

REPORT NUMBER: ITL70243

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ISSUE DATE: 10/25/11

PREPARED FOR: PRECISION ARCHITECTURAL LIGHTING

CATALOG NUMBER: LTS-03-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.

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

BALLASTS: TWO UNIVERSAL B228PUNV-C

MOUNTING: SUSPENDED

THE 0 DEGREE PLANE IS PARALLEL WITH THE LAMPS.

TOTAL INPUT WATTS = 95.8 AT 120.0 VOLTS

LUMEN TO CANDELA RATIO USED = 9.17

REPORT IS BASED ON 2600 LUMENS PER LAMP. *

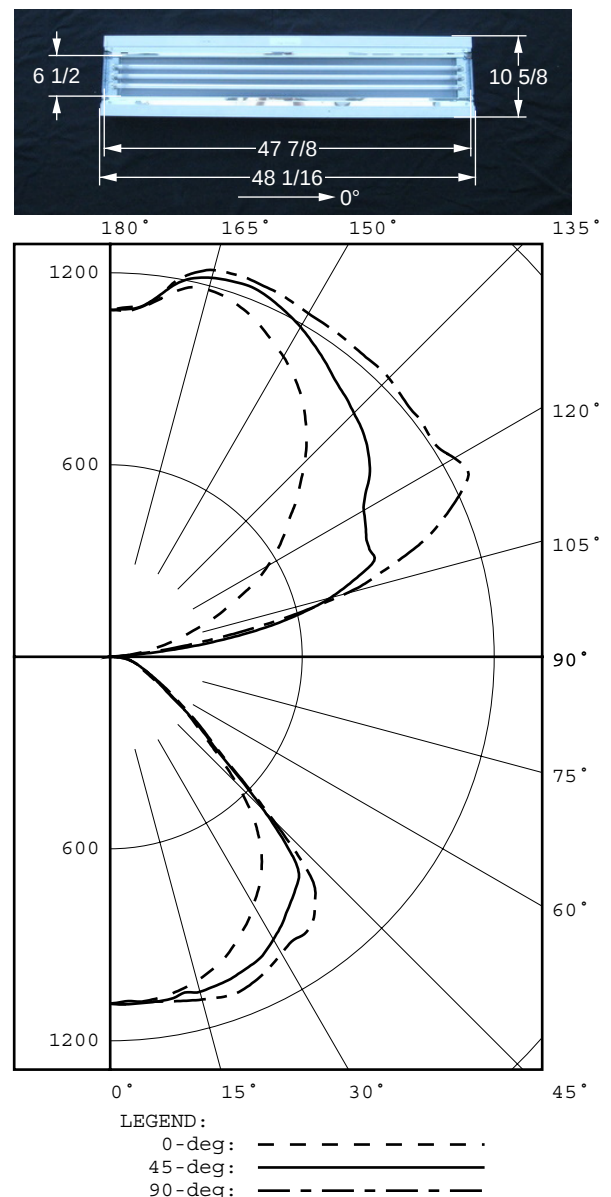
CANDELA DISTRIBUTION						FLUX
	0.0	22.5	45.0	67.5	90.0	
0	1084	1084	1084	1084	1084	
5	1083	1086	1087	1083	1082	103
15	1048	1060	1084	1102	1109	306
25	960	991	1058	1098	1105	481
35	823	893	966	1029	1058	597
45	557	616	682	701	716	502
55	276	271	272	281	291	253
65	132	147	145	144	146	145
75	80	91	85	83	83	90
85	35	38	37	36	31	37
90	0	0	0	0	0	
95	48	189	89	57	18	142
105	226	461	713	765	763	627
115	450	627	883	1162	1207	857
125	663	783	990	1120	1214	861
135	860	937	1077	1196	1232	822
145	1026	1074	1150	1227	1236	718
155	1130	1163	1221	1249	1252	557
165	1187	1197	1226	1246	1251	345
175	1098	1098	1098	1097	1097	107
180	1084	1084	1084	1084	1084	

ZONAL LUMEN SUMMARY			
ZONE	LUMENS	%LAMP	%FIXT
0- 30	891	11.4	11.8
0- 40	1488	19.1	19.7
0- 60	2243	28.8	29.7
0- 90	2515	32.2	33.3
90-120	1625	20.8	21.5
90-130	2487	31.9	32.9
90-150	4026	51.6	53.3
90-180	5035	64.6	66.7
0-180	7550	96.8	100.0

