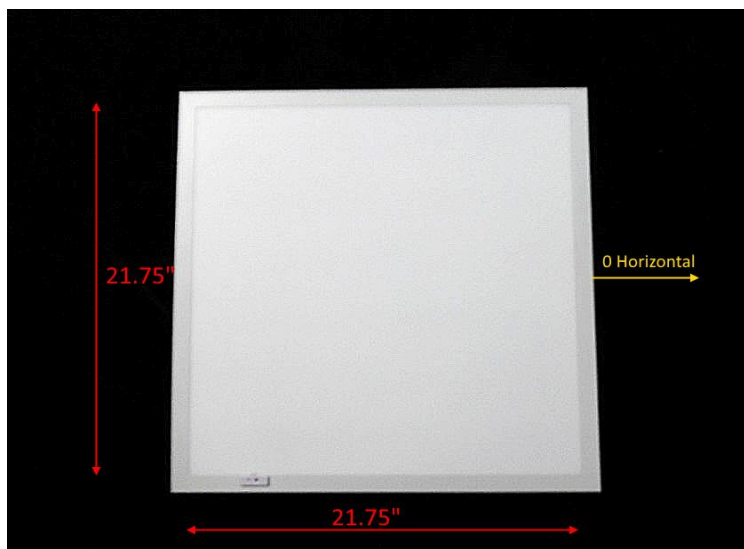


## Report of Test

**LLIA002377-001**

Indoor Distribution Photometry Test Report

Catalog Number: PL22-30WPCTS-D-EM - 20 Watt Setting  
Recessed mounted, formed white painted steel housing/reflector,  
white painted aluminum frame, diffuse white plastic enclosure.  
120 white LEDs on six white circuit boards with optic below each LED  
One Streamer Combined LED Driver & Emergency Conversion Module YH07-2008WL-XX



Prepared For:  
Topaz Lighting, A Southwire Company  
925 Waverly Avenue  
Holtsville, NY 11742, USA

Performance Summary			
Input Voltage	120.0 Vac	Luminous Flux	2751.5 Lumens
Input Current	0.1605 A	Total Efficacy	147.5 lm/W
Input Power	18.66 W	Downward Flux	2751.5 Lumens
Frequency	60.00 Hz	Downward Flux	100.0 % of Total
Power Factor	0.969		
Current THD	9.5 %		

