59	54	53
6	76	64	56	50	74	63	55	50	61	54	49	60	54	49	58	53	49	47
7	71	58	50	45	69	57	50	45	56	49	44	55	49	44	53	48	44	42
8	66	53	46	40	64	53	45	40	51	45	40	50	44	40	49	44	39	38
9	62	49	42	36	60	49	41	36	48	41	36	46	40	36	46	40	36	34
10	58	45	38	33	57	45	38	33	44	38	33	43	37	33	42	37	33	31

For absolute test reports, CUs are expressed as a percentage of total lumen output. Calculations were based on published IES procedures, and are based on the zonal cavity method. Basic assumptions: 1) Room surfaces are lambertian reflectors. 2) Incident flux on each surface is uniformly distributed. 3) The room is spectrally neutral. When luminaires are not evenly distributed throughout the room, or do not exhibit lateral symmetry, CU values may differ from actual performance.

Circle of Light Plot

Height(ft)	Illuminance at Nadir (fc)	Beam Width (across 50% Nadir Illum)	
		0-180	90-270
6.0	336.1	8.01	7.99
8.0	189.1	10.68	10.65
10.0	121.0	13.36	13.31
12.0	84.0	16.03	15.98
14.0	61.7	18.70	18.64
16.0	47.3	21.37	21.30



Test Report No. LLIA001130-003A

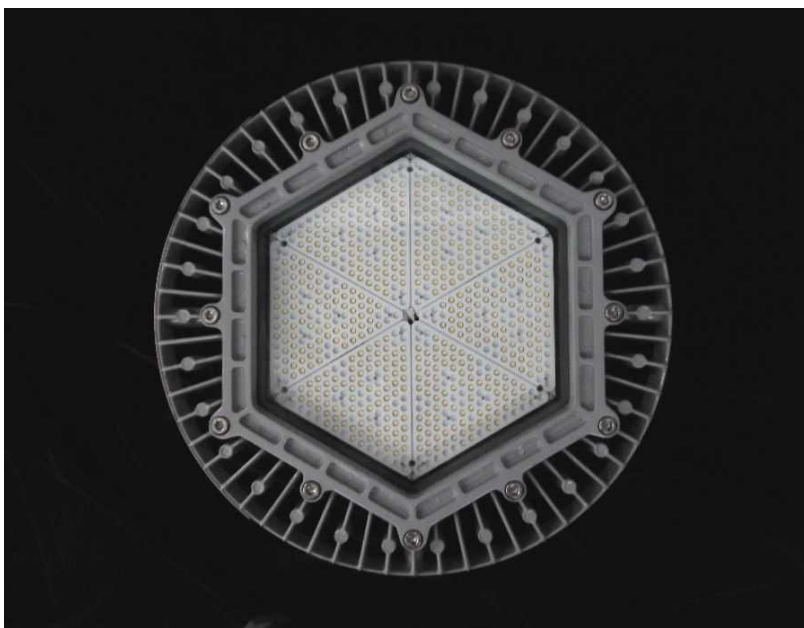
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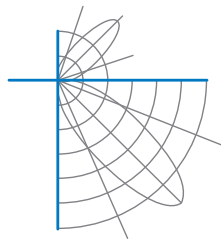
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Test Distance 9.5 m
Test Temperature 25.6 °C

Notes

The laboratory has not participated in the selection of samples to be tested. All testing is performed on the understanding that the significance of the report is limited to the extent that the test sample is representative of production units.

Tested in accordance with the applicable sections of publications: IES LM-79-08 (Sec. 12), IES LM-16-93, IES LM-58-13, CIE 13.3:1995, CIE 15:2004, ANSI C78.377:2017, ANSI C82.77-10:2014.

The luminous intensity values, and other derived quantities, contained in this report are based on the absolute data, as measured.

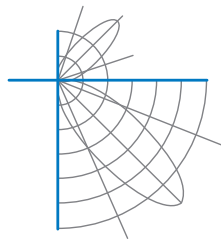
Prorating the performance of the sample for the use of other component combinations (such as lamp / LED / Ballast / driver), or for use in different environmental conditions than that tested, may produce erroneous results.

