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Indoor Distribution Test Report

Relevant Standards
IES LM-79-2008
ANSI C82.77-2002

Prepared For
Sonneman
Nicolas Carmichael
106 Pierce Rd
Newburgh, NY 12550-9369
United States

Catalog Number
RP02
Order Number
11199505
Test Number
1227101

Test Date

2016-03-30

Prepared By

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Approved By

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Luminaire Description: Pendant luminaire that can be hung at varying lengths and locations on bus bars within a modular architectural lighting system
Lamp: One white LED array
Mounting: Pendant
Ballast/Driver: LTF / Model# - TA75WA24LED

Luminaire



Luminaire Characteristics

Luminous Length: 0.63 in.
Luminous Width: 1.500 in.
Luminous Height: 2.00 in.

Summary of Results

Total Luminaire Output: 66.00 Lumens
Luminaire Efficacy: 21.1 lm/w
Maximum Candela: 22 Candela

Test Conditions

Test Temperature: 24.6 °C
Voltage: 120.0 VAC
Current: 0.02780 A
Power: 3.132 W
Power Factor: 0.936
Frequency: 60 Hz
Current THD: 26.5 %

Laboratory results may not be representative of field performance
Ballast factors have not been applied



Distribution - Goniophotometer

Distribution Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
24.6 °C	120.0 VAC	0.02780 A	3.132 W	0.936	60 Hz	26.5 %

Summary of Results

Spacing Criteria

0-180: 1.09

90-270: 1.16

Total Lumen Output:

66.00 Lumens

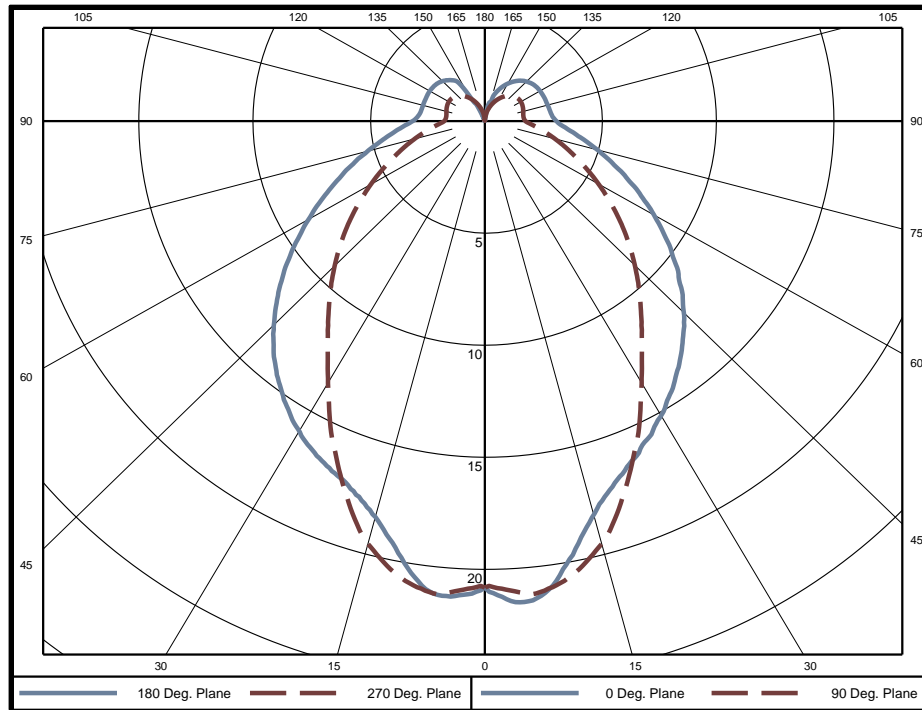
Luminaire Efficacy:

21.1 lm/w

Maximum Candela:

22 Candela

Polar Plot



Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	0.505	0.8%	60-65	3.272	5.0%	120-125	1.103	1.7%
5-10	1.499	2.3%	65-70	2.902	4.4%	125-130	1.011	1.5%
10-15	2.314	3.5%	70-75	2.528	3.8%	130-135	0.901	1.4%
15-20	2.927	4.4%	75-80	2.164	3.3%	135-140	0.775	1.2%
20-25	3.393	5.1%	80-85	1.841	2.8%	140-145	0.641	1.0%
25-30	3.746	5.7%	85-90	1.578	2.4%	145-150	0.500	0.8%
30-35	3.983	6.0%	90-95	1.430	2.2%	150-155	0.358	0.5%
35-40	4.115	6.2%	95-100	1.365	2.1%	155-160	0.222	0.3%
40-45	4.146	6.3%	100-105	1.325	2.0%	160-165	0.128	0.2%
45-50	4.065	6.2%	105-110	1.285	1.9%	165-170	0.056	0.1%
50-55	3.883	5.9%	110-115	1.238	1.9%	170-175	0.014	0.0%
55-60	3.609	5.5%	115-120	1.179	1.8%	175-180	0.001	0.0%

