

REPORT NUMBER: ITL71198

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ISSUE DATE: 02/09/12

PREPARED FOR: PRECISION ARCHITECTURAL LIGHTING

CATALOG NUMBER: LTS-02-X-4-X-OC2/PB-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 62 UPLIGHT APERTURES OF VARIOUS SHAPES AND SIZES, FABRICATED SEMI-SPECULAR METAL PARABOLIC 29-CELL LOUVER.

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 = 64.5 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	1183	1183	1183	1183	1183	
5	1185	1185	1182	1178	1176	112
15	1120	1133	1150	1167	1175	325
25	1015	1043	1094	1156	1176	506
35	878	926	1018	1099	1147	636
45	695	788	911	1043	1099	699
55	450	591	727	786	833	606
65	84	149	351	543	682	356
75	18	25	40	167	258	109
85	4	5	6	10	14	11
90	0	0	0	0	0	
95	11	37	21	27	20	32
105	45	75	115	143	142	108
115	82	110	133	161	163	131
125	121	145	169	185	181	146
135	159	180	197	212	208	149
145	190	204	218	229	224	134
155	213	221	232	239	235	106
165	228	230	235	238	238	66
175	235	234	234	232	233	22
180	233	233	233	233	233	

ZONAL LUMEN SUMMARY

ZONE	LUMENS	%LAMP	%FIXT
0- 30	943	18.1	22.2
0- 40	1580	30.4	37.1
0- 60	2885	55.5	67.8
0- 90	3361	64.6	79.0
90-120	271	5.2	6.4
90-130	417	8.0	9.8
90-150	701	13.5	16.5
90-180	895	17.2	21.0
0-180	4256	81.8	100.0

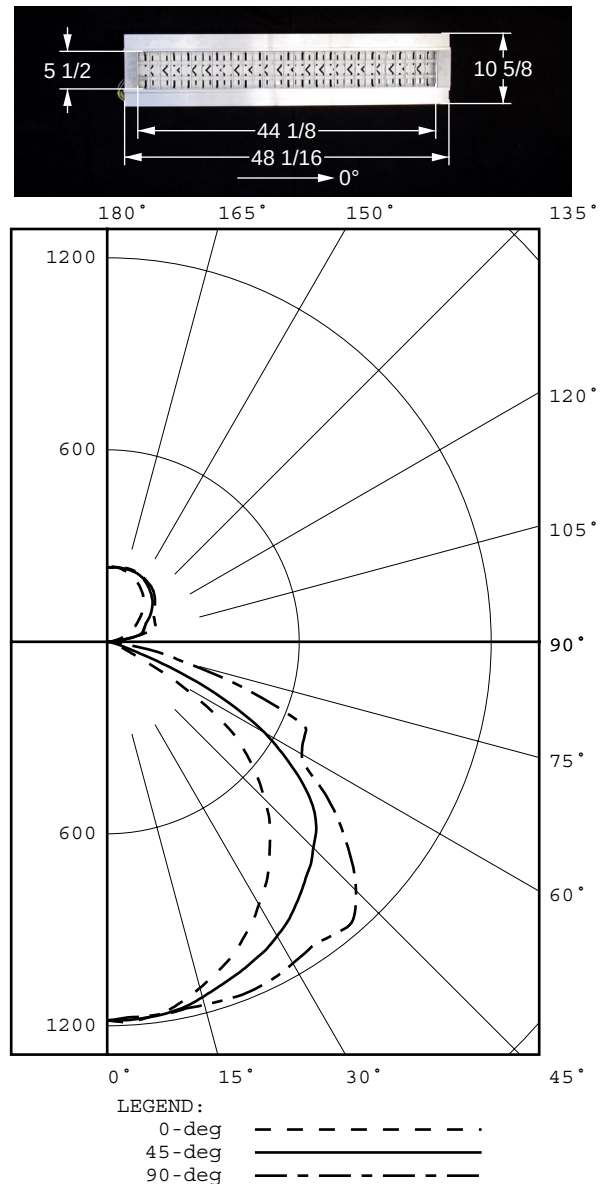
TOTAL LUMINAIRE EFFICIENCY = 81.8 % *

CIE TYPE - SEMI-DIRECT

PLANE : 0-DEG 90-DEG

SPACING CRITERIA : 1.20 1.50

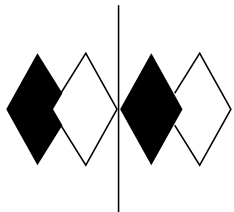
SHIELDING ANGLES : 27 15



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.
3386 LONGHORN ROAD, BOULDER, CO 80302 USA

