

REPORT NUMBER: ITL70249

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ISSUE DATE: 11/14/11

PREPARED FOR: PRECISION ARCHITECTURAL LIGHTING

CATALOG NUMBER: LTS-02-X-4-X-OP/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, FABRICATED SEMI-SPECULAR METAL PARABOLIC 29-CELL LOUVER. OPEN TOP.

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	586	586	586	586	586
5	584	585	586	583	582
15	548	554	569	582	587
25	490	507	541	577	594
35	417	447	511	579	620
45	322	379	497	638	686
55	200	301	441	482	512
65	39	81	219	366	492
75	9	14	25	113	174
85	1	2	3	6	11
90	0	0	0	0	0
95	24	165	217	239	209
105	113	256	442	575	630
115	221	330	502	631	681
125	329	411	553	670	714
135	424	489	596	687	723
145	511	553	628	690	716
155	578	604	645	681	697
165	626	635	650	663	670
175	649	649	647	645	646
180	647	647	647	647	647

ZONAL LUMEN SUMMARY			
ZONE	LUMENS	%LAMP	%FIXT
0- 30	466	9.0	9.7
0- 40	790	15.2	16.5
0- 60	1525	29.3	31.8
0- 90	1833	35.3	38.2
90-120	1092	21.0	22.8
90-130	1574	30.3	32.8
90-150	2417	46.5	50.4
90-180	2959	56.9	61.8
0-180	4792	92.2	100.0

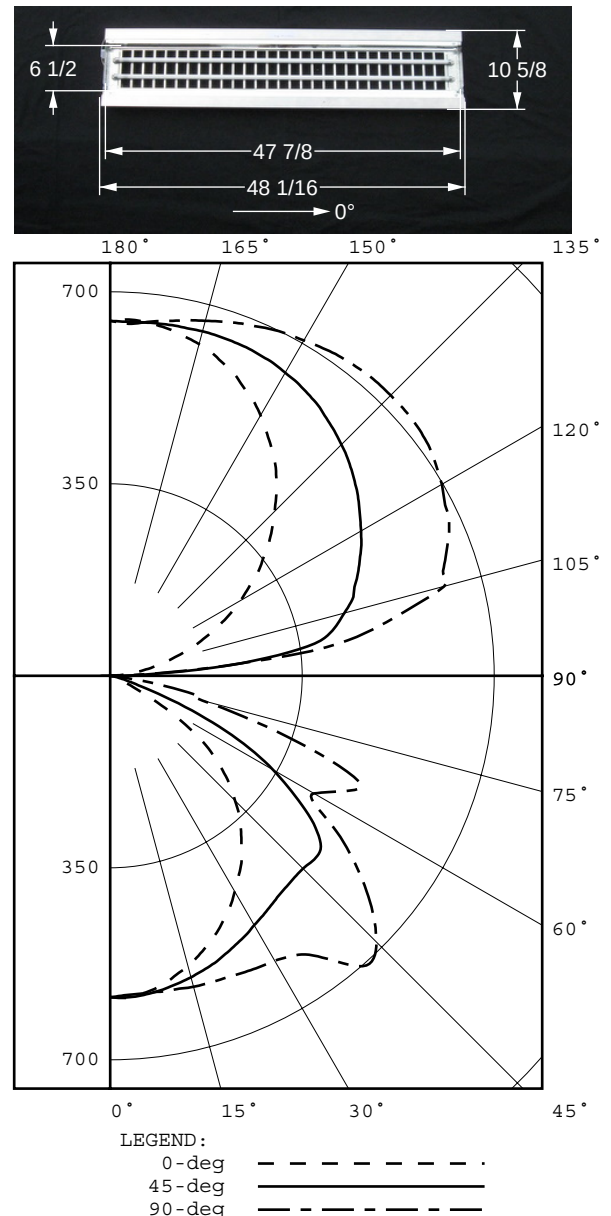
TOTAL LUMINAIRE EFFICIENCY = 92.2 % *

CIE TYPE - SEMI-INDIRECT

PLANE : 0-DEG 90-DEG

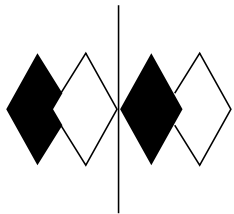
SHIELDING ANGLES : 27 15

* SEE ADDENDUM FOR FURTHER INFORMATION



Checked M. KLOPF

Approved R. BEATTIE
Lighting Engineer



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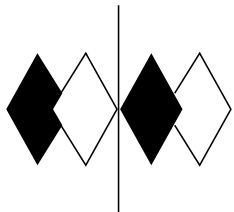
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PLANE : 0-DEG 90-DEG
LUMINOUS LENGTH : 44.125 5.500

LUMINANCE DATA IN CANDELA/SQ M

ANGLE IN DEG	AVERAGE 0-DEG	AVERAGE 45-DEG	AVERAGE 90-DEG
45	2908.	4489.	6196.
55	2227.	4911.	5701.
65	589.	3310.	7435.
75	222.	617.	4294.
85	73.	220.	806.



