



LUMINAIRE TESTING LABORATORY, INC.

SUSTAINING
MEMBER
of the
IESNA

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LTL NUMBER: 12823 DATE: 01-01-2010
 PREPARED FOR: LUMINAIRE TESTING LABORATORY, INC.
 CATALOG NUMBER: SAMPLE INDOOR LED TEST REPORT
 LUMINAIRE: FORMED ALUMINUM HEATSINK HOUSING, NO ENCLOSURE.
 LAMP: 9 WHITE LEDS
 LED POWER SUPPLY: ONE UNMARKED LED POWER SUPPLY
 MOUNTING: SURFACE
 ELECTRICAL VALUES: 120.0VAC, 0.1782A, 16.49W, PF=0.771
 NOTE: THIS TEST WAS PERFORMED USING THE CALIBRATED
 PHOTODETECTOR METHOD OF ABSOLUTE PHOTOMETRY.*

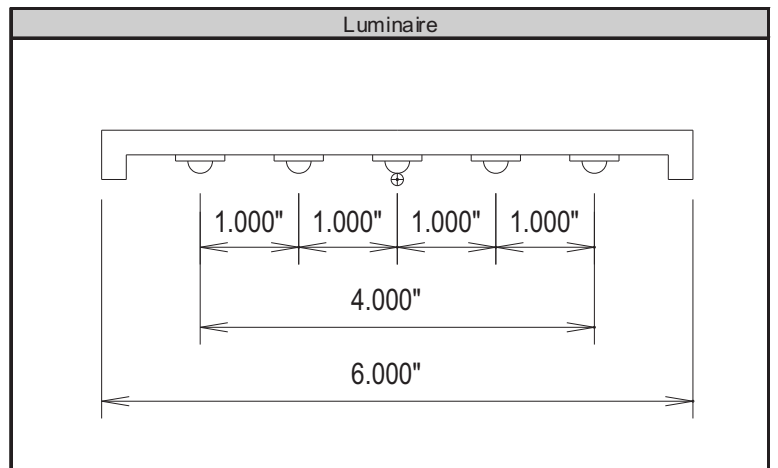
Candela Distribution

	0	22.5	45	67.5	90	112.5	135	157.5	180	202.5	225	247.5	270	292.5	315	337.5	Flux
0	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127	
5	126	126	126	126	126	126	126	126	126	126	126	126	126	126	126	126	11.9
15	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	33.9
25	109	109	109	109	109	109	109	109	109	109	109	109	109	109	109	109	50.0
35	91	91	91	91	91	91	91	91	91	91	91	91	91	91	91	91	56.7
45	68	68	68	68	68	68	68	68	68	68	68	68	68	68	68	68	52.7
55	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	41.5
65	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27.2
75	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13.5
85	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3.1
90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
95	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
105	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
115	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
125	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
135	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
145	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
155	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
165	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
175	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
180	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Zonal Lumen Summary

Zone	Lumens	% of Lamp	% of Luminaire
0-30	95.9	N/A	33.0%
0-40	152.5	N/A	52.5%
0-60	246.7	N/A	84.9%
0-90	290.5	N/A	100.0%
90-180	0.0	N/A	0.0%
0-180	290.5	N/A	100.0%

Total lumen Output: 290.5 Lumens
 Luminaire efficacy: 17.6 Lumens per Watt
 CIE Type: Direct
 Spacing Criterion: 1.18



Approved By: MG

*DATA WAS ACQUIRED USING THE CALIBRATED PHOTODETECTOR METHOD OF ABSOLUTE PHOTOMETRY. A UDT MODEL #211 PHOTODETECTOR AND UDT MODEL #S370 OPTOMETER COMBINATION WERE USED AS A STANDARD. A SPECTRAL MISMATCH CORRECTION FACTOR WAS EMPLOYED BASED ON THE SPECTRAL RESPONSIVITY OF THE PHOTODETECTOR AND THE SPECTRAL POWER DISTRIBUTION OF THE TEST SUBJECT.

TESTING WAS PERFORMED IN ACCORDANCE WITH IES LM-79-08.
 TEST ANGULAR INCREMENTS AND REPORT FORMATTING WAS BASED ON IES LM-41-98 AND LM-46-04.



Candela Tabulation (5 degree Vertical Increments)

	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	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127
5	126	126	126	126	126	126	126	126	126	126	126	126	126	126	126	126
10	124	124	124	124	124	124	124	124	124	124	124	124	124	124	124	124
15	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120
20	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115
25	109	109	109	109	109	109	109	109	109	109	109	109	109	109	109	109
30	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101
35	91	91	91	91	91	91	91	91	91	91	91	91	91	91	91	91
40	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80
45	68	68	68	68	68	68	68	68	68	68	68	68	68	68	68	68
50	57	57	57	57	57	57	57	57	57	57	57	57	57	57	57	57
55	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46
60	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36
65	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27
70	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19
75	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13
80	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
85	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
95	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
105	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
110	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
115	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
120	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
125	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
130	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
135	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
140	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
145	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
150	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
155	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
160	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
165	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
170	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
175	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
180	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Zonal Lumen Tabulation (5 degree zones)

