

REPORT NUMBER: ITL70247

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PREPARED FOR: PRECISION ARCHITECTURAL LIGHTING

CATALOG NUMBER: LTS-01-X-4-X-OP/MPL-X-120-T5

LUMINAIRE: EXTRUDED SEMI-DIFFUSE METAL HOUSING WITH FABRICATED SEMI-DIFFUSE METAL END CAPS, TWO FORMED METAL SIDE REFLECTORS WITH PREMIUM SPECULAR FINISH, CLEAR FLAT MICRO-PRISMATIC PLASTIC LENS. LENS PRISMS DOWN. OPEN TOP.

LAMP: ONE 28-WATT T-5 SYLVANIA FP28/841/ECO LINEAR FLUORESCENT.

BALLAST: UNIVERSAL B228PUNV-C

MOUNTING: SUSPENDED

THE 0 DEGREE PLANE IS PARALLEL WITH THE LAMP.

TOTAL INPUT WATTS = 31.7 AT 120.0 VOLTS

LUMEN TO CANDELA RATIO USED = 9.17

REPORT IS BASED ON 2600 LUMENS PER LAMP. *

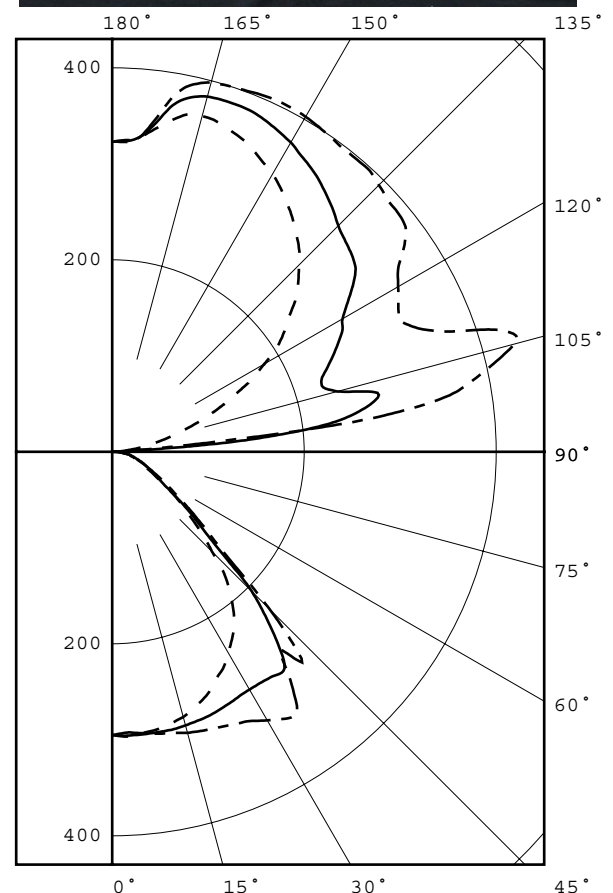
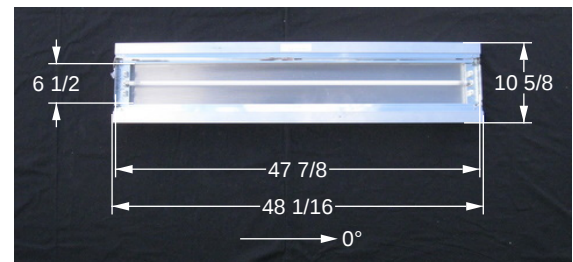
CANDELA DISTRIBUTION						FLUX
	0.0	22.5	45.0	67.5	90.0	
0	295	295	295	295	295	
5	295	297	296	294	294	28
15	286	289	295	300	303	83
25	259	270	289	305	312	133
35	222	244	287	324	334	174
45	147	187	206	247	232	152
55	79	82	80	89	88	77
65	39	45	43	45	44	44
75	23	28	25	25	25	27
85	10	12	10	11	9	11
90	0	0	0	0	0	
95	13	117	142	169	75	124
105	66	138	243	398	434	263
115	142	198	258	309	330	251
125	219	254	307	350	371	269
135	275	295	333	381	393	260
145	317	333	361	391	399	226
155	347	358	380	398	404	174
165	362	367	383	393	398	107
175	328	326	329	327	329	32
180	323	323	323	323	323	