PHONE: (303)442-1255 • FAX: (303)449-5274 • E-MAIL: itl@itlboulder.com • WEBSITE: www.itlboulder.com

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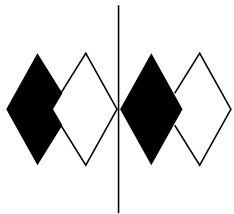
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PLANE : 0-DEG 90-DEG
LUMINOUS LENGTH : 44.125 5.500

LUMINANCE DATA IN CANDELA/SQ M

ANGLE IN DEG	AVERAGE 0-DEG	AVERAGE 45-DEG	AVERAGE 90-DEG
45	6278.	8229.	9927.
55	5011.	8095.	9276.
65	1269.	5305.	10307.
75	444.	987.	6367.
85	293.	440.	1026.



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CANDELA DISTRIBUTION

	0.0	22.5	45.0	67.5	90.0
0.0	1183	1183	1183	1183	1183
5.0	1185	1185	1182	1178	1176
10.0	1163	1167	1173	1175	1176
15.0	1120	1133	1150	1167	1175
20.0	1073	1089	1122	1165	1180
25.0	1015	1043	1094	1156	1176
30.0	948	984	1062	1131	1160
35.0	878	926	1018	1099	1147
40.0	792	861	965	1085	1165
45.0	695	788	911	1043	1099
50.0	585	703	849	932	976
55.0	450	591	727	786	833
60.0	249	393	569	634	702
65.0	84	149	351	543	682
70.0	37	54	126	387	519
75.0	18	25	40	167	258
80.0	10	13	17	33	114
85.0	4	5	6	10	14
90.0	0	0	0	0	0
95.0	11	37	21	27	20
100.0	27	61	83	86	81
105.0	45	75	115	143	142
110.0	63	92	123	156	160
115.0	82	110	133	161	163
120.0	103	127	152	170	168
125.0	121	145	169	185	181
130.0	142	164	185	199	195
135.0	159	180	197	212	208
140.0	176	194	208	223	218
145.0	190	204	218	229	224
150.0	202	213	227	235	230
155.0	213	221	232	239	235
160.0	222	227	234	240	238
165.0	228	230	235	238	238
170.0	233	234	235	235	236
175.0	235	234	234	232	233
180.0	233	233	233	233	233



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5-DEGREE

ZONAL LUMEN SUMMARY

0- 5	28.
5- 10	84.
10- 15	138.
15- 20	187.
20- 25	233.
25- 30	273.
30- 35	305.
35- 40	331.
40- 45	350.
45- 50	349.
50- 55	327.
55- 60	279.
60- 65	212.
65- 70	145.
70- 75	77.
75- 80	32.
80- 85	9.
85- 90	2.
90- 95	6.
95-100	26.
100-105	48.
105-110	60.
110-115	64.
115-120	67.
120-125	71.
125-130	74.
130-135	75.
135-140	74.
140-145	70.
145-150	64.
150-155	57.
155-160	48.
160-165	38.
165-170	28.
170-175	17.
175-180	6.

10-DEGREE

ZONAL LUMEN SUMMARY

0- 10	112.
0- 20	437.
0- 30	943.
0- 40	1580.
0- 50	2279.
0- 60	2885.
0- 70	3242.
0- 80	3350.
0- 90	3361.
0-100	3393.
0-110	3501.
0-120	3632.
0-130	3778.
0-140	3927.
0-150	4062.
0-160	4167.
0-170	4234.
0-180	4256.



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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	93	93	93	93	89	89	89	89	81	81	81	74	74	74	68	68	68	65
1	86	83	80	77	82	79	76	74	73	70	68	66	65	63	61	60	59	56
2	79	73	67	63	75	70	65	61	64	60	57	59	56	53	54	52	50	47
3	72	64	58	53	68	61	56	51	57	52	48	52	48	45	48	45	42	40
4	66	57	50	45	63	54	48	44	50	45	41	46	42	39	43	39	37	34
5	60	50	44	38	57	49	42	37	45	40	36	42	37	34	38	35	32	30
6	56	45	38	33	53	44	37	33	40	35	31	38	33	29	35	31	28	26
7	51	41	34	29	49	39	33	29	37	31	27	34	29	26	32	28	25	23
8	48	37	31	26	46	36	30	25	33	28	24	31	27	23	29	25	22	20
9	45	34	28	23	42	33	27	23	31	25	22	29	24	21	27	23	20	18
10	42	31	25	21	40	30	24	20	28	23	20	26	22	19	25	21	18	16

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