This report is free of erasures and corrections.

Photometric intensity values are reported using the CIE Gamma coordinate system as defined in CIE publication number 121.

This report may contain data that are not covered by the NVLAP accreditation. Quantities marked with * are not covered.

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



Report of Test

LLIA001130-003B

Integrating Sphere Report

Catalog Number: HEC7MCPENNWNGN

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Performance Summary

Voltage	480.0 Vac
Current	0.4419 A
Power	210.3 W
Frequency	59.97 Hz
Power Factor	0.994
Current THD	10.3 %
Total Luminous Flux	27854.7 lm
Efficacy	132.5 lm/W
Chromaticity (x,y)	(0.3434, 0.3547)
(u',v')	(0.2091, 0.4859)
Duv	0.0022
CCT	5074 K
CRI (Ra)	83
R9	4
TM-30: Rf	81
TM-30: Rg	94

Prepared For:

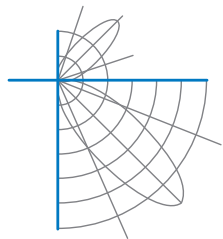
Dialight

1501 Route 34 South

Farmingdale, NJ 07727, USA

Test date: 06/14/2019

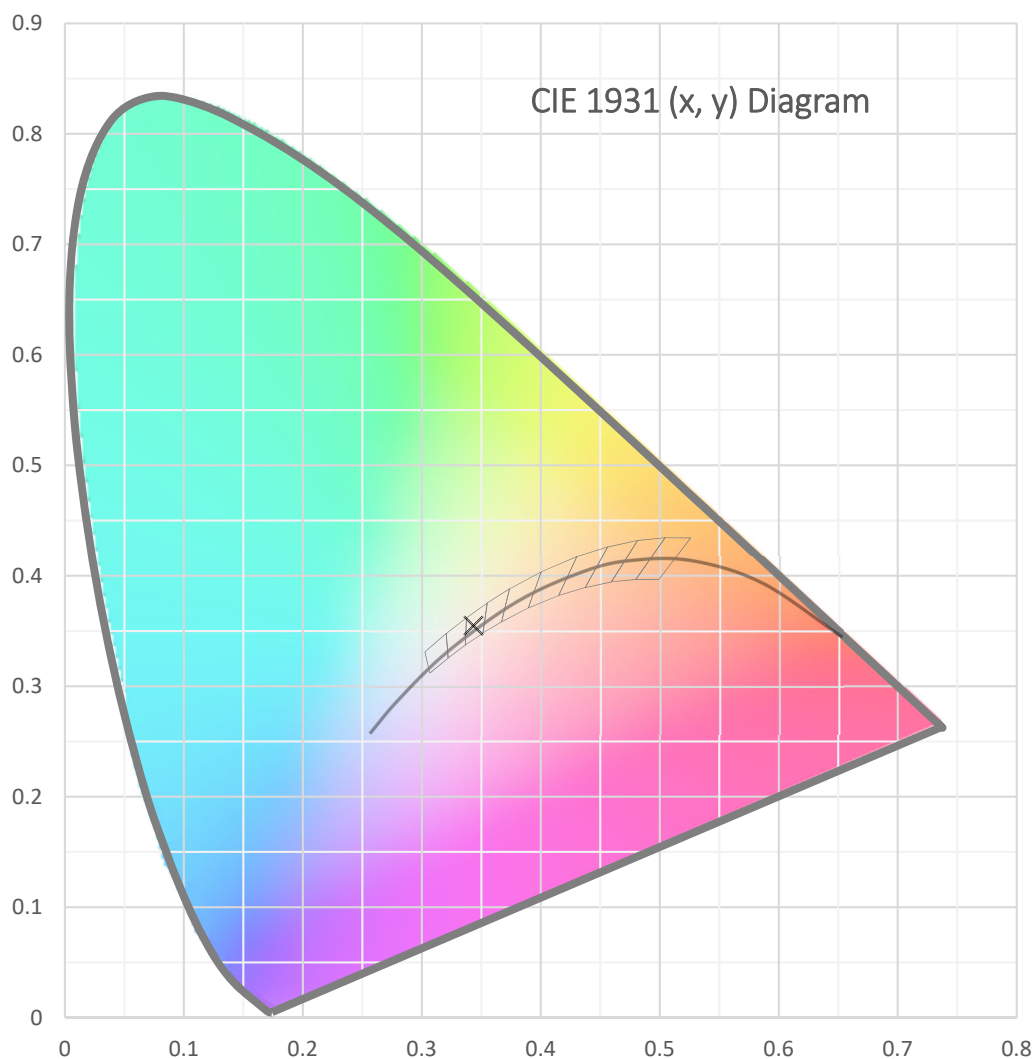
Report date: 06/19/2019

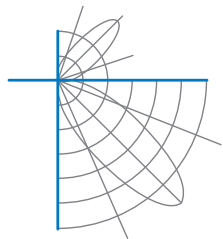


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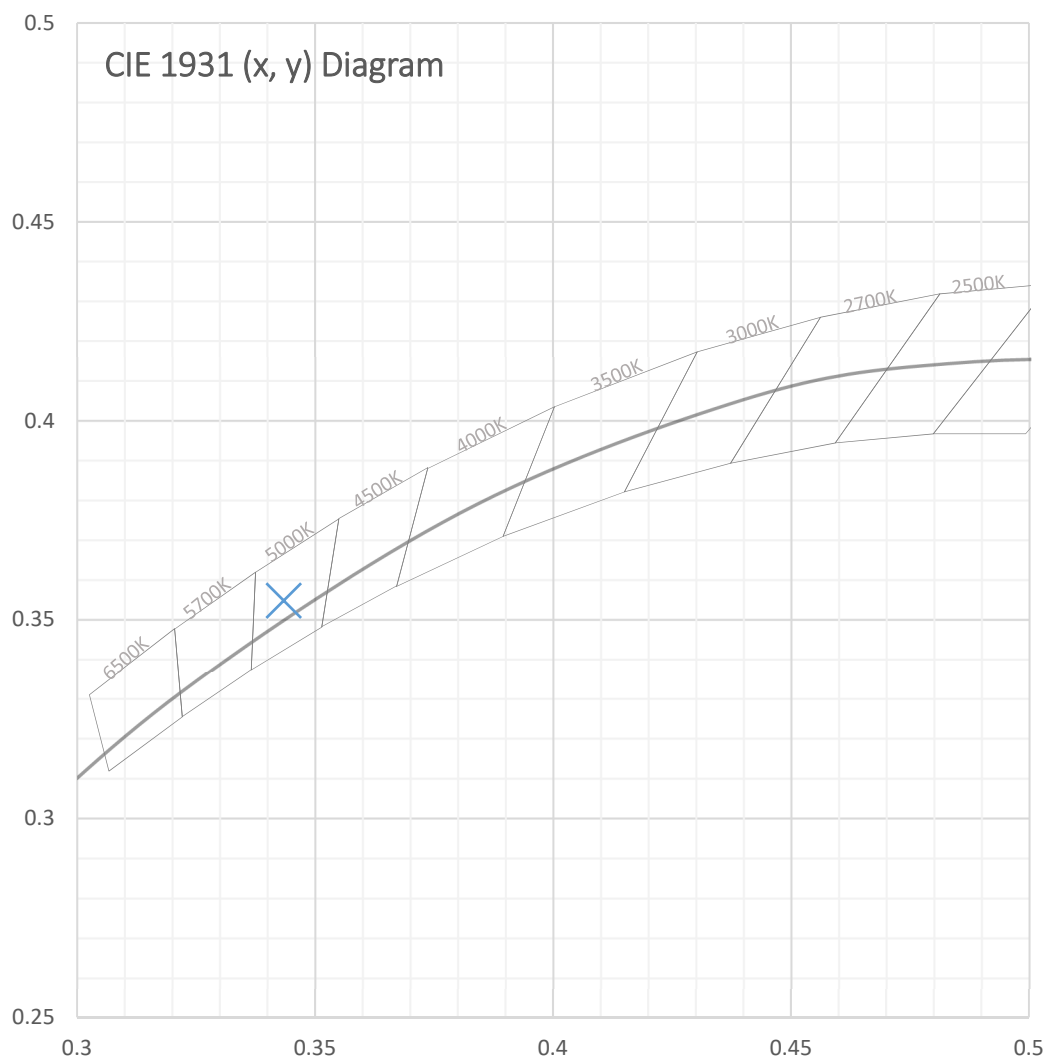