ZONAL LUMEN SUMMARY			
ZONE	LUMENS	%LAMP	%FIXT
0- 30	245	9.4	10.0
0- 40	419	16.1	17.2
0- 60	647	24.9	26.6
0- 90	729	28.0	29.9
90-120	638	24.5	26.2
90-130	907	34.9	37.2
90-150	1393	53.6	57.2
90-180	1707	65.7	70.1
0-180	2437	93.7	100.0

TOTAL LUMINAIRE EFFICIENCY = 93.7 % *

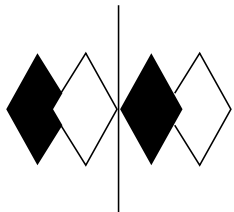
CIE TYPE - SEMI-INDIRECT
PLANE : 0-DEG 90-DEG
SHIELDING ANGLES : 90 90

* SEE ADDENDUM FOR FURTHER INFORMATION



LEGEND:
0-deg: - - - - -
45-deg: _____
90-deg: - - - - -

Checked M. KLOPF
Approved R. BEATTIE
Lighting Engineer



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INDEPENDENT TESTING LABORATORIES, INC.
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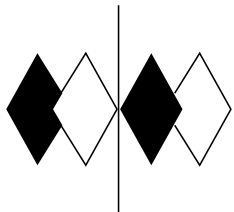
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PLANE : 0-DEG 90-DEG
LUMINOUS LENGTH : 44.125 5.500

LUMINANCE DATA IN CANDELA/SQ M

ANGLE IN DEG	AVERAGE 0-DEG	AVERAGE 45-DEG	AVERAGE 90-DEG
45	1328.	1861.	2096.
55	880.	891.	980.
65	589.	650.	665.
75	568.	617.	617.
85	733.	733.	660.



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CANDELA DISTRIBUTION

	0.0	22.5	45.0	67.5	90.0
0.0	295	295	295	295	295
5.0	295	297	296	294	294
10.0	292	294	296	297	298
15.0	286	289	295	300	303
20.0	275	281	293	302	307
25.0	259	270	289	305	312
30.0	242	257	286	311	323
35.0	222	244	287	324	334
40.0	191	230	275	280	271
45.0	147	187	206	247	232
50.0	108	116	120	140	131
55.0	79	82	80	89	88
60.0	54	59	56	59	62
65.0	39	45	43	45	44
70.0	30	34	32	33	34
75.0	23	28	25	25	25
80.0	19	19	19	19	18
85.0	10	12	10	11	9
90.0	0	0	0	0	0
95.0	13	117	142	169	75
100.0	36	108	269	354	366
105.0	66	138	243	398	434
110.0	102	173	234	314	366
115.0	142	198	258	309	330
120.0	183	226	277	337	344
125.0	219	254	307	350	371
130.0	250	274	324	372	388
135.0	275	295	333	381	393
140.0	298	316	348	384	397
145.0	317	333	361	391	399
150.0	334	347	372	396	403
155.0	347	358	380	398	404
160.0	357	366	384	397	401
165.0	362	367	383	393	398
170.0	350	353	367	371	378
175.0	328	326	329	327	329
180.0	323	323	323	323	323



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5-DEGREE

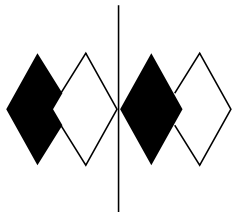
ZONAL LUMEN SUMMARY

0- 5	7.
5- 10	21.
10- 15	35.
15- 20	48.
20- 25	61.
25- 30	72.
30- 35	84.
35- 40	91.
40- 45	87.
45- 50	65.
50- 55	45.
55- 60	32.
60- 65	25.
65- 70	19.
70- 75	15.
75- 80	12.
80- 85	8.
85- 90	3.
90- 95	22.
95-100	103.
100-105	134.
105-110	129.
110-115	123.
115-120	128.
120-125	134.
125-130	136.
130-135	133.
135-140	127.
140-145	118.
145-150	108.
150-155	95.
155-160	80.
160-165	63.
165-170	44.
170-175	25.
175-180	8.