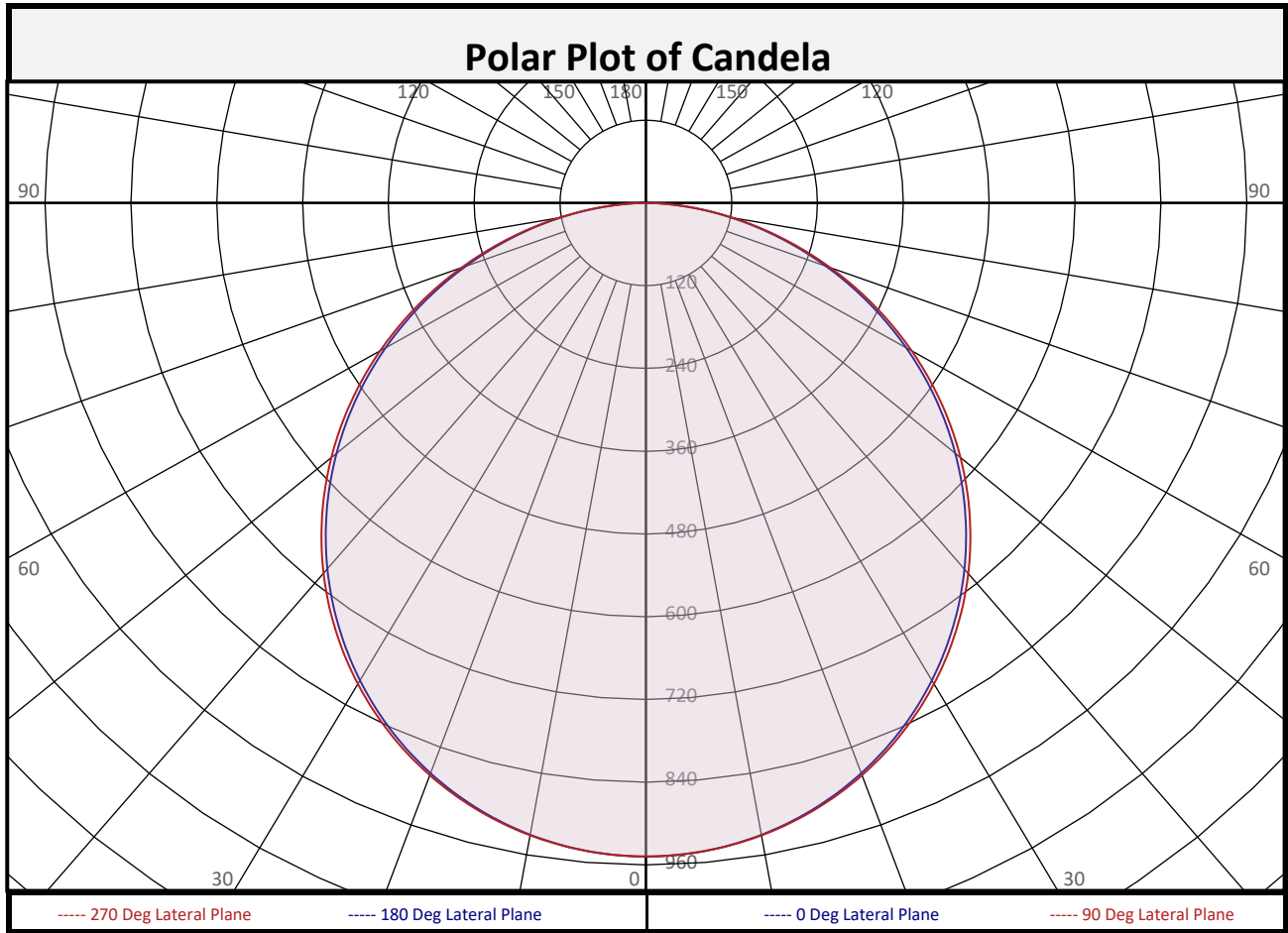
This test report was issued by LightLab International Allentown, LLC without alterations or erasures.

Test date: 07/11/2024  
Report date: 07/23/2024

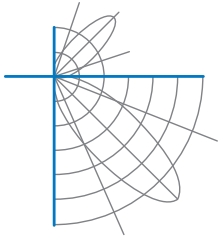
Signed: \_\_\_\_\_



Report of Test  
LLIA002377-001



Zonal Flux Summary										
Zone (Deg Vert)	Flux (Lumens)	Percent of Total		Zone (Deg Vert)	Flux (Lumens)	Percent of Total		Zone (Deg Vert)	Flux (Lumens)	Percent of Total
0-10	89.7	3.3%		90-100	0.0	0.0%		0-20	346.6	12.6%
10-20	256.9	9.3%		100-110	0.0	0.0%		0-30	736.2	26.8%
20-30	389.7	14.2%		110-120	0.0	0.0%		0-40	1207	43.9%
30-40	470.9	17.1%		120-130	0.0	0.0%		0-60	2143	77.9%
40-50	490.2	17.8%		130-140	0.0	0.0%		0-80	2692	97.9%
50-60	445.5	16.2%		140-150	0.0	0.0%		10-90	2662	96.7%
60-70	344.3	12.5%		150-160	0.0	0.0%		20-50	1351	49.1%
70-80	205.3	7.5%		160-170	0.0	0.0%		40-90	1544	56.1%
80-90	59.1	2.1%		170-180	0.0	0.0%		60-90	608.8	22.1%
0-90	2752	100.0%		90-180	0.0	0.0%		0-180	2752	100.0%