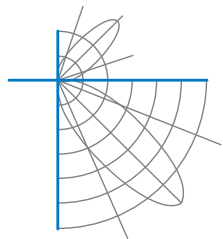


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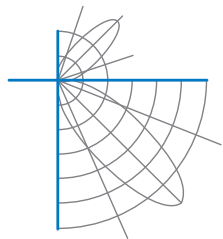
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Spectral Data

Total Radiant Flux	86.70 W
Total Luminous Flux	27854.7 Lm
Chromaticity CIE 1931 (x, y)	(0.3434, 0.3547)
Chromaticity CIE 1976 (u', v')	(0.2091, 0.4859)
Correlated Color Temperature (CCT)	5074 K
Color Rendering Index (Ra)	83
R1	81
R2	88
R3	93
R4	82
R5	81
R6	83
R7	86
R8	66
R9	4
R10	72
R11	81
R12	59
R13	83
R14	96
TM-30: Rf	81
TM-30: Rg	94
Distance from Planckian Locus (Duv)	0.0022
Scotopic/Photopic Ratio *	1.969

Electrical Data

Voltage	480.0 Vac
Current	0.4419 A
Power	210.3 W
Frequency	59.97 Hz
Power Factor	0.994
Current THD	10.3 %



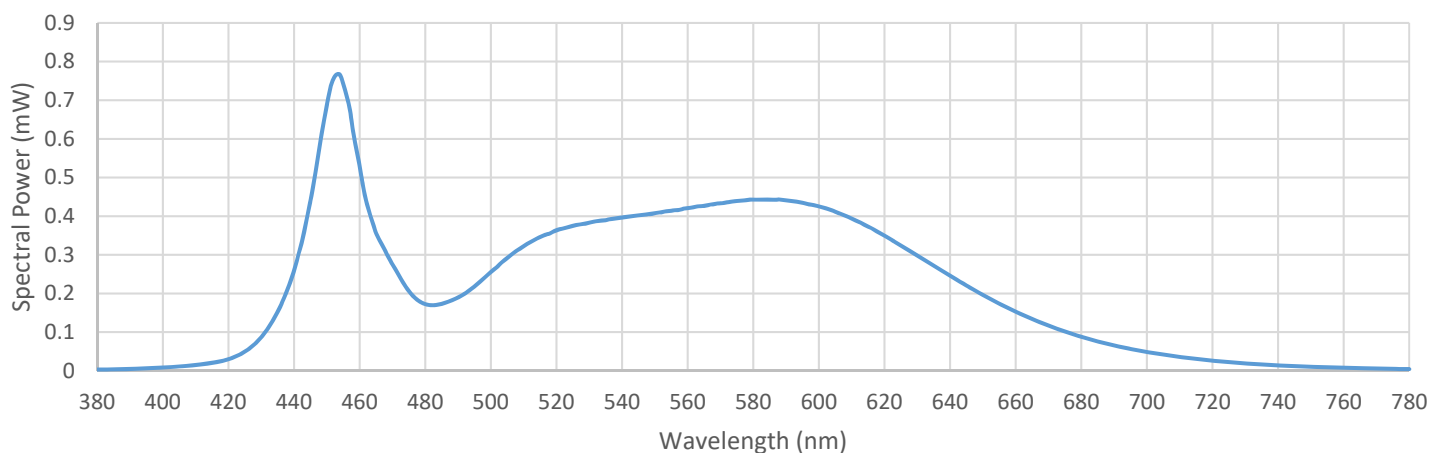
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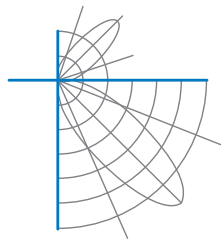
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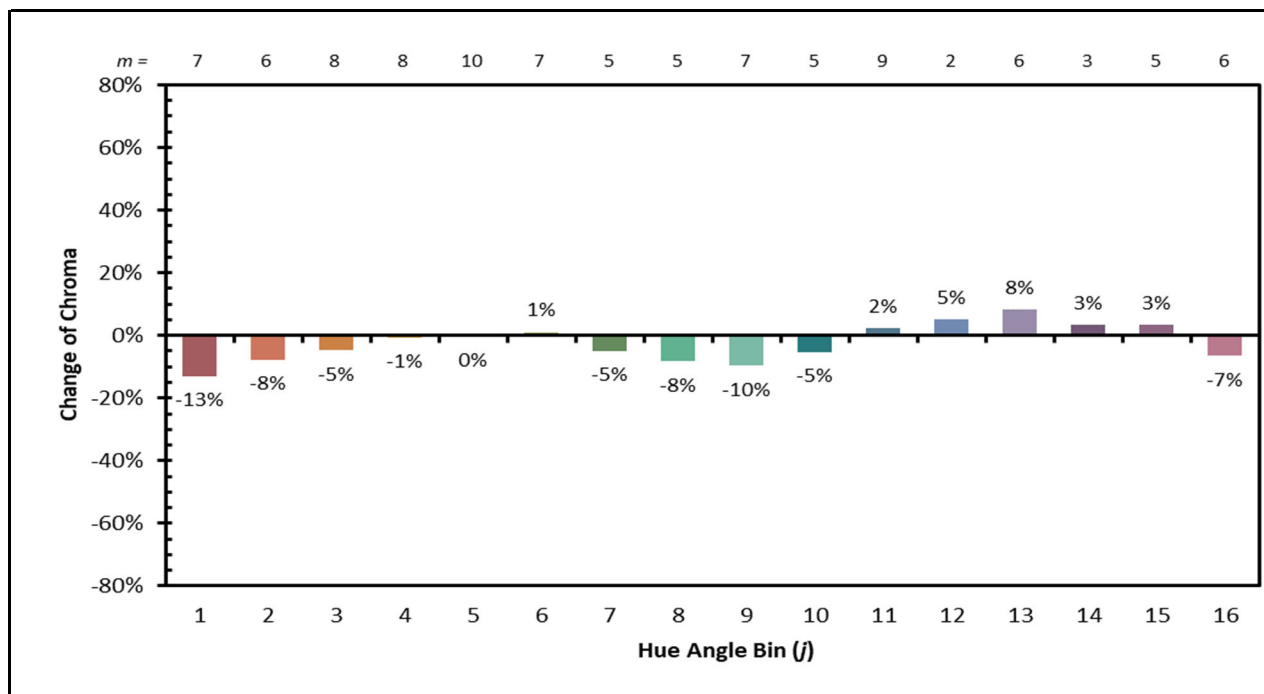
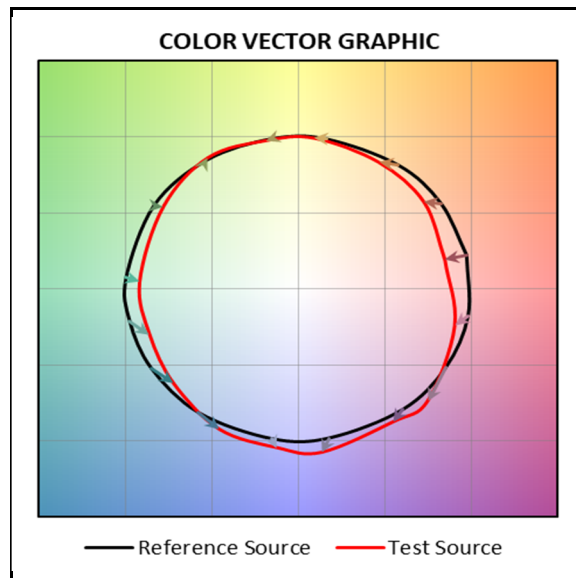
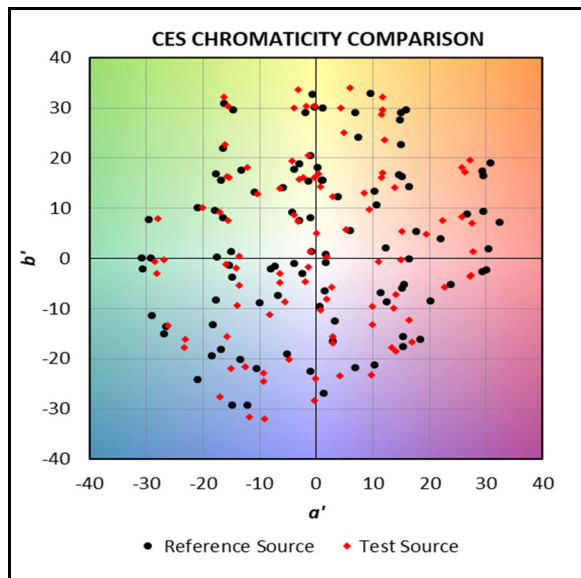
Summary Spectral Power Distribution (wavelength - nm, spectral power - mW)

