

REPORT NUMBER: ITL71199

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ISSUE DATE: 02/09/12

PREPARED FOR: PRECISION ARCHITECTURAL LIGHTING

CATALOG NUMBER: LTS-02-X-4-X-OC4/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 141 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 = 64.4 AT 120.0 VOLTS

LUMEN TO CANDELA RATIO USED = 9.17

REPORT IS BASED ON 2600 LUMENS PER LAMP. *

CANDELA DISTRIBUTION

	0.0	22.5	45.0	67.5	90.0	FLUX
0	916	916	916	916	916	
5	915	915	916	911	911	87
15	864	874	893	907	912	252
25	780	804	853	905	919	394
35	670	714	800	881	923	502
45	531	612	741	876	925	567
55	344	473	611	661	694	498
65	70	124	300	474	607	306
75	15	22	34	151	234	98
85	1	3	4	7	12	8
90	0	0	0	0	0	
95	22	60	44	44	55	62
105	87	141	236	297	318	222
115	163	214	273	335	355	269
125	243	286	341	382	390	296
135	316	357	398	437	443	303
145	381	409	445	471	476	275
155	431	450	477	495	495	218
165	468	476	487	495	497	137
175	485	485	485	484	485	46
180	483	483	483	483	483	

ZONAL LUMEN SUMMARY

ZONE	LUMENS	%LAMP	%FIXT
0- 30	732	14.1	16.1
0- 40	1234	23.7	27.2
0- 60	2300	44.2	50.6
0- 90	2713	52.2	59.7
90-120	552	10.6	12.2
90-130	849	16.3	18.7
90-150	1427	27.4	31.4
90-180	1828	35.1	40.3
0-180	4541	87.3	100.0

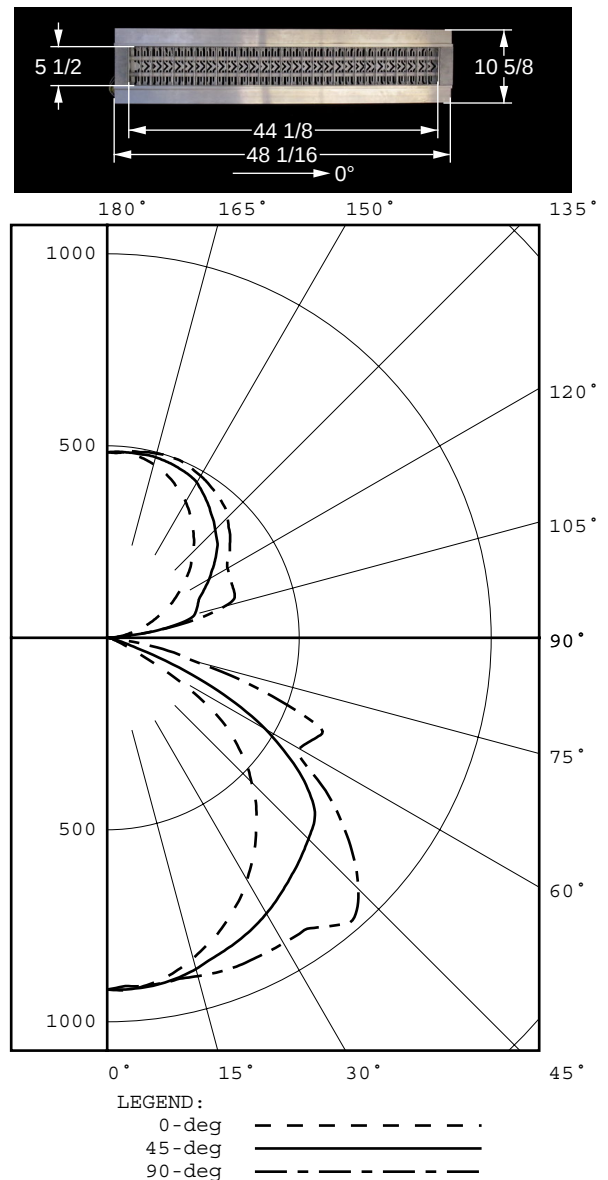
TOTAL LUMINAIRE EFFICIENCY = 87.3 % *

CIE TYPE - DIRECT-INDIRECT

PLANE : 0-DEG 90-DEG

SPACING CRITERIA : 1.19 1.59

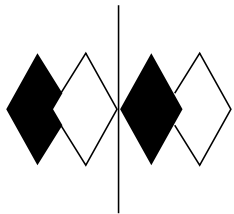
SHIELDING ANGLES : 27 15



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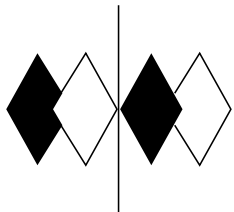
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PLANE : 0-DEG 90-DEG
LUMINOUS LENGTH : 44.125 5.500

