

Project Number
19.00223



HUBBELL
Lighting

Date
2/20/2019

Photometric Test Report

Lab1
Sphere

Test Sample Description

Catalog Number: P300093-009-30
Description: 24" LED Concourse Bath/Vanity Light; Brushed Nickel with Etched White, Glass Refractor

Photometry

Test Method: IES LM-41-14
IES LM-79-08 §10
Preburn Time: 3:00
Time To Stabilize: 1:15
Total Operating Time: 4:25

Input Voltage (Volts): 119.9
Input Current (Amps): 0.305
Input Wattage (Watts): 36.3
Ambient Temp (°C): 25.9

Sphere

Test Method: IES LM-16-93
IES LM-79-08 §12.1
Preburn Time: 0:10
Time To Stabilize: 1:19
Total Operating Time: 1:29

Input Voltage (Volts): 120.1
Input Current (Amps): 0.303
Input Wattage (Watts): 36.1
Ambient Temp (°C): 24



Hubbell Lighting, Inc.

701 Millennium Boulevard
Greenville, SC 29607
www.hubbellighting.com

Checked (sphere): B. LEE
Checked (photometry): D. ROBBINS
Approved: P. McCARTHY



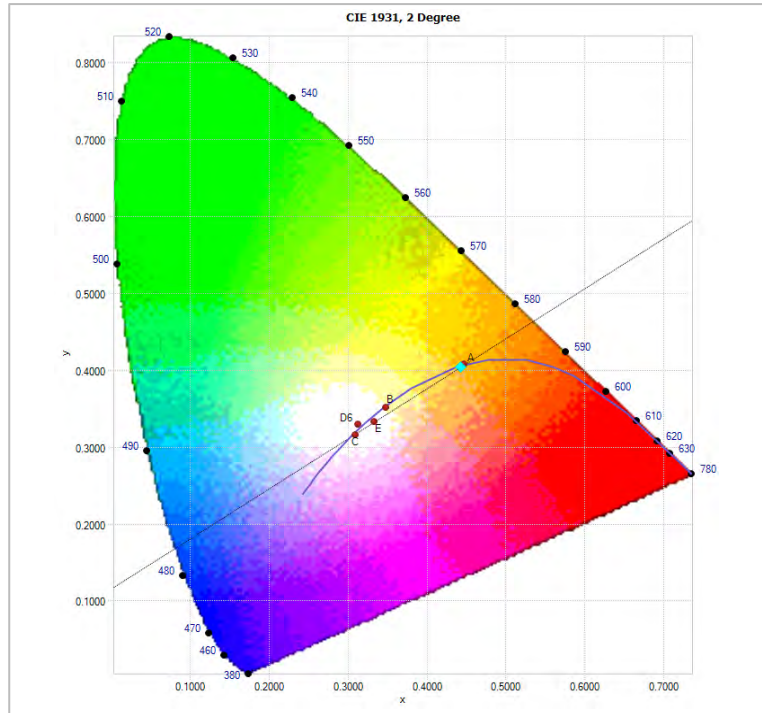
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Lamp Cat#: EVAC120C-3528SE-L98-14S7P-146
Lamp Desc: 96 - HAL - Nicha 3000K LEDs