Zone	Lumens	Zone	Lumens	Zone	Lumens	Zone	Lumens
0-5	3.0	45-50	25.3	90-95	0.0	135-140	0.0
5-10	8.9	50-55	22.5	95-100	0.0	140-145	0.0
10-15	14.5	55-60	19.0	100-105	0.0	145-150	0.0
15-20	19.4	60-65	15.4	105-110	0.0	150-155	0.0
20-25	23.5	65-70	11.8	110-115	0.0	155-160	0.0
25-30	26.5	70-75	8.3	115-120	0.0	160-165	0.0
30-35	28.2	75-80	5.2	120-125	0.0	165-170	0.0
35-40	28.5	80-85	2.5	125-130	0.0	170-175	0.0
40-45	27.4	85-90	0.6	130-135	0.0	175-180	0.0



Utilization of Lumens - Zonal Cavity Method												
Effective Floor Cavity Reflectance 20%												
Ceiling Cavity Reflectance	90				80				70			
Wall Reflectance	70	50	30	10	70	50	30	10	70	50	30	10
Room Cavity Ratio (RCR)	** Values are expressed as Lumens delivered to the task surface **											
0	354.2	354.2	354.2	354.2	345.8	345.8	345.8	345.8	337.8	337.8	337.8	337.8
1	327.4	313.5	301.2	290.2	319.2	306.7	295.5	285.4	311.5	300.2	290	280.8
2	300.7	276.5	256.8	240.4	292.8	270.9	252.8	237.5	285.4	265.5	248.9	234.7
3	276.2	245.2	221.6	202.9	268.9	240.5	218.6	201.1	261.9	236	215.7	199.3
4	254.4	218.9	193.4	174.2	247.6	215	191.2	173	241.1	211.2	189	171.8
5	235	196.8	170.7	151.6	228.7	193.5	169	150.8	222.8	190.4	167.3	150
6	217.7	178.1	152.1	133.6	212	175.3	150.7	133	206.6	172.6	149.4	132.5
7	202.3	162.1	136.6	118.9	197.2	159.8	135.5	118.5	192.3	157.5	134.4	118.1
8	188.7	148.4	123.6	106.8	184	146.4	122.8	106.5	179.6	144.4	121.9	106.2
9	176.5	136.6	112.7	96.7	172.3	134.9	111.9	96.46	168.3	133.2	111.2	96.22
10	165.6	126.3	103.3	88.12	161.8	124.8	102.7	87.93	158.2	123.3	102.1	87.74

Ceiling Cavity Reflectance	50				30			10			0
Wall Reflectance	70	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	322.8	322.8	322.8	322.8	309	309	309	296.4	296.4	296.4	290.5
1	297.1	288	279.6	272	276.7	270	263.7	266.4	261	255.9	250
2	271.8	255.4	241.4	229.3	246	234.4	224.2	237.4	227.8	219.2	213.2
3	249.1	227.5	210.2	195.8	219.7	204.9	192.5	212.4	200	189.3	183.2
4	229.3	204.1	184.8	169.5	197.5	180.8	167.2	191.3	177	165	159.1
5	212	184.3	164	148.4	178.7	160.9	146.9	173.5	157.9	145.3	139.5
6	196.8	167.5	146.8	131.3	162.7	144.3	130.2	158.3	141.9	129.1	123.4
7	183.3	153.1	132.4	117.3	149	130.4	116.5	145.1	128.4	115.7	110.1
8	171.5	140.7	120.2	105.6	137.1	118.6	105	133.8	117	104.4	99.04
9	160.9	129.9	109.8	95.74	126.8	108.5	95.27	123.9	107.1	94.8	89.69
10	151.5	120.5	100.9	87.37	117.8	99.76	87	115.3	98.66	86.64	81.73

Average Luminance Table (cd/m²)

	0	45	90
0	15641	15641	15641
45	11917	11917	11917
55	9953	9953	9953
65	7979	7979	7979
75	6025	6025	6025
85	3713	3713	3713

THIS TEST WAS CONDUCTED USING PHOTOMETRY TECHNIQUES ACCORDING TO STANDARD IES PROCEDURES. THE USER MUST THEREFORE USE CAUTION IN THE FOLLOWING SITUATIONS: 1) THIS TEST WAS PERFORMED USING A SPECIFIC BALLAST/LAMP COMBINATION. EXTRAPOLATION OF THESE DATA FOR OTHER BALLAST/LAMP COMBINATIONS MAY PRODUCE ERRONEOUS RESULTS. 2) THIS TEST WAS CONDUCTED IN A CONTROLLED LABORATORY ENVIRONMENT WHERE THE AMBIENT TEMPERATURE WAS HELD AT 25°C ±1°C. FIELD PERFORMANCE MAY DIFFER PARTICULARLY IN REGARDS TO CHANGE IN LUMINOUS OUTPUT AS A RESULT OF DIFFERENCE IN AMBIENT TEMPERATURE AND METHOD OF MOUNTING THE LUMINAIRE.