Zone	Lumens	% of Luminaire
0-40	22	34.1%
0-60	38	57.9%
0-90	52	79.5%
90-180	14	20.5%



Candela Tabulation

Horizontal Angle (Degrees)

Vertical Angle (Degrees)	0	22.5	45	67.5	90	112.5	135	157.5	180	202.5	225	247.5	270	292.5	315	337.5
	0	20.81	20.81	20.81	20.81	20.81	20.81	20.81	20.81	20.81	20.81	20.81	20.81	20.81	20.81	20.81
	5	21.51	21.50	21.43	21.29	21.16	21.08	21.12	21.18	21.27	21.18	21.12	21.08	21.16	21.29	21.43
	10	20.09	20.29	20.59	20.80	20.70	20.51	20.38	20.03	20.04	20.03	20.38	20.51	20.70	20.80	20.59
	15	18.13	18.29	18.57	19.23	19.51	18.94	18.42	18.20	18.30	18.20	18.42	18.94	19.51	19.23	18.57
	20	16.88	16.81	16.59	17.09	17.61	16.88	16.58	16.94	17.30	16.94	16.58	16.88	17.61	17.09	16.59
	25	15.94	15.78	15.07	14.95	15.59	14.85	15.21	16.18	16.72	16.18	15.21	14.85	15.59	14.95	15.07
	30	15.12	14.80	13.74	13.13	13.52	13.08	14.04	15.36	16.03	15.36	14.04	13.08	13.52	13.13	13.74
	35	14.15	13.79	12.53	11.62	11.80	11.65	12.92	14.44	15.18	14.44	12.92	11.65	11.80	11.62	12.53
	40	13.12	12.74	11.42	10.33	10.42	10.40	11.82	13.40	14.13	13.40	11.82	10.40	10.42	10.33	11.42
	45	12.02	11.65	10.34	9.19	9.16	9.27	10.74	12.25	12.94	12.25	10.74	9.27	9.16	9.19	10.34
	50	10.82	10.52	9.30	8.12	7.95	8.21	9.65	11.03	11.63	11.03	9.65	8.21	7.95	8.12	9.30
	55	9.63	9.35	8.29	7.11	6.78	7.21	8.56	9.76	10.24	9.76	8.56	7.21	6.78	7.11	8.29
	60	8.34	8.15	7.28	6.18	5.69	6.25	7.49	8.46	8.85	8.46	7.49	6.25	5.69	6.18	7.28
	65	7.15	7.02	6.30	5.30	4.71	5.34	6.46	7.25	7.53	7.25	6.46	5.34	4.71	5.30	6.30
	70	5.98	5.96	5.41	4.53	3.88	4.55	5.54	6.15	6.39	6.15	5.54	4.55	3.88	4.53	5.41
	75	5.00	5.00	4.58	3.82	3.17	3.83	4.68	5.16	5.29	5.16	4.68	3.83	3.17	3.82	4.58
	80	4.14	4.16	3.86	3.21	2.56	3.22	3.95	4.31	4.39	4.31	3.95	3.22	2.56	3.21	3.86
	85	3.48	3.53	3.29	2.70	2.08	2.71	3.35	3.63	3.68	3.63	3.35	2.71	2.08	2.70	3.29
	90	3.06	3.12	2.91	2.37	1.75	2.34	2.90	3.11	3.13	3.11	2.90	2.34	1.75	2.37	2.91
	95	2.89	2.96	2.77	2.27	1.68	2.22	2.72	2.88	2.88	2.88	2.72	2.22	1.68	2.27	2.77
	100	2.82	2.88	2.70	2.22	1.68	2.18	2.64	2.79	2.80	2.79	2.64	2.18	1.68	2.22	2.70
	105	2.78	2.84	2.66	2.21	1.71	2.17	2.61	2.76	2.77	2.76	2.61	2.17	1.71	2.21	2.66
	110	2.76	2.80	2.63	2.19	1.75	2.16	2.58	2.74	2.75	2.74	2.58	2.16	1.75	2.19	2.63
	115	2.74	2.78	2.59	2.17	1.77	2.15	2.56	2.73	2.75	2.73	2.56	2.15	1.77	2.17	2.59
	120	2.72	2.74	2.55	2.13	1.78	2.11	2.52	2.71	2.74	2.71	2.52	2.11	1.78	2.13	2.55
	125	2.68	2.69	2.48	2.08	1.75	2.06	2.47	2.67	2.70	2.67	2.47	2.06	1.75	2.08	2.48
	130	2.61	2.60	2.39	1.99	1.70	1.98	2.38	2.60	2.64	2.60	2.38	1.98	1.70	1.99	2.39
	135	2.50	2.48	2.25	1.86	1.60	1.86	2.26	2.49	2.54	2.49	2.26	1.86	1.60	1.86	2.25
	140	2.36	2.32	2.09	1.71	1.47	1.71	2.10	2.34	2.39	2.34	2.10	1.71	1.47	1.71	2.09
	145	2.16	2.11	1.88	1.52	1.31	1.53	1.90	2.14	2.19	2.14	1.90	1.53	1.31	1.52	1.88
	150	1.92	1.87	1.65	1.31	1.13	1.33	1.67	1.90	1.15	1.90	1.67	1.33	1.13	1.31	1.65
	155	1.65	1.58	1.38	1.09	0.93	1.10	1.36	1.41	0.62	1.41	1.36	1.10	0.93	1.09	1.38
	160	1.34	1.30	1.11	0.86	0.73	0.88	0.99	0.70	0.04	0.70	0.99	0.88	0.73	0.86	1.11
	165	0.60	0.85	0.82	0.63	0.53	0.62	0.47	0.56	0.25	0.56	0.47	0.62	0.53	0.63	0.82
	170	0.58	0.53	0.54	0.38	0.33	0.36	0.17	0.04	0.03	0.04	0.17	0.36	0.33	0.38	0.54
	175	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.03	0.04	0.04	0.04	0.04	0.04	0.04
	180	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04

