

REPORT NUMBER: ITL72181

PAGE: 1 OF 5

ISSUE DATE: 03/26/12

PREPARED FOR: LIGHTEL TECHNOLOGIES, INC.

CATALOG NUMBER: LLT-5-T8-C-S-W-120-110V-50K

LUMINAIRE: EXTRUDED SEMI-DIFFUSE METAL STRIP HOUSING WITH EXTRUDED BLACK PLASTIC CHANNEL INSERTS AND MOLDED BLACK PLASTIC END CAPS.

LAMP: ONE T-8 STYLE 5-FOOT LINEAR LED LAMP WITH BI-PIN CONTACTS AND INTEGRAL LED DRIVER, ALEDDRA LLT-5-T8-C-S-W-120-110V-50K. LAMP HORIZONTAL WITH LEDS VERTICAL BASE-UP POSITION.

MOUNTING: SURFACE

NOTE: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED AT RATED INPUT VOLTAGE (120VAC, 60Hz) TO THE LAMP.

THE 0 DEGREE PLANE IS PARALLEL WITH THE LAMP.

TOTAL INPUT WATTS = 23.3 AT 120.0 VOLTS

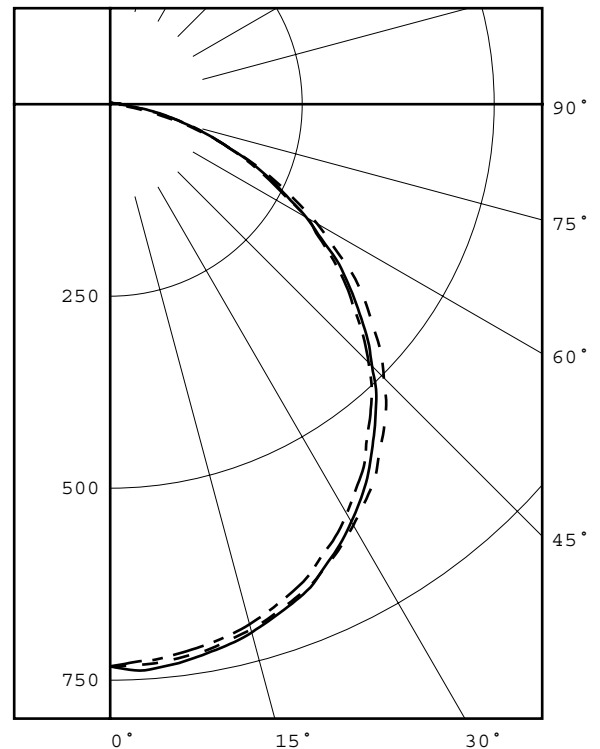
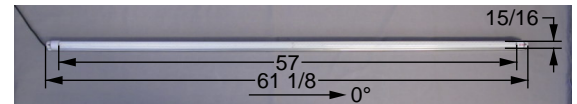
TEST PROCEDURE: IESNA LM-79-08

TEST DISTANCE = 33.25 FEET

CANDELA DISTRIBUTION

FLUX

	0.0	22.5	45.0	67.5	90.0	
0	732	732	732	732	732	69
5	730	731	736	724	725	199
15	708	706	712	701	701	304
25	664	662	663	653	650	366
35	599	594	586	577	576	376
45	504	497	482	477	476	328
55	385	378	364	362	355	230
65	238	237	229	229	224	114
75	99	107	106	110	109	29
85	9	27	24	24	18	9
90	0	10	16	20	13	4
95	0	5	9	12	11	2
105	0	1	5	5	5	1
115	0	0	3	4	4	0
125	0	0	1	2	2	0
135	0	0	0	0	0	0
145	0	0	0	0	0	0
155	0	0	0	0	0	0
165	0	0	0	0	0	0
175	0	0	0	0	0	0
180	0	0	0	0	0	0



LEGEND:
0-deg - - - - -
45-deg = = = = =
90-deg - - - - -

ZONAL LUMEN SUMMARY

ZONE	LUMENS	%FIXT
0- 30	572	28.2
0- 40	938	46.2
0- 60	1642	80.8
0- 90	2015	99.2
90-120	15	0.8
90-130	16	0.8
90-150	17	0.8
90-180	17	0.8
0-180	2031	100.0

