

REPORT NUMBER: ITL70251

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ISSUE DATE: 11/16/11

PREPARED FOR: PRECISION ARCHITECTURAL LIGHTING

CATALOG NUMBER: LTS-02-X-4-X-OC4/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, WHITE PAINTED METAL UPPER REFLECTOR WITH 141 UPLIGHT APERTURES OF VARIOUS SHAPES AND SIZES, CLEAR FLAT MICRO-PRISMATIC PLASTIC LENS. LENS PRISMS DOWN.

LAMPS: TWO 28-WATT T-5 SYLVANIA FP28/841/ECO LINEAR FLUORESCENTS.

BALLAST: UNIVERSAL B228PUNV-C

MOUNTING: SUSPENDED

THE 0 DEGREE PLANE IS PARALLEL WITH THE LAMPS.

TOTAL INPUT WATTS = 64.2 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	1058	1058	1058	1058	1058	
5	1058	1060	1061	1056	1056	101
15	1027	1036	1050	1060	1066	296
25	946	968	1012	1042	1043	462
35	820	869	913	957	976	571
45	559	630	689	715	723	505
55	274	271	270	280	286	252
65	128	146	142	141	144	142
75	80	91	84	80	82	89
85	37	39	40	41	35	39
90	0	0	0	0	0	
95	27	69	56	50	57	70
105	113	163	259	314	333	245
115	219	266	308	377	394	312
125	326	356	388	413	416	343
135	427	445	469	500	497	362
145	508	522	536	559	560	337
155	555	570	589	597	592	268
165	581	587	597	605	605	168
175	523	523	521	520	519	51
180	511	511	511	511	511	

ZONAL LUMEN SUMMARY

ZONE	LUMENS	%LAMP	%FIXT
0- 30	860	16.5	18.6
0- 40	1431	27.5	31.0
0- 60	2188	42.1	47.4
0- 90	2459	47.3	53.3
90-120	627	12.0	13.6
90-130	970	18.7	21.0
90-150	1669	32.1	36.2
90-180	2156	41.5	46.7
0-180	4615	88.7	100.0

TOTAL LUMINAIRE EFFICIENCY =

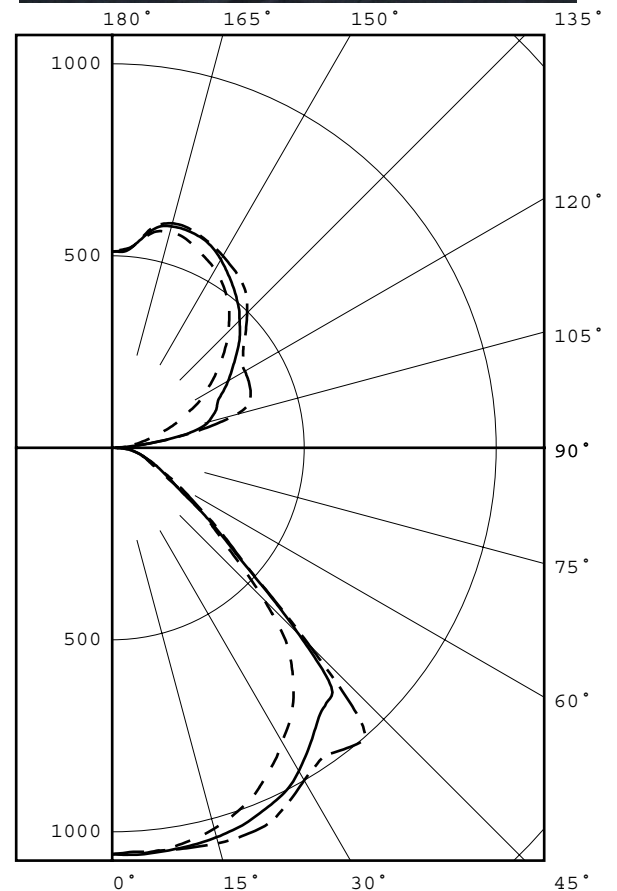
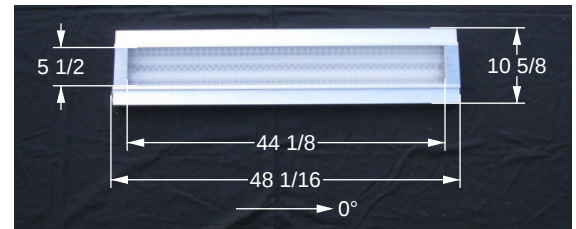
88.7 % *

CIE TYPE - DIRECT-INDIRECT

PLANE : 0-DEG 90-DEG

SPACING CRITERIA : 1.24 1.42

SHIELDING ANGLES : 90 90



LEGEND:

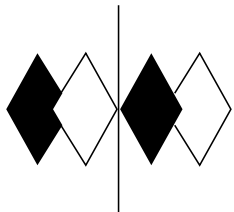
0-deg: - - - - -
45-deg: _____
90-deg: - - - - -

CheckedS.BERGIN.....