Average Luminance (cd/m²)

Horizontal Angle (Degrees)

Vertical Angle (Degrees)	0	45	90
	0	34410	34410
	45	11960	15110
	55	9144	11470
	65	6687	8452
	75	4755	6247
	85	3470	4710



Utilization of Lumens - Zonal Cavity Method

Effective Floor Cavity Reflectance 20%																		
Ceiling Cavity Reflectance	80				70				50			30			10			0
Wall Reflectance	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
Room Cavity Ratio (RCR)	** Values are expressed as Lumens delivered to the task surface **																	
0	75	75	75	75	72	72	72	72	66	66	66	60	60	60	55	55	55	52
1	68	64	61	58	65	61	59	56	56	54	52	51	49	48	47	45	44	42
2	61	56	51	47	58	53	49	45	49	45	42	45	42	39	41	39	37	34
3	56	49	43	39	53	47	42	38	43	39	35	39	36	33	36	33	31	29
4	51	43	37	33	49	41	36	32	38	34	30	35	31	28	32	29	27	25
5	47	39	33	28	45	37	32	28	34	30	26	32	28	25	29	26	23	21
6	44	35	29	25	41	34	28	24	31	26	23	29	25	22	26	23	20	19
7	40	32	26	22	38	30	25	21	28	24	20	26	22	19	24	21	18	17
8	38	29	23	20	36	28	23	19	26	21	18	24	20	17	22	19	16	15
9	35	26	21	18	34	26	21	17	24	19	16	22	18	16	21	17	15	14
10	33	24	19	16	31	24	19	16	22	18	15	21	17	14	19	16	14	12