380	0.003158	480	0.172467	580	0.442809	680	0.088165
385	0.003550	485	0.173082	585	0.443101	685	0.076133
390	0.004625	490	0.189533	590	0.440838	690	0.065669
395	0.006234	495	0.218377	595	0.434673	695	0.056562
400	0.008483	500	0.255718	600	0.425661	700	0.048506
405	0.011353	505	0.291813	605	0.411469	705	0.041599
410	0.014870	510	0.322992	610	0.393982	710	0.035637
415	0.020111	515	0.346007	615	0.373072	715	0.030628
420	0.030138	520	0.363680	620	0.349273	720	0.026280
425	0.049542	525	0.375168	625	0.324442	725	0.022450
430	0.087154	530	0.383030	630	0.298188	730	0.019250
435	0.153562	535	0.389645	635	0.272453	735	0.016453
440	0.258885	540	0.396418	640	0.245641	740	0.014036
445	0.440586	545	0.401900	645	0.220684	745	0.012054
450	0.687565	550	0.407697	650	0.196329	750	0.010352
455	0.742002	555	0.414078	655	0.173812	755	0.008937
460	0.528083	560	0.420578	660	0.153163	760	0.007715
465	0.355540	565	0.426481	665	0.133954	765	0.006651
470	0.275226	570	0.433221	670	0.116722	770	0.005756
475	0.206081	575	0.438940	675	0.101700	775	0.004987
						780	0.004325





IES TM-30 Details



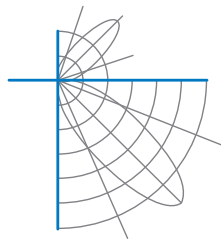
Test Report Number: LLIA001130-003B

Catalog Number: HEC7MCPENNWNGN

High Bay mounted, cast aluminum housing, white center reflector, clear plastic enclosure.
504 white LEDs, one 1500-HIB-0049-00 RevA LED board with circular white baffles around LEDs.
One LED driver.

Test Equipment Configuration:	LightLab International Allentown 2m Integrating Sphere Measurements acquired using a Labsphere CDS 2600 spectroradiometer Testing was performed using 4π geometry
Test Temperature:	24.9 °C
Test Procedure:	Tested in accordance with the applicable sections of: LM-79-08, LM-78-07, LM-58-13, ANSI_ANSLG C78.377-2017, ANSI C82-77-10:2014, TM-30-15
Significance:	The laboratory has not participated in the selection of samples to be tested. All testing is performed on the understanding that the significance of the report is limited to the extent that the test sample is representative of production units.
Notes:	The measurements and other derived quantities contained in this report are based on the absolute data as measured. Prorating the performance of the sample for the use of other component combinations (such as lamp / LED / Ballast / driver), or for use in different environmental conditions than that tested, may produce erroneous results. This report is free of erasures and corrections This report may contain data that are not covered by the NVLAP accreditation. Quantities marked with * are not covered.