ApprovedR.BEATTIE.....
Lighting Engineer

* SEE ADDENDUM FOR FURTHER INFORMATION

THIS REPORT IS BASED ON PUBLISHED INDUSTRY PROCEDURES. FIELD PERFORMANCE MAY DIFFER FROM LABORATORY PERFORMANCE.



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THE LIGHT CENTER OF THE INDUSTRY SINCE 1955

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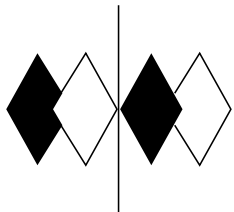
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PLANE : 0-DEG 90-DEG
LUMINOUS LENGTH : 44.125 5.500

LUMINANCE DATA IN CANDELA/SQ M

ANGLE IN DEG	AVERAGE 0-DEG	AVERAGE 45-DEG	AVERAGE 90-DEG
45	5049.	6223.	6530.
55	3051.	3007.	3185.
65	1934.	2146.	2176.
75	1974.	2073.	2024.
85	2711.	2931.	2565.



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CANDELA DISTRIBUTION

	0.0	22.5	45.0	67.5	90.0
0.0	1058	1058	1058	1058	1058
5.0	1058	1060	1061	1056	1056
10.0	1047	1051	1057	1059	1060
15.0	1027	1036	1050	1060	1066
20.0	995	1007	1036	1058	1065
25.0	946	968	1012	1042	1043
30.0	885	922	972	997	1000
35.0	820	869	913	957	976
40.0	724	780	868	968	1003
45.0	559	630	689	715	723
50.0	377	384	406	432	418
55.0	274	271	270	280	286
60.0	182	195	186	187	204
65.0	128	146	142	141	144
70.0	100	112	108	104	111
75.0	80	91	84	80	82
80.0	65	63	62	62	60
85.0	37	39	40	41	35
90.0	0	0	0	0	0
95.0	27	69	56	50	57
100.0	69	130	184	178	191
105.0	113	163	259	314	333
110.0	167	212	288	363	383
115.0	219	266	308	377	394
120.0	277	312	349	382	399
125.0	326	356	388	413	416
130.0	378	402	432	455	452
135.0	427	445	469	500	497
140.0	474	490	505	536	538
145.0	508	522	536	559	560
150.0	536	549	566	579	577
155.0	555	570	589	597	592
160.0	575	582	598	608	604
165.0	581	587	597	605	605
170.0	565	569	572	578	579
175.0	523	523	521	520	519
180.0	511	511	511	511	511



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5-DEGREE

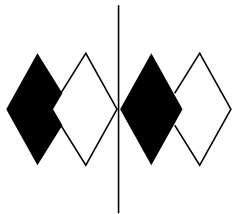
ZONAL LUMEN SUMMARY

0- 5	25.
5- 10	76.
10- 15	125.
15- 20	172.
20- 25	214.
25- 30	248.
30- 35	275.
35- 40	297.
40- 45	295.
45- 50	210.
50- 55	146.
55- 60	106.
60- 65	80.
65- 70	63.
70- 75	50.
75- 80	39.
80- 85	28.
85- 90	12.
90- 95	13.
95-100	57.
100-105	107.
105-110	138.
110-115	151.
115-120	161.
120-125	168.
125-130	176.
130-135	181.
135-140	181.
140-145	175.
145-150	162.
150-155	145.
155-160	123.
160-165	98.
165-170	70.
170-175	39.
175-180	12.

10-DEGREE

ZONAL LUMEN SUMMARY

0- 10	101.
0- 20	397.
0- 30	860.
0- 40	1431.
0- 50	1936.
0- 60	2188.
0- 70	2330.
0- 80	2419.
0- 90	2459.
0-100	2528.
0-110	2773.
0-120	3085.
0-130	3428.
0-140	3790.
0-150	4127.
0-160	4396.
0-170	4564.
0-180	4615.



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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	89	89	89	89	76	76	76	64	64	64	52	52	52	47
1	88	84	81	78	82	78	76	73	67	65	63	57	56	54	47	46	46	41
2	81	75	70	65	75	69	65	61	60	57	54	51	49	46	43	41	40	36
3	74	66	60	55	69	62	56	52	53	49	46	46	43	40	38	36	35	31
4	68	59	52	47	63	55	49	45	48	43	40	41	38	35	35	32	30	27
5	63	53	46	41	58	50	44	39	43	39	35	37	34	31	32	29	27	24
6	58	48	41	36	54	45	39	34	39	34	31	34	30	27	29	26	24	22
7	54	43	37	32	50	41	35	30	36	31	27	31	27	24	27	24	21	19
8	50	39	33	28	47	37	31	27	33	28	24	28	25	22	24	22	19	17
9	47	36	30	25	43	34	28	24	30	25	22	26	22	20	23	20	18	16
10	44	33	27	23	41	31	26	22	28	23	20	24	21	18	21	18	16	14

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