EFFICACY = 87.2 lm/W

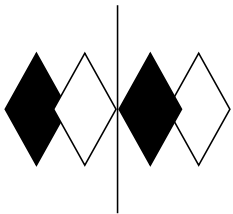
CIE TYPE - DIRECT

PLANE : 0-DEG 90-DEG

SPACING CRITERIA : 1.28 1.25

Checked *S.BERGIN*

Approved *R.BEATTIE*
Lighting Engineer



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CANDELA DISTRIBUTION

	0.0	22.5	45.0	67.5	90.0
0.0	732	732	732	732	732
5.0	730	731	736	724	725
10.0	722	721	726	716	715
15.0	708	706	712	701	701
20.0	689	686	692	679	680
25.0	664	662	663	653	650
30.0	633	631	628	618	616
35.0	599	594	586	577	576
40.0	554	546	537	530	527
45.0	504	497	482	477	476
50.0	446	443	424	424	415
55.0	385	378	364	362	355
60.0	311	309	295	301	297
65.0	238	237	229	229	224
70.0	164	169	163	168	163
75.0	99	107	106	110	109
80.0	40	56	61	59	55
85.0	9	27	24	24	18
90.0	0	10	16	20	13
95.0	0	5	9	12	11
100.0	0	3	7	7	7
105.0	0	1	5	5	5
110.0	0	1	4	4	4
115.0	0	0	3	4	4
120.0	0	0	2	3	3
125.0	0	0	1	2	2
130.0	0	0	0	1	1
135.0	0	0	0	0	0
140.0	0	0	0	0	0
145.0	0	0	0	0	0
150.0	0	0	0	0	0
155.0	0	0	0	0	0
160.0	0	0	0	0	0
165.0	0	0	0	0	0
170.0	0	0	0	0	0
175.0	0	0	0	0	0
180.0	0	0	0	0	0



INDEPENDENT TESTING LABORATORIES, INC.
3386 LONGHORN ROAD, BOULDER, CO 80302 USA

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5-DEGREE
ZONAL LUMEN SUMMARY

0- 5	17.
5- 10	52.
10- 15	85.
15- 20	115.
20- 25	141.
25- 30	162.
30- 35	178.
35- 40	188.
40- 45	190.
45- 50	186.
50- 55	174.
55- 60	154.
60- 65	129.
65- 70	100.
70- 75	71.
75- 80	43.
80- 85	20.
85- 90	9.
90- 95	6.
95-100	3.
100-105	2.
105-110	2.
110-115	1.
115-120	1.
120-125	1.
125-130	0.
130-135	0.
135-140	0.
140-145	0.
145-150	0.
150-155	0.
155-160	0.
160-165	0.
165-170	0.
170-175	0.
175-180	0.

10-DEGREE
ZONAL LUMEN SUMMARY

0- 10	69.
0- 20	269.
0- 30	572.
0- 40	938.
0- 50	1314.
0- 60	1642.
0- 70	1872.
0- 80	1986.
0- 90	2015.
0-100	2024.
0-110	2028.
0-120	2030.
0-130	2031.
0-140	2031.
0-150	2031.
0-160	2031.
0-170	2031.
0-180	2031.



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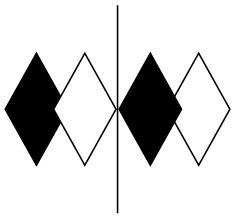
PREPARED FOR: LIGHTEL TECHNOLOGIES, INC.

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
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	101	101	101	99
1	109	104	100	97	106	102	98	95	98	95	92	94	91	89	90	88	86	84
2	99	91	85	79	97	89	83	78	86	81	76	82	78	74	79	76	73	70
3	91	80	72	66	88	79	71	65	76	69	64	73	67	63	70	66	62	60
4	83	71	63	56	81	70	62	56	67	60	55	65	59	54	63	58	53	51
5	76	64	55	48	74	63	54	48	60	53	48	58	52	47	56	51	46	44
6	71	57	49	42	69	56	48	42	55	47	42	53	46	41	51	45	41	39
7	66	52	43	37	64	51	43	37	50	42	37	48	41	37	47	41	36	34
8	61	48	39	33	59	47	39	33	45	38	33	44	38	33	43	37	32	31
9	57	44	35	30	56	43	35	30	42	35	30	41	34	29	40	34	29	27
10	53	40	32	27	52	40	32	27	39	32	27	38	31	27	37	31	27	25

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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NVLAP LAB CODE: 200925-0

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ADDRESS: 2210 LIND AVE SW
SUITE 100
RENTON, WA 98057

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PREPARED FOR: LIGHTEL TECHNOLOGIES, INC.
CATALOG NUMBER: LLT-5-T8-C-S-W-120-110V-50K

ADDRESS: 2210 LIND AVE SW
SUITE 100
RENTON, WA 98057

LUMINAIRE: EXTRUDED SEMI-DIFFUSE METAL STRIP HOUSING WITH EXTRUDED BLACK PLASTIC CHANNEL INSERTS AND MOLDED BLACK PLASTIC END CAPS.