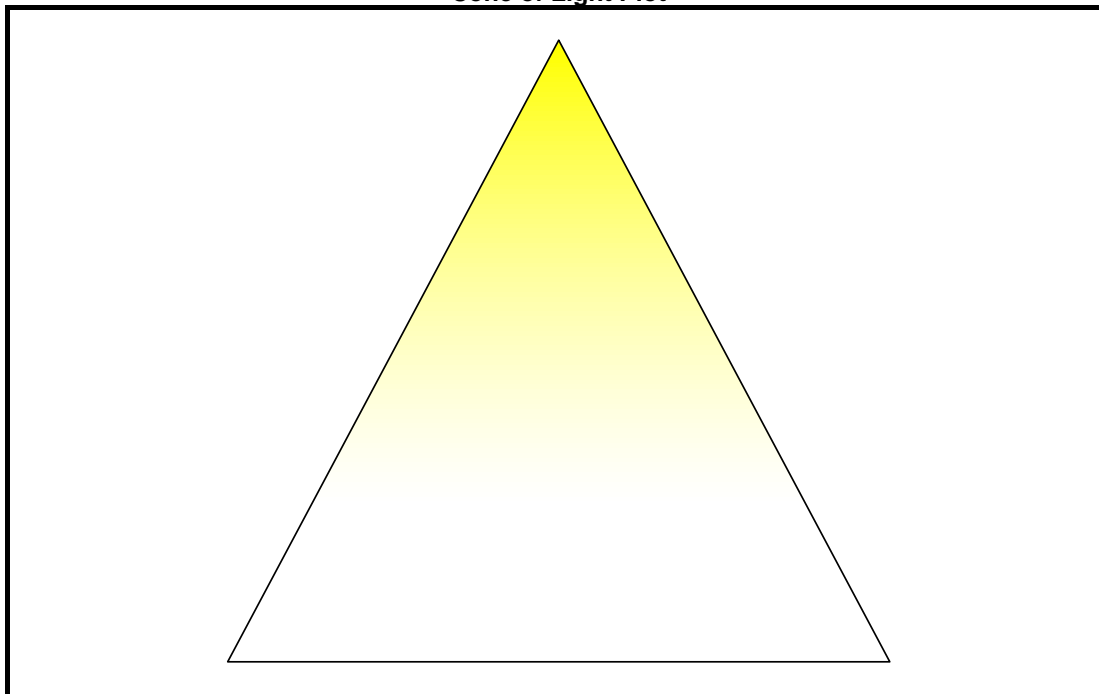
Cone of Light Tabulation

Mounting Height	Footcandles at Nadir	Diameter (Feet)
4.00	1.30	4.14
6.00	0.578	6.21
8.00	0.325	8.28
10.0	0.208	10.3
12.0	0.145	12.4
14.0	0.106	14.5
16.0	0.0813	16.6

Beam and Field Information

CIE Type:	Semi-Direct
Center Beam Intensity:	20.81 Candela
Central Cone Intensity:	21 Candela
Beam Flux:	27.8 Lumens
Beam Angle (0-180):	106.2 Degrees
Beam Angle (90-270):	80.1 Degrees
Field Angle (0-180):	293.0 Degrees
Field Angle (90-270):	169.9 Degrees

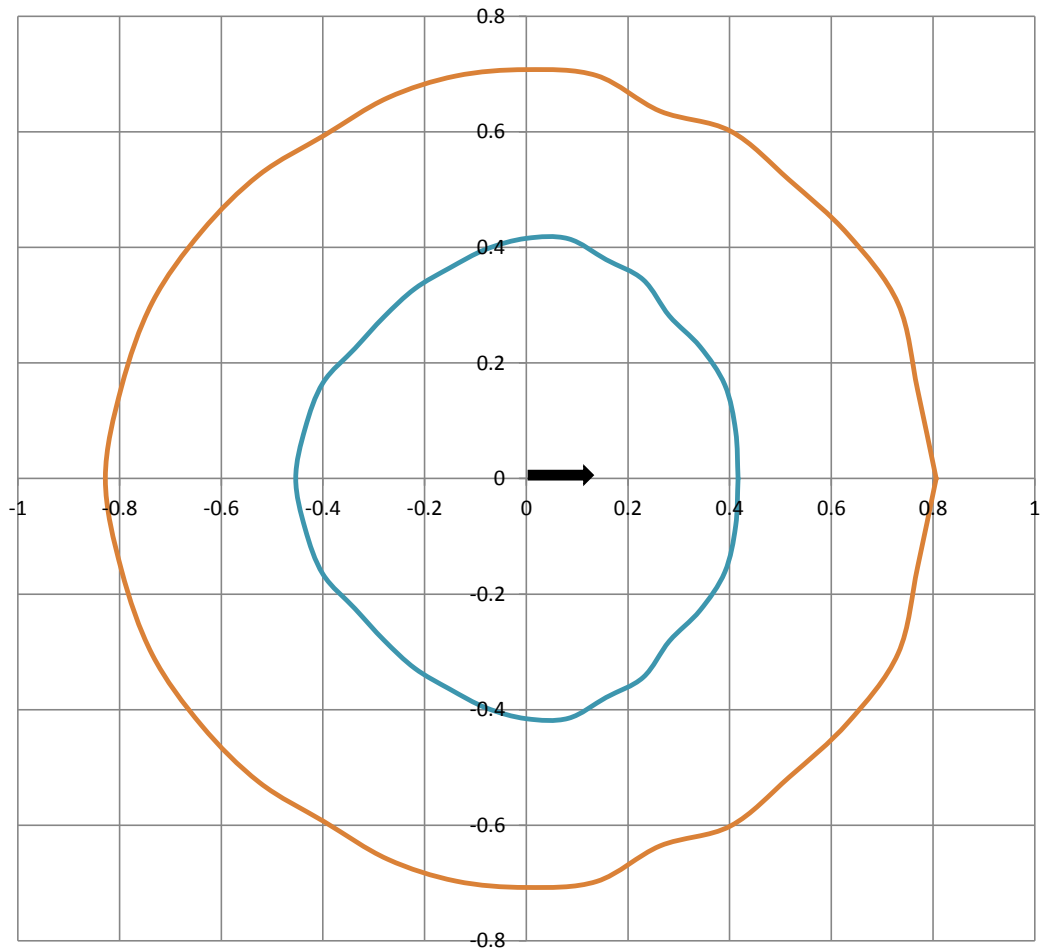
Cone of Light Plot





ISOFootcandle Plot

Mounting Height - 8 Feet



Grid Lines in Units of Mounting Height