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CANDELA DISTRIBUTION

	0.0	22.5	45.0	67.5	90.0
0.0	586	586	586	586	586
5.0	584	585	586	583	582
10.0	570	573	579	582	584
15.0	548	554	569	582	587
20.0	521	532	557	580	589
25.0	490	507	541	577	594
30.0	454	479	525	575	600
35.0	417	447	511	579	620
40.0	371	414	501	612	690
45.0	322	379	497	638	686
50.0	267	346	499	574	610
55.0	200	301	441	482	512
60.0	108	208	343	385	429
65.0	39	81	219	366	492
70.0	15	29	81	275	387
75.0	9	14	25	113	174
80.0	4	6	10	22	89
85.0	1	2	3	6	11
90.0	0	0	0	0	0
95.0	24	165	217	239	209
100.0	66	221	397	459	485
105.0	113	256	442	575	630
110.0	167	290	474	607	652
115.0	221	330	502	631	681
120.0	274	371	528	652	698
125.0	329	411	553	670	714
130.0	378	452	576	681	722
135.0	424	489	596	687	723
140.0	471	523	613	691	722
145.0	511	553	628	690	716
150.0	548	581	638	687	706
155.0	578	604	645	681	697
160.0	605	622	649	672	684
165.0	626	635	650	663	670
170.0	640	644	649	653	657
175.0	649	649	647	645	646
180.0	647	647	647	647	647



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5-DEGREE

ZONAL LUMEN SUMMARY

0- 5	14.
5- 10	42.
10- 15	68.
15- 20	93.
20- 25	115.
25- 30	135.
30- 35	153.
35- 40	171.
40- 45	190.
45- 50	196.
50- 55	187.
55- 60	161.
60- 65	129.
65- 70	98.
70- 75	53.
75- 80	22.
80- 85	6.
85- 90	1.
90- 95	44.
95-100	148.
100-105	202.
105-110	223.
110-115	234.
115-120	240.
120-125	242.
125-130	240.
130-135	233.
135-140	221.
140-145	205.
145-150	185.
150-155	161.
155-160	135.
160-165	107.
165-170	77.
170-175	46.
175-180	15.

10-DEGREE

ZONAL LUMEN SUMMARY

0- 10	56.
0- 20	216.
0- 30	466.
0- 40	790.
0- 50	1176.
0- 60	1525.
0- 70	1752.
0- 80	1826.
0- 90	1833.
0-100	2025.
0-110	2450.
0-120	2925.
0-130	3407.
0-140	3861.
0-150	4250.
0-160	4547.
0-170	4731.
0-180	4792.



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COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

EFFECTIVE FLOOR CAVITY REFLECTANCE 0.20

RC RW	80				70				50			30			10			0
	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
0	96	96	96	96	87	87	87	87	71	71	71	56	56	56	42	42	42	35
1	88	84	81	78	80	77	74	71	62	60	58	49	48	47	37	36	36	30
2	80	73	68	63	72	67	62	58	55	51	48	43	41	39	33	31	30	25
3	73	64	58	52	66	59	53	48	48	44	40	38	35	33	29	27	25	21
4	67	57	50	44	60	52	46	41	42	38	34	34	30	28	26	23	22	18
5	61	50	43	38	55	46	40	35	38	33	29	30	27	24	23	21	19	15
6	56	45	38	32	51	41	35	30	34	29	25	27	23	21	21	18	16	13
7	52	40	33	28	47	37	31	26	30	26	22	24	21	18	19	16	14	12
8	48	36	29	25	43	33	27	23	28	23	19	22	19	16	17	15	13	10
9	44	33	26	22	40	30	24	20	25	20	17	20	17	14	16	13	11	9
10	41	30	24	19	37	28	22	18	23	19	15	19	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