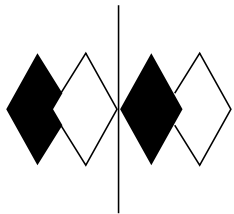
TOTAL LUMINAIRE EFFICIENCY = 96.8 % *

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

* SEE ADDENDUM FOR FURTHER INFORMATION



Checked B. HYRE
Approved R. BEATTIE
Lighting Engineer



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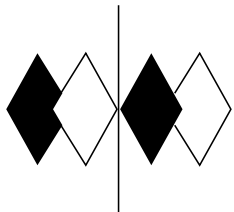
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PLANE : 0-DEG 90-DEG
LUMINOUS LENGTH : 44.125 5.500

LUMINANCE DATA IN CANDELA/SQ M

ANGLE IN DEG	AVERAGE 0-DEG	AVERAGE 45-DEG	AVERAGE 90-DEG
45	5031.	6160.	6467.
55	3073.	3029.	3240.
65	1995.	2191.	2206.
75	1974.	2098.	2048.
85	2565.	2711.	2272.



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CANDELA DISTRIBUTION

	0.0	22.5	45.0	67.5	90.0
0.0	1084	1084	1084	1084	1084
5.0	1083	1086	1087	1083	1082
10.0	1071	1076	1086	1090	1093
15.0	1048	1060	1084	1102	1109
20.0	1014	1031	1076	1111	1123
25.0	960	991	1058	1098	1105
30.0	895	946	1020	1062	1070
35.0	823	893	966	1029	1058
40.0	718	801	914	973	996
45.0	557	616	682	701	716
50.0	383	380	404	433	418
55.0	276	271	272	281	291
60.0	186	193	189	189	207
65.0	132	147	145	144	146
70.0	102	114	110	106	114
75.0	80	91	85	83	83
80.0	67	63	63	62	59
85.0	35	38	37	36	31
90.0	0	0	0	0	0
95.0	48	189	89	57	18
100.0	128	398	451	403	349
105.0	226	461	713	765	763
110.0	336	541	878	1009	1030
115.0	450	627	883	1162	1207
120.0	569	703	915	1147	1242
125.0	663	783	990	1120	1214
130.0	760	866	1044	1154	1217
135.0	860	937	1077	1196	1232
140.0	951	1011	1108	1219	1231
145.0	1026	1074	1150	1227	1236
150.0	1083	1124	1190	1236	1239
155.0	1130	1163	1221	1249	1252
160.0	1169	1188	1237	1257	1258
165.0	1187	1197	1226	1246	1251
170.0	1158	1172	1183	1192	1194
175.0	1098	1098	1098	1097	1097
180.0	1084	1084	1084	1084	1084



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5-DEGREE

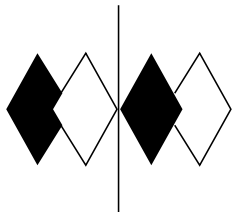
ZONAL LUMEN SUMMARY

0- 5	26.
5- 10	78.
10- 15	128.
15- 20	177.
20- 25	222.
25- 30	259.
30- 35	288.
35- 40	309.
40- 45	294.
45- 50	208.
50- 55	146.
55- 60	107.
60- 65	81.
65- 70	64.
70- 75	51.
75- 80	39.
80- 85	27.
85- 90	10.
90- 95	16.
95-100	126.
100-105	266.
105-110	361.
110-115	419.
115-120	438.
120-125	433.
125-130	428.
130-135	420.
135-140	402.
140-145	376.
145-150	342.
150-155	302.
155-160	255.
160-165	202.
165-170	143.
170-175	81.
175-180	26.

10-DEGREE

ZONAL LUMEN SUMMARY

0- 10	103.
0- 20	409.
0- 30	891.
0- 40	1488.
0- 50	1990.
0- 60	2243.
0- 70	2388.
0- 80	2478.
0- 90	2515.
0-100	2657.
0-110	3284.
0-120	4141.
0-130	5002.
0-140	5823.
0-150	6541.
0-160	7098.
0-170	7443.
0-180	7550.



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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	100	100	100	100	90	90	90	90	72	72	72	55	55	55	39	39	39	32
1	92	88	84	81	82	79	76	74	63	61	60	49	48	47	36	35	34	28
2	84	77	72	67	75	70	65	61	56	53	50	44	42	40	32	31	30	24
3	77	68	62	56	69	62	56	52	50	46	43	39	36	34	29	27	26	21
4	70	61	53	48	63	55	49	44	45	40	37	35	32	30	26	24	23	19
5	65	54	47	41	58	49	43	38	40	36	32	32	28	26	24	22	20	17
6	60	49	41	36	54	44	38	33	36	32	28	29	25	23	22	19	18	15
7	55	44	37	32	50	40	34	29	33	28	25	26	23	20	20	18	16	13
8	51	40	33	28	46	36	30	26	30	25	22	24	21	18	18	16	14	12
9	48	36	29	25	43	33	27	23	27	23	20	22	19	16	17	15	13	11
10	44	33	27	22	40	30	25	21	25	21	18	20	17	15	16	13	12	10

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