Efficacy: 60.1 LPW S/P Ratio: 1.4 LM/LM

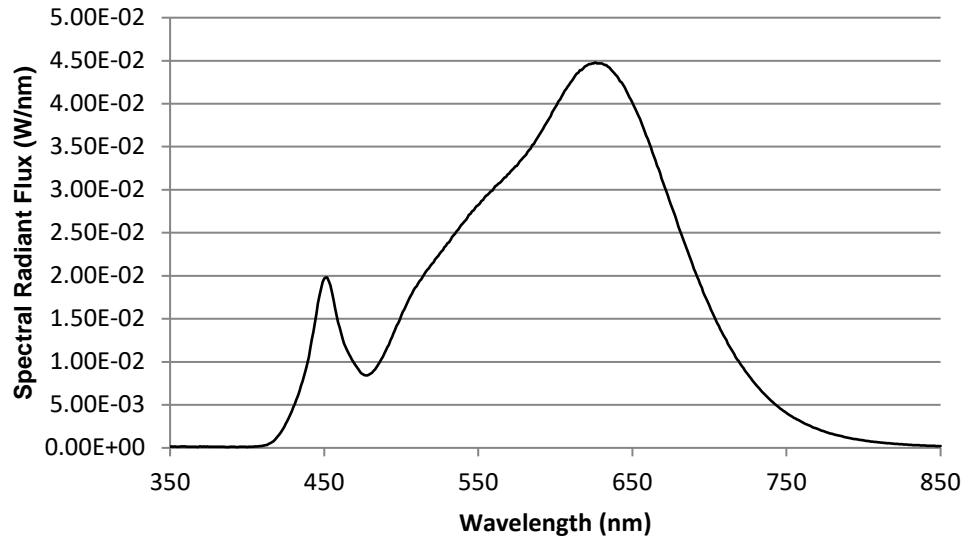
Chromaticity Diagram



Spectral Results

Name	Value	Unit
Φ	7.82	watts
Φ(v)	2171	lumens
Φ(v')	2963	lm'
Chrom x	0.4428	
Chrom y	0.4046	
Chrom u	0.2541	
Chrom v	0.3483	
Duv	0.0009	
Chrom u'	0.2541	
Chrom v'	0.5225	
CCT	2907	K
Purity	54.3	%
λ (dom)	583.4	nm
FWHM	162.6	nm
λ (peak)	625.6	nm
λ (center)	605.5	nm
λ (centroid)	598.7	nm
SDCM	Cool White	
RA	94	
Corr. Coef.	0.000562464	
Correlation	0.0054	
R1	94.2	
R2	95.8	
R3	95.6	
R4	94.1	
R5	93.5	
R6	94.5	
R7	94.1	
R8	86.4	
R9	68.5	
R10	88.9	
R11	94.5	
R12	83.2	
R13	94.5	
R14	96.7	

Spectral Distribution of Radiant Flux





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LUMINAIRE: 24" LED Concourse Bath/Vanity Light; Brushed
Nickel with Etched White, Glass Refractor

LAMP CAT. NO.: EVAC120C-3528SE-L98-14S7P-146

LAMP: 98- Nichia 3000K LEDs

MOUNTING: Wall; Horizontal

NOTE: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED.



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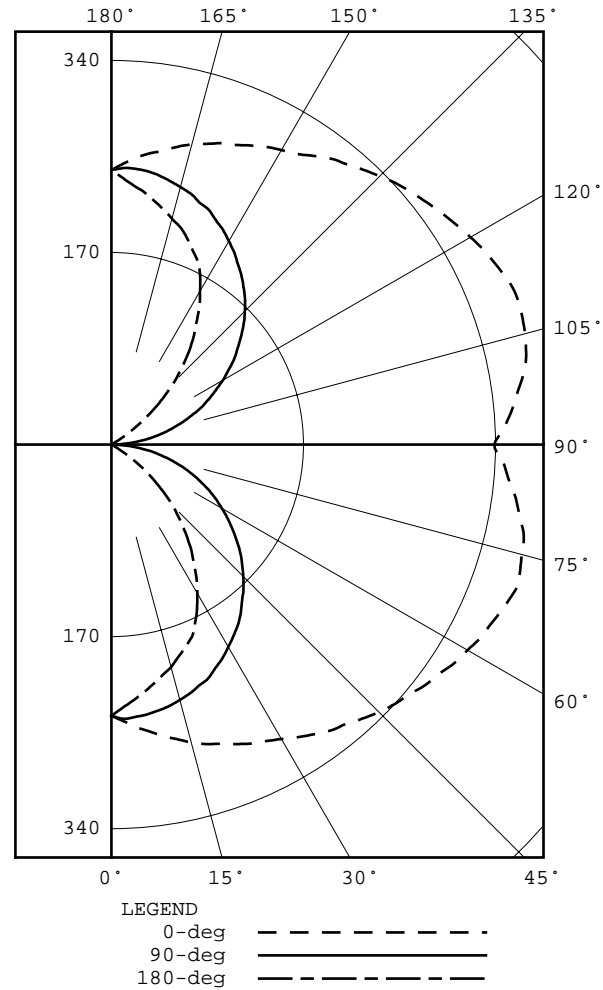
CANDELA DISTRIBUTION