LAMP: ONE T-8 STYLE 5-FOOT LINEAR LED LAMP WITH BI-PIN CONTACTS AND INTEGRAL LED DRIVER, ALEDDRA LLT-5-T8-C-S-W-120-110V-50K. LAMP HORIZONTAL WITH LEDS VERTICAL BASE-UP POSITION.

DRIVER: INTEGRAL

ORIENTATION IN SPHERE: NORMAL OPERATING POSITION

NOTE: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED AT RATED INPUT VOLTAGE (120VAC, 60Hz) TO THE LAMP.

		Calibration Due:
INSTRUMENTS:	Associated Power Technologies APT6040 AC Power Source	N/A
	Yokogawa WT210 Digital Power Meter #6	09/28/12
	Ocean Optics QE65000 Spectroradiometer	11/01/12
	ITL 2.0 meter Diameter Integrating Sphere, 4PI Geometry	11/01/12

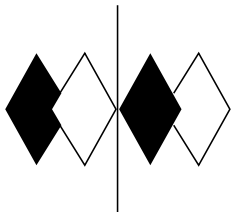
OBJECT OF TEST: Measure the Spectral Power Distribution (SPD), Correlated Color Temperature (CCT), Color Rendering Indices (CRIa,1-14), Chromaticity Coordinates (x,y), ANSI C78.377 Duv, and electrical data including Power Factor (PF) to the test sample.

PROCEDURE: The test sample was provided by the customer and had an unknown number of burn hours. The test sample was mounted inside the integrating sphere and allowed to stabilize. After stabilization occurred, measurements were taken. In order to measure mean performance, multiple data sets were recorded and averaged. Readings were taken with the test sample operating at 120VAC input in a 25 +/-1 degree Celsius free air ambient and in accordance with IESNA LM-79-08. All data are traceable to the National Institute of Standards and Technology.

RESULTS: (continued subsequent pages)

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Checked	<i>T BERGER</i>
Approved	<i>N GULLY</i> Lighting Engineer



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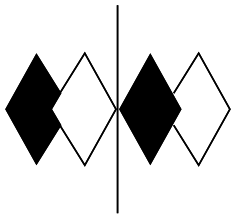


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RESULTS:

SPECTRORADIOMETRIC	
Observer	CIE 1931 2 degree
Chromaticity Ordinate x	0.3376
Chromaticity Ordinate y	0.3513
Correlated Color Temp CCT (K)	5291
Color Rendering Index (CRIa)	84
Color Rendering Index 1 (Light greyish red)	82
Color Rendering Index 2 (Dark greyish yellow)	89
Color Rendering Index 3 (Strong yellowish green)	92
Color Rendering Index 4 (Moderate yellowish green)	83
Color Rendering Index 5 (Light bluish green)	82
Color Rendering Index 6 (Light blue)	84
Color Rendering Index 7 (Light violet)	89
Color Rendering Index 8 (Light reddish purple)	71
Color Rendering Index 9 (Strong red)	18
Color Rendering Index 10 (Strong yellow)	72
Color Rendering Index 11 (Strong green)	81
Color Rendering Index 12 (Strong blue)	62
Color Rendering Index 13 (Light yellowish pink (skin))	84
Color Rendering Index 14 (Moderate olive green (leaf))	96
ANSI C78.377-2008 Duv	0.003
ELECTRICAL FOR SPECTRORADIOMETRIC TEST	
Input Voltage (Volts AC)	120.0
Input Current (Amps AC)	0.220
Input Power (Watts)	23.4
Input Power Factor (%)	88.6



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RESULTS:

Wavelength	mW per nm	Wavelength	mW per nm	Wavelength	mW per nm
380	0.611	515	24.605	650	16.136
385	0.686	520	25.912	655	14.748
390	0.774	525	27.062	660	13.428
395	0.967	530	28.070	665	12.166
400	1.198	535	28.958	670	10.977
405	1.651	540	29.749	675	9.863
410	1.760	545	30.418	680	8.840
415	2.166	550	30.943	685	7.905
420	3.279	555	31.324	690	7.052
425	5.499	560	31.576	695	6.267
430	8.520	565	31.683	700	5.568
435	13.383	570	31.646	705	4.938
440	21.995	575	31.487	710	4.371
445	36.245	580	31.227	715	3.866
450	49.315	585	30.873	720	3.416
455	47.583	590	30.401	725	3.017
460	35.877	595	29.797	730	2.664
465	27.853	600	29.063	735	2.350
470	22.600	605	28.185	740	2.070
475	18.006	610	27.158	745	1.825
480	15.723	615	26.001	750	1.607
485	15.492	620	24.729	755	1.418
490	16.175	625	23.372	760	1.256
495	17.568	630	21.932	765	1.111
500	19.459	635	20.459	770	0.985
505	21.378	640	19.014	775	0.874
510	23.098	645	17.560	780	0.774