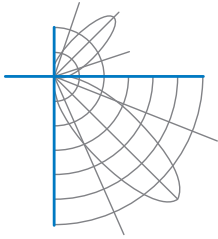
## Report of Test

### LLIA002377-001

#### Luminous Intensity (Candela) Table

		Lateral (C-Plane) Angles								
		0	22.5	45	67.5	90	112.5	135	157.5	180
Vertical (Gamma) Angles - Data was acquired in 0.5° increments, 2.5° increments shown.	0	948	948	948	948	948	948	948	948	948
	2.5	947	947	947	947	947	947	947	947	947
	5	943	943	944	943	943	943	944	943	943
	7.5	938	938	938	938	938	938	938	938	938
	10	930	930	931	931	931	931	931	930	930
	12.5	921	921	922	922	922	922	922	921	921
	15	909	909	910	911	911	911	910	909	909
	17.5	896	896	897	898	898	898	897	896	896
	20	880	881	882	883	883	883	882	881	880
	22.5	863	863	865	866	866	866	865	863	863
	25	844	844	846	847	848	847	846	844	844
	27.5	822	823	825	827	827	827	825	823	822
	30	800	800	803	804	805	804	803	800	800
	32.5	775	776	779	781	782	781	779	776	775
	35	749	750	753	755	756	755	753	750	749
	37.5	722	723	726	728	729	728	726	723	722
	40	693	694	697	700	701	700	697	694	693
	42.5	663	664	667	670	671	670	667	664	663
	45	631	632	636	639	640	639	636	632	631
	47.5	598	600	603	606	607	606	603	600	598
50	565	566	569	573	574	573	569	566	565	
52.5	530	531	534	538	539	538	534	531	530	
55	494	495	499	502	503	502	499	495	494	
57.5	458	459	462	465	466	465	462	459	458	
60	420	422	425	428	429	428	425	422	420	
62.5	382	384	386	389	390	389	386	384	382	
65	344	345	348	351	352	351	348	345	344	
67.5	306	307	309	312	313	312	309	307	306	
70	268	269	271	273	274	273	271	269	268	
72.5	230	230	232	234	235	234	232	230	230	
75	192	192	194	196	197	196	194	192	192	
77.5	155	156	157	158	159	158	157	156	155	
80	119	120	121	122	122	122	121	120	119	
82.5	84	85	86	87	87	87	86	85	84	
85	50	51	52	53	53	53	52	51	50	
87.5	20	20	21	23	23	23	21	20	20	
90	0	0	0	0	1	0	0	0	0	

16 lateral half-planes of data were acquired, 22.5 degree increments shown.



## Report of Test

LLIA002377-001

Luminous Intensity (Candela) Table

		Lateral (C-Plane) Angles								
		0	22.5	45	67.5	90	112.5	135	157.5	180
Vertical (Gamma) Angles - Data was acquired in 0.5° increments, 2.5° increments shown.	90	0	0	0	0	1	0	0	0	0
	92.5	0	0	0	0	0	0	0	0	0
	95	0	0	0	0	0	0	0	0	0
	97.5	0	0	0	0	0	0	0	0	0
	100	0	0	0	0	0	0	0	0	0
	102.5	0	0	0	0	0	0	0	0	0
	105	0	0	0	0	0	0	0	0	0
	107.5	0	0	0	0	0	0	0	0	0
	110	0	0	0	0	0	0	0	0	0
	112.5	0	0	0	0	0	0	0	0	0
	115	0	0	0	0	0	0	0	0	0
	117.5	0	0	0	0	0	0	0	0	0
	120	0	0	0	0	0	0	0	0	0
	122.5	0	0	0	0	0	0	0	0	0
	125	0	0	0	0	0	0	0	0	0
	127.5	0	0	0	0	0	0	0	0	0
	130	0	0	0	0	0	0	0	0	0
	132.5	0	0	0	0	0	0	0	0	0
	135	0	0	0	0	0	0	0	0	0
	137.5	0	0	0	0	0	0	0	0	0
140	0	0	0	0	0	0	0	0	0	
142.5	0	0	0	0	0	0	0	0	0	
145	0	0	0	0	0	0	0	0	0	
147.5	0	0	0	0	0	0	0	0	0	
150	0	0	0	0	0	0	0	0	0	
152.5	0	0	0	0	0	0	0	0	0	
155	0	0	0	0	0	0	0	0	0	
157.5	0	0	0	0	0	0	0	0	0	
160	0	0	0	0	0	0	0	0	0	
162.5	0	0	0	0	0	0	0	0	0	
165	0	0	0	0	0	0	0	0	0	
167.5	0	0	0	0	0	0	0	0	0	
170	0	0	0	0	0	0	0	0	0	
172.5	0	0	0	0	0	0	0	0	0	
175	0	0	0	0	0	0	0	0	0	
177.5	0	0	0	0	0	0	0	0	0	
180	0	0	0	0	0	0	0	0	0	

16 lateral half-planes of data were acquired, 22.5 degree increments shown.