	0.0	45.0	90.0	135.0	180.0	FLUX
0	240	240	240	240	240	
5	251	247	242	230	227	23
15	273	260	234	212	204	67
25	292	266	218	188	175	104
35	313	268	195	155	127	131
45	335	268	165	107	77	144
55	354	268	131	60	23	146
65	372	269	95	12	0	140
75	376	269	56	1	0	135
85	353	248	17	1	0	123
90	339	234	1	0	0	
95	356	249	17	0	0	124
105	379	270	56	0	0	136
115	376	269	95	11	0	141
125	357	269	133	62	23	147
135	336	268	167	112	79	146
145	312	267	195	160	131	132
155	292	267	219	192	180	105
165	275	262	236	215	207	67
175	255	251	245	234	230	23
180	243	243	243	243	243	

ZONAL LUMEN SUMMARY

ZONE	LUMENS	%FIXT
0- 30	194	9.5
0- 40	325	15.9
0- 60	615	30.2
0- 90	1014	49.8
90-120	401	19.7
90-130	548	26.9
90-150	826	40.6
90-180	1022	50.2
0-180	2036	100.0

EFFICACY = 56.1 lm/W
CIE TYPE - GENERAL DIFFUSE
PLANE : 0-DEG 90-DEG 180-DEG
SPACING CRITERIA : 1.98 1.28 1.00
SHIELDING ANGLES : 90 90





®

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PLANE : 0-DEG 90-DEG
LUMINOUS LENGTH : 2.500 22.500
HEIGHT OF SIDE : 2.500 2.500

LUMINANCE DATA IN CANDELA/SQ M
ANGLE AVERAGE AVERAGE AVERAGE
IN DEG 0-DEG 90-DEG 180-DEG
45 6527. 5787. 1500.
55 7004. 5432. 455.
65 7714. 5002. 0.
75 8460. 4214. 0.
85 8979. 2368. 0.



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CANDELA DISTRIBUTION
LATERAL ANGLE

	0.0	22.5	45.0	67.5	90.0	112.5	135.0	157.5	180.0
0.0	240	240	240	240	240	240	240	240	240
5.0	251	251	247	243	242	234	230	227	227
10.0	262	260	255	245	239	228	222	217	215
15.0	273	270	260	246	234	220	212	207	204
20.0	282	278	263	244	227	210	201	195	191
25.0	292	285	266	240	218	199	188	181	175
30.0	301	292	267	235	207	186	174	159	152
35.0	313	301	268	228	195	172	155	134	127
40.0	323	309	268	219	180	156	132	109	102
45.0	335	317	268	209	165	139	107	84	77
50.0	344	325	269	199	149	122	84	59	50
55.0	354	332	268	188	131	99	60	32	23
60.0	364	339	269	178	113	77	35	5	0
65.0	372	345	269	168	95	55	12	0	0
70.0	380	351	268	159	76	33	1	0	0
75.0	376	349	269	150	56	12	1	0	0
80.0	367	340	262	142	37	2	0	0	0
85.0	353	326	248	133	17	2	1	0	0
90.0	339	320	234	121	1	2	0	0	0
95.0	356	329	249	134	17	2	0	0	0
100.0	371	344	263	144	37	2	0	0	0
105.0	379	351	270	149	56	11	0	0	0
110.0	382	353	270	158	76	34	1	0	0
115.0	376	347	269	168	95	57	11	0	0
120.0	367	340	270	177	114	80	36	5	0
125.0	357	333	269	188	133	104	62	32	23
130.0	347	326	269	200	150	125	88	60	50
135.0	336	318	268	210	167	143	112	87	79
140.0	324	308	268	221	182	160	138	113	106
145.0	312	299	267	229	195	175	160	139	131
150.0	301	291	267	236	208	189	178	164	157
155.0	292	284	267	242	219	202	192	184	180
160.0	284	278	265	246	228	214	204	197	195
165.0	275	271	262	249	236	224	215	209	207
170.0	264	262	258	250	242	232	225	220	219
175.0	255	254	251	247	245	239	234	231	230
180.0	243	243	243	243	243	243	243	243	243