10-DEGREE

ZONAL LUMEN SUMMARY

0- 10	28.
0- 20	112.
0- 30	245.
0- 40	419.
0- 50	570.
0- 60	647.
0- 70	691.
0- 80	718.
0- 90	729.
0-100	853.
0-110	1116.
0-120	1367.
0-130	1636.
0-140	1896.
0-150	2122.
0-160	2297.
0-170	2404.
0-180	2437.



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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
0	96	96	96	96	86	86	86	86	68	68	68	51	51	51	35	35	35	28
1	88	84	81	78	79	76	73	70	60	58	56	45	44	43	32	31	30	24
2	80	74	68	64	72	66	62	58	53	50	47	40	38	36	28	27	26	21
3	73	65	59	54	66	59	53	49	47	43	40	36	33	31	26	24	23	18
4	67	58	51	46	60	52	46	42	42	38	34	32	29	27	23	21	20	16
5	62	52	44	39	55	47	41	36	37	33	30	29	26	24	21	19	18	14
6	57	46	39	34	51	42	36	31	34	29	26	26	23	21	19	17	16	13
7	53	42	35	30	47	38	32	27	31	26	23	24	21	18	17	15	14	11
8	49	38	31	26	44	34	28	24	28	23	20	22	19	16	16	14	12	10
9	45	34	28	23	41	31	25	21	25	21	18	20	17	15	15	13	11	9
10	42	31	25	21	38	29	23	19	23	19	16	18	15	13	14	12	10	8

ALL CANDELA, LUMENS, LUMINANCE, COEFFICIENT OF UTILIZATION AND VCP VALUES IN THIS REPORT ARE BASED ON RELATIVE PHOTOMETRY WHICH ASSUMES A BALLAST FACTOR OF 1.000. ANY CALCULATIONS PREPARED FROM THESE DATA SHOULD INCLUDE AN APPROPRIATE BALLAST FACTOR.



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ADDENDUM

SPECIAL TEST PROCEDURES FOR T-5 LAMPS INCLUDING EXPLANATION OF THE IMPORTANCE OF LAMP LUMEN RATINGS.

This test was performed using standard relative photometric practices in accordance with recommendations of the Illuminating Engineering Society of North America. Fluorescent testing using the guidelines of relative photometric practice presupposes that the lamps will be operated at their nominal electrical characteristics (e.g., a 40 watt lamp will operate very nearly at 40 watts, and at the voltage and current required for 40-watt operation). Fluorescent lamps in general are temperature sensitive, the lumen output varies with ambient temperature and follows a characteristic curve. The T-5 fluorescent lamps used in this test produce maximum light output in an ambient temperature other than 25 degrees C. A critical step in relative photometric testing involves measurement of the total flux output from the lamp(s) suspended in free air at a 25 degree C ambient temperature per IES LM41-1998. This measurement process is a separate step from the photometric exploration of the luminaire itself. This "bare lamp" measurement is made with the lamp(s) operated by the same ballast(s) which are to be used in the luminaire. Since the test procedure involves measuring the bare lamp flux output at 25 degrees C and this lamp type peaks at a temperature other than 25 degrees C, the flux measured for this lamp type will be less than the maximum output the lamp is designed to produce.

As a result, the measurement of the "bare lamp" total flux output is lower than it would be if the lamps were operated at their optimum operating temperature and at nominal electrical characteristics. When this "bare lamp" measurement is incorporated into the luminaire test report, the net effect is that total luminaire efficiency on the report is higher than what the lighting industry would expect this luminaire to produce. These lighting industry expectations are based on comparisons to the total luminaire efficiency of the same luminaire with T-12 or T-8 lamps.

On this particular test, the lamp lumen rating shown is for a 25 degree C ambient temperature. Since this report was based the lumen lamp lumen rating at 25 degrees C, the candela values in this report should be accurate, as long as the lamp(s) used for this test follow the manufacturer's light output vs. temperature curve.

T5TEMP3.DIS