## Report of Test

### LLIA002377-001

Coefficients of Utilization/Room 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	50	30	10	0
RCR																					
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	102	102	100	
1	108	104	99	95	106	101	97	94	97	94	91	93	90	88	89	87	85	85	85	83	
2	98	90	83	77	96	88	82	76	85	79	74	81	77	73	78	74	71	71	71	69	
3	90	79	71	64	87	77	70	63	74	68	62	72	66	61	69	64	60	60	60	58	
4	82	70	61	54	80	68	60	54	66	59	53	64	57	52	61	56	51	51	51	49	
5	75	62	53	46	73	61	53	46	59	51	46	57	50	45	55	49	45	45	45	42	
6	70	56	47	40	68	55	47	40	53	46	40	52	45	40	50	44	39	39	39	37	
7	64	51	42	36	63	50	42	36	48	41	35	47	40	35	46	39	35	35	35	33	
8	60	46	38	32	58	46	37	32	44	37	31	43	36	31	42	36	31	31	31	29	
9	56	42	34	29	55	42	34	29	41	33	28	40	33	28	39	33	28	28	28	26	
10	53	39	31	26	51	39	31	26	38	31	26	37	30	26	36	30	25	25	25	24	

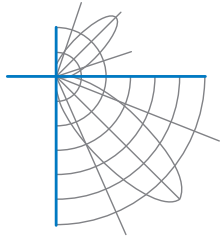
For absolute test reports, RUs are expressed as a percentage of total lumen output. For relative test reports, CUs are expressed as a percentage of total lamp output. Calculations were based on published IES procedures, and are based on the zonal cavity method. Basic assumptions: 1) Room surfaces are 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)	Ground-level distance to half-of-nadir illuminance (ft)	
		0-180 deg	90-270 deg
6.0	26.3	7.53	7.58
8.0	14.8	10.03	10.10
10.0	9.5	12.54	12.63
12.0	6.6	15.05	15.15
14.0	4.8	17.56	17.68
16.0	3.7	20.07	20.21

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

Average Luminance (cd/m <sup>2</sup> )			
	0 deg Plane	45 deg Plane	90 deg Plane
0	3105	3105	3105
45	2924	2945	2965
55	2823	2849	2873
65	2670	2698	2728
75	2427	2456	2490
85	1897	1956	2010

Beam and Field Angle	
0-180 Degree Plane	
Beam Angle:	112.8°
Field Angle:	163.5°
90-270 Degree Plane	
Beam Angle:	114.0°
Field Angle:	163.9°



## Report of Test

### LLIA002377-001

#### UGR Table - Corrected

##### Reflectances

Ceiling Cavity	70	70	50	50	30	70	70	50	50	30
Walls	50	30	50	30	30	50	30	50	30	30
Floor Cavity	20	20	20	20	20	20	20	20	20	20