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5-DEGREE ZONAL LUMEN SUMMARY		
0- 5		6
5- 10		17
10- 15		28
15- 20		39
20- 25		48
25- 30		56
30- 35		63
35- 40		68
40- 45		71
45- 50		73
50- 55		73
55- 60		72
60- 65		71
65- 70		70
70- 75		69
75- 80		67
80- 85		64
85- 90		60
90- 95		60
95-100		64
100-105		67
105-110		69
110-115		70
115-120		71
120-125		73
125-130		74
130-135		74
135-140		72
140-145		69
145-150		63
150-155		57
155-160		48
160-165		39
165-170		28
170-175		17
175-180		6

10-DEGREE ZONAL LUMEN SUMMARY		
0- 10		23
0- 20		89
0- 30		194
0- 40		325
0- 50		469
0- 60		615
0- 70		755
0- 80		891
0- 90		1014
0-100		1138
0-110		1274
0-120		1415
0-130		1561
0-140		1708
0-150		1840
0-160		1945
0-170		2012
0-180		2036



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COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

EFFECTIVE FLOOR CAVITY REFLECTANCE 0.20

RC	80				70				50			30			10			0	
	RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30		10
0	107	107	107	107	107	99	99	99	99	83	83	83	69	69	69	56	56	56	50
1	95	89	85	80	80	87	82	78	74	69	66	63	56	54	52	45	43	42	36
2	85	77	69	63	63	78	71	64	59	59	54	50	48	45	41	38	36	33	28
3	77	67	58	52	52	71	61	54	48	51	46	41	42	38	34	33	30	27	23
4	70	59	50	43	43	64	54	46	40	45	39	34	37	32	28	29	26	23	19
5	64	52	43	36	36	59	48	40	34	40	34	29	33	28	24	26	22	20	16
6	59	46	38	31	31	54	43	35	29	36	30	25	29	25	21	24	20	17	14
7	55	42	33	27	27	50	38	31	25	32	26	22	27	22	18	21	18	15	12
8	51	38	29	24	24	46	35	27	22	29	23	19	24	20	16	20	16	13	11
9	47	34	26	21	21	43	32	25	20	27	21	17	22	18	14	18	14	12	10
10	44	31	24	19	19	40	29	22	18	25	19	15	21	16	13	17	13	11	9

ALL CANDELA, LUMENS, LUMINANCE, AND VCP VALUES IN THIS REPORT ARE BASED ON ABSOLUTE PHOTOMETRY. THE COEFFICIENT OF UTILIZATION VALUES ARE BASED ON THE TOTAL ABSOLUTE LUMEN OUTPUT OF THIS TEST SAMPLE.

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Goniophotometer Calibration

Calibration Lamp: GE 1000W, 120V, T6, CL (FEL)

Lamp Number: ITL78966-1000-38

Calibration Current: 8.300 Amps DC

Total Luminous Flux: 25889.0 Lumens

Calibration Date: 07/10/2017

Test Equipment Used

<i>Instrument</i>	<i>Manufacturer / Model</i>	<i>S/N</i>	<i>Calibration Due:</i>
<i>Goniophotometer</i>	ITL/HLI LAB 1 - Test Distance: 31.74'	N/A	N/A
<i>Power Analyzer</i>	Yokogawa / WT 332	C2QA27071V	10/31/2019
<i>Power Source</i>	Voltage-Regulated House Power	N/A	N/A
<i>Thermometer</i>	National Instruments / USB-TC01	176F4E3	10/31/2019

3-Meter-Sphere Calibration

Calibration Lamp: EIKO 28V75W/E10

Lamp Number: SCL-1400-J136

Calibration Current: 2.679 Amps

Total Luminous Flux: 1427 Lumens

Test Equipment Used - Color & SPD; THD & Power Factor

<i>Instrument</i>	<i>Manufacturer / Model</i>	<i>S/N</i>	<i>Calibration Due:</i>
<i>3-Meter Sphere</i>	Labsphere / LMS-3M	N/A	Checked Daily
<i>Thermometer</i>	National Instruments / USB TC01	1912751	10/31/2019
<i>LAMP Power Meter</i>	Yokogawa / WT332	C2QA27075V	10/31/2019
<i>Power Supply</i>	Chroma / 61602	616020002113	N/A
<i>Aux Lamp Supply</i>	Labsphere / LPS-100-0833	0331159372	N/A
<i>Cal Lamp Supply</i>	Labsphere / LPS-150-0268	1218148505	N/A
<i>Spectrometer</i>	Labsphere / CDS 1100	0624117792	N/A

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