Sphere Report Template V2-9



Report of Test

LLIA001130-003C

ISTM Report

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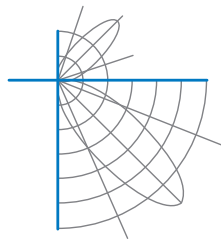
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Prepared For:
Dialight
1501 Route 34 South
Farmingdale, NJ 07727, USA

This test report was issued by LightLab International Allentown, LLC without alterations or erasures.

Test date: 06/19/2019
Report date: 06/19/2019

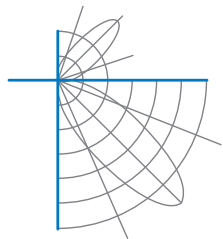


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504 white LEDs, one 1500-HIB-0049-00 RevA LED board with circular white baffles around LEDs.
One LED driver.

Purpose of Test:	To determine the in-situ temperature of the specified LED Ts point and driver Tc point. In this test, in-situ temperature refers to standard laboratory conditions with the luminaire configured in accordance with appropriate sections of UL1598-2008
Luminaire Mounting:	Highbay
LED Test Point:	Thermocouples were attached to the LED case temperature point (Ts) as specified by report number SQETMN558601, issued 06/11/2016 by Nichia Corporation LED Testing Laboratory. The measured LED was selected according to guidance provided by DLC and ENERGY STAR for lumen maintenance projection.
Driver Test Point:	Thermocouples were attached to the driver case in the location (Tc) designated by the manufacturer.
Sample Selection:	LightLab International Allentown. LLC has not participated in the selection of sample(s) being tested. Testing is performed on the understanding that the significance of the report is limited to the extent to which the sample is representative of production units.
Disclaimer:	This report must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.
Procedure:	In-situ temperature measurements were performed with the luminaire mounted suspended from a simulated ceiling. The luminaire supply voltage and frequency was set according to the luminaire manufacturer's instructions. The luminaire was allowed to reach stabilization as defined in UL1598-2008 prior to reported measurements. Testing was performed in a draft-free, temperature-controlled environment with an ambient temperature of 25 +/- 5 °C.
Test Equipment:	GW Instek APS-7100 AC Power Source Xitron 2801 Power Analyzer Fluke 52-ii Thermometer



Test Report Number: LLIA001130-003C

Catalog Number: HEC7MCPENNWNGN

High Bay mounted, cast aluminum housing, white center reflector, clear plastic enclosure.
504 white LEDs, one 1500-HIB-0049-00 RevA LED board with circular white baffles around LEDs.
One LED driver.

Electrical Measurements

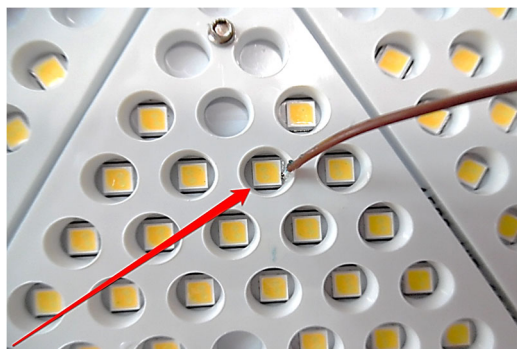
Voltage	480.0 Vac
Current	0.4451 A
Power	212.4 W
Frequency	60.0 Hz
Power Factor	0.994
Current THD	10.4 %
Driver #1 Output	0.414 Adc

Temperature Measurements

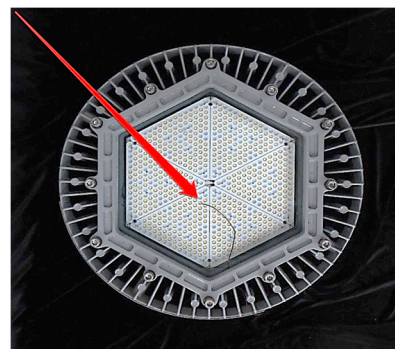
LED #1 (Ts)	62.3°C	Driver #1 (Tc)	N/A
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*The above temperatures have been normalized to 25°C ambient.

Measured Ambient Temperature (Ta) 24.0°C



LED Thermocouple Location



Selected LED Location