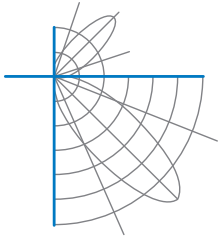
##### Room Size

##### UGR Viewed Crosswise

##### UGR Viewed Endwise

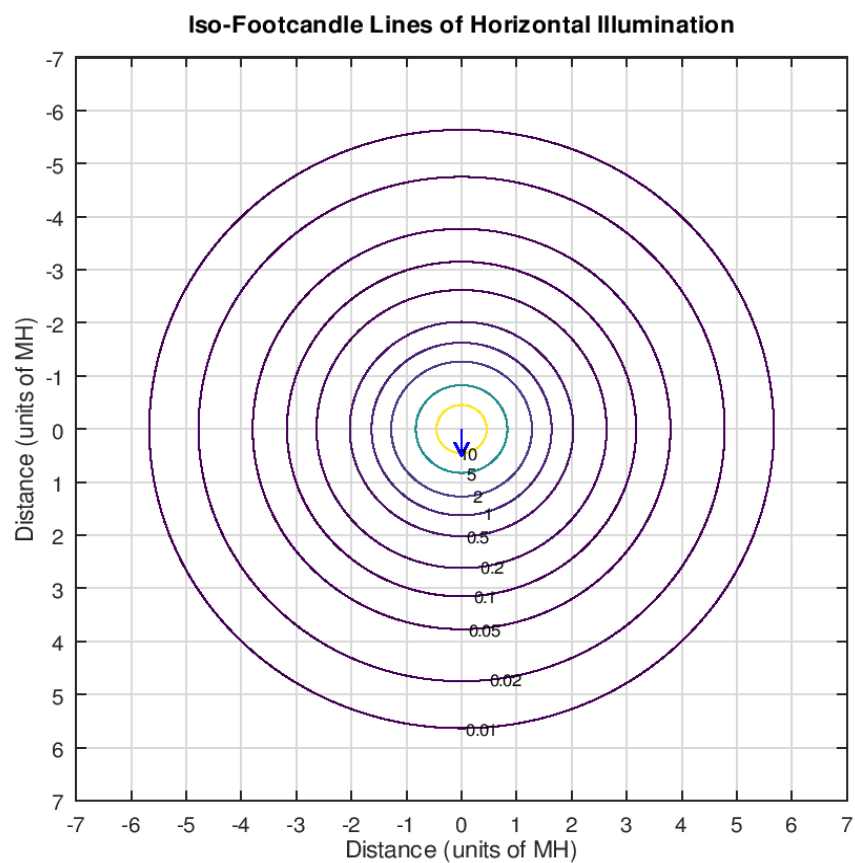
X=2H	Y=2H	15.7	17.4	16.1	17.7	18.0	15.8	17.5	16.2	17.8	18.1
		3H	17.6	19.1	18.0	19.4	19.8	17.7	19.2	18.1	19.5
	4H	18.3	19.7	18.7	20.1	20.5	18.5	19.9	18.9	20.2	20.6
	6H	18.9	20.2	19.3	20.6	20.9	19.0	20.3	19.4	20.7	21.1
	8H	19.1	20.3	19.5	20.7	21.1	19.2	20.5	19.6	20.8	21.2
	12H	19.2	20.4	19.6	20.8	21.2	19.3	20.5	19.8	20.9	21.3
4H	2H	16.4	17.8	16.8	18.2	18.5	16.5	17.9	16.9	18.2	18.6
	3H	18.5	19.7	18.9	20.1	20.5	18.6	19.8	19.0	20.2	20.6
	4H	19.4	20.4	19.8	20.8	21.3	19.5	20.5	19.9	20.9	21.4
	6H	20.0	21.0	20.5	21.4	21.9	20.2	21.1	20.6	21.5	22.0
	8H	20.3	21.2	20.7	21.6	22.1	20.4	21.3	20.8	21.7	22.2
	12H	20.5	21.2	20.9	21.7	22.2	20.6	21.4	21.1	21.8	22.3
8H	4H	19.7	20.6	20.1	21.0	21.5	19.8	20.7	20.2	21.1	21.6
	6H	20.5	21.3	21.0	21.7	22.2	20.6	21.4	21.1	21.8	22.3
	8H	20.8	21.5	21.3	22.0	22.5	20.9	21.6	21.5	22.1	22.6
	12H	21.1	21.7	21.6	22.2	22.7	21.2	21.8	21.7	22.3	22.8
12H	4H	19.8	20.5	20.2	21.0	21.5	19.8	20.6	20.3	21.1	21.6
	6H	20.6	21.3	21.1	21.7	22.3	20.7	21.4	21.2	21.8	22.4
	8H	21.0	21.6	21.5	22.0	22.6	21.1	21.7	21.6	22.2	22.7

Maximum UGR = 22.8

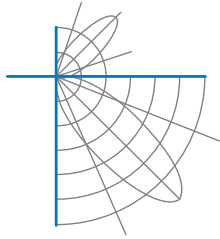


## Report of Test LLIA002377-001

### Iso-Illuminance Plot



The isofootcandle values shown in the plot above are based on a mounting height of  $h = 8.0$  feet. Grid values show multiples of mounting height. The isoilluminance contour lines are expressed in units of footcandles. The values expressed are based on the direct light from a single unit without the contribution of room reflections.



## Report of Test

### LLIA002377-001

Test Distance                    9.5 m  
Ambient Temperature        24.4 °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 IES LM-79-19. Format of reports and angular increments based on IES LM-41-20 and LM-46-20.

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 C-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.