LUMINANCE DATA IN CANDELA/SQ M

ANGLE IN DEG	AVERAGE 0-DEG	AVERAGE 45-DEG	AVERAGE 90-DEG
45	4796.	6693.	8355.
55	3831.	6804.	7728.
65	1058.	4534.	9173.
75	370.	839.	5774.
85	73.	293.	879.



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CANDELA DISTRIBUTION

	0.0	22.5	45.0	67.5	90.0
0.0	916	916	916	916	916
5.0	915	915	916	911	911
10.0	896	900	909	910	910
15.0	864	874	893	907	912
20.0	826	840	872	909	919
25.0	780	804	853	905	919
30.0	728	760	829	893	918
35.0	670	714	800	881	923
40.0	605	665	771	893	971
45.0	531	612	741	876	925
50.0	448	553	706	783	821
55.0	344	473	611	661	694
60.0	185	318	476	529	577
65.0	70	124	300	474	607
70.0	30	45	110	359	479
75.0	15	22	34	151	234
80.0	6	9	14	29	102
85.0	1	3	4	7	12
90.0	0	0	0	0	0
95.0	22	60	44	44	55
100.0	52	114	168	168	186
105.0	87	141	236	297	318
110.0	124	176	251	327	352
115.0	163	214	273	335	355
120.0	203	250	307	347	362
125.0	243	286	341	382	390
130.0	282	323	375	412	418
135.0	316	357	398	437	443
140.0	350	386	421	456	463
145.0	381	409	445	471	476
150.0	409	433	467	485	487
155.0	431	450	477	495	495
160.0	452	465	483	499	499
165.0	468	476	487	495	497
170.0	479	483	486	489	491
175.0	485	485	485	484	485
180.0	483	483	483	483	483



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5-DEGREE

ZONAL LUMEN SUMMARY

0- 5	22.
5- 10	65.
10- 15	107.
15- 20	145.
20- 25	181.
25- 30	212.
30- 35	239.
35- 40	263.
40- 45	282.
45- 50	285.
50- 55	269.
55- 60	229.
60- 65	178.
65- 70	128.
70- 75	70.
75- 80	28.
80- 85	7.
85- 90	1.
90- 95	10.
95-100	51.
100-105	99.
105-110	123.
110-115	131.
115-120	138.
120-125	145.
125-130	152.
130-135	153.
135-140	150.
140-145	143.
145-150	132.
150-155	118.
155-160	100.
160-165	80.
165-170	58.
170-175	35.
175-180	12.

10-DEGREE

ZONAL LUMEN SUMMARY

0- 10	87.
0- 20	339.
0- 30	732.
0- 40	1234.
0- 50	1802.
0- 60	2300.
0- 70	2606.
0- 80	2704.
0- 90	2713.
0-100	2774.
0-110	2996.
0-120	3265.
0-130	3561.
0-140	3864.
0-150	4139.
0-160	4357.
0-170	4494.
0-180	4541.



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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	89	89	89	89	77	77	77	67	67	67	57	57	57	52
1	88	84	81	78	82	79	76	73	69	67	65	59	58	57	51	50	49	45
2	80	74	68	64	75	69	64	60	60	57	54	52	50	47	45	43	41	38
3	73	65	58	53	68	61	55	50	53	49	45	46	43	40	40	37	35	32
4	67	57	50	45	62	54	47	43	47	42	38	41	37	34	35	33	30	27
5	61	51	44	38	57	48	41	37	42	37	33	37	33	30	32	29	26	24
6	56	46	38	33	52	43	36	32	38	33	29	33	29	26	29	25	23	20
7	52	41	34	29	48	39	32	28	34	29	25	30	26	23	26	23	20	18
8	48	37	30	26	45	35	29	24	31	26	22	27	23	20	24	20	18	16
9	45	34	27	23	42	32	26	22	28	23	20	25	21	18	22	19	16	14
10	42	31	25	20	39	29	23	19	26	21	18	23	19	16	20	17	15	13

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