

REPORT NUMBER: ITL76162

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PREPARED FOR: PRECISION ARCHITECTURAL LIGHTING

CATALOG NUMBER: MLR5-2-4-X-FC-120-T5

LUMINAIRE: EXTRUDED 3-PIECE METAL HOUSING WITH WHITE PAINTED GENERAL INTERIOR FINISH AND FABRICATED WHITE PAINTED METAL END CAPS, FORMED WHITE PAINTED METAL REFLECTOR AND SOCKET MOUNTING BRACKETS, EXTRUDED FROSTED ACRYLIC DIFFUSER. DIFFUSER FROSTED BOTH SIDES.

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

BALLAST: UNIVERSAL B228PUNV-C

MOUNTING: RECESSED

TOTAL REFLECTANCE OF PAINT = 89.1 %

THE 0 DEGREE PLANE IS PARALLEL WITH THE LAMPS.

TOTAL INPUT WATTS = 56.3 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	1411	1411	1411	1411	1411	
5	1407	1406	1403	1398	1397	133
15	1340	1345	1349	1350	1350	380
25	1214	1227	1234	1246	1244	568
35	1042	1054	1068	1074	1070	663
45	821	836	847	843	840	649
55	600	612	610	603	598	541
65	381	391	385	380	375	382
75	199	203	200	197	195	211
85	52	54	55	57	54	62
90	0	0	0	0	0	

ZONAL LUMEN SUMMARY			
ZONE	LUMENS	%LAMP	%FIXT
0- 30	1081	20.8	30.1
0- 40	1744	33.5	48.6
0- 60	2934	56.4	81.8
0- 90	3588	69.0	100.0
90-180	0	0.0	0.0
0-180	3588	69.0	100.0

TOTAL LUMINAIRE EFFICIENCY = 69.0 % *

CIE TYPE - DIRECT

PLANE : 0-DEG 90-DEG

SPACING CRITERIA : 1.20 1.22

SHIELDING ANGLES : 90 90

LUMINOUS LENGTH : 46.875 4.875

LUMINANCE DATA IN CANDELA/SQ M

ANGLE AVERAGE AVERAGE AVERAGE

IN DEG 0-DEG 45-DEG 90-DEG

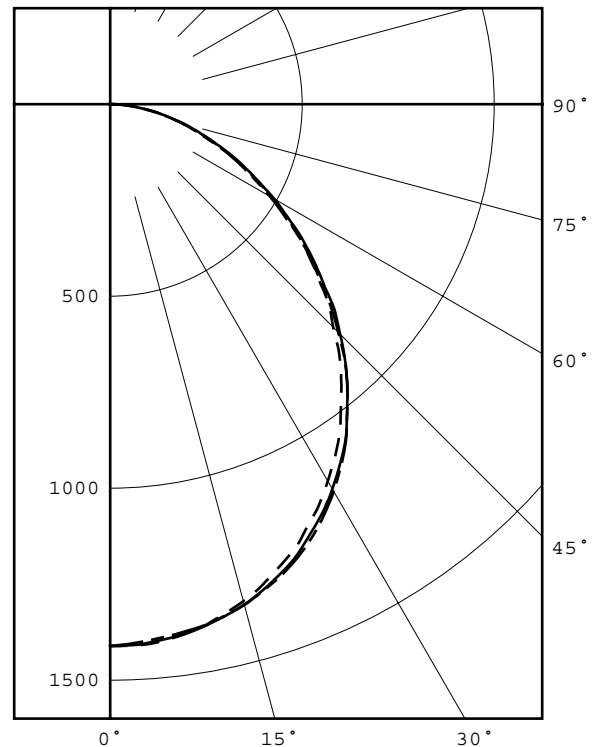
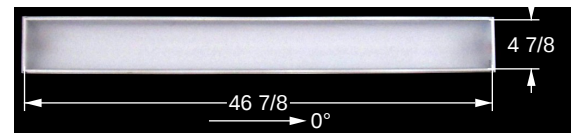
45 7875. 8125. 8058.

55 7095. 7214. 7072.

65 6115. 6179. 6019.

75 5215. 5241. 5110.

85 4047. 4280. 4203.



LEGEND:

0-deg

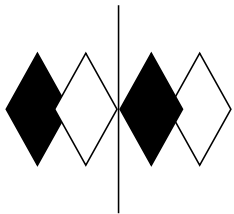
45-deg

90-deg

Checked B. HYRE

Approved R. BEATTIE
Lighting Engineer

* SEE ADDENDUM FOR FURTHER INFORMATION



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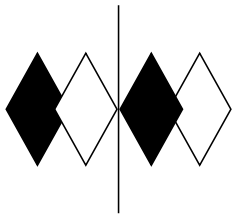
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CANDELA DISTRIBUTION
LATERAL ANGLE

	0.0	22.5	45.0	67.5	90.0
0.0	1411	1411	1411	1411	1411
2.5	1411	1411	1410	1408	1405
5.0	1407	1406	1403	1398	1397
7.5	1396	1396	1395	1389	1389
10.0	1382	1382	1383	1380	1380
12.5	1361	1364	1367	1366	1366
15.0	1340	1345	1349	1350	1350
17.5	1314	1321	1326	1330	1328
20.0	1284	1292	1300	1303	1305
22.5	1254	1261	1271	1276	1277
25.0	1214	1227	1234	1246	1244
27.5	1177	1187	1198	1204	1206
30.0	1133	1147	1157	1167	1164
32.5	1089	1101	1113	1120	1118
35.0	1042	1054	1068	1074	1070
37.5	987	1005	1013	1024	1014
40.0	936	948	961	964	960
42.5	883	896	906	907	904
45.0	821	836	847	843	840
47.5	773	782	792	786	779
50.0	709	726	724	727	714
52.5	654	666	667	661	656
55.0	600	612	610	603	598
57.5	541	556	548	547	535
60.0	489	496	494	489	480
62.5	430	444	435	438	425
65.0	381	391	385	380	375
67.5	334	342	336	332	327
70.0	283	294	285	285	276
72.5	240	243	241	238	233
75.0	199	203	200	197	195
77.5	154	159	158	157	154
80.0	120	122	123	121	119
82.5	82	89	84	88	82
85.0	52	54	55	57	54
87.5	24	26	27	29	30
90.0	0	0	0	0	0



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5-DEGREE

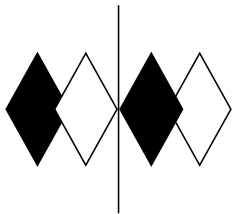
ZONAL LUMEN SUMMARY

0- 5	34
5- 10	100
10- 15	162
15- 20	218
20- 25	266
25- 30	302
30- 35	326
35- 40	337
40- 45	333
45- 50	316
50- 55	288
55- 60	253
60- 65	212
65- 70	169
70- 75	126
75- 80	85
80- 85	47
85- 90	15

10-DEGREE

ZONAL LUMEN SUMMARY

0- 10	133
0- 20	513
0- 30	1081
0- 40	1744
0- 50	2392
0- 60	2934
0- 70	3315
0- 80	3526
0- 90	3588



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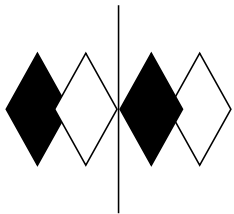
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COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

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	82	82	82	82	80	80	80	80	77	77	77	73	73	73	70	70	70	69
1	75	72	69	67	73	71	68	66	68	66	64	65	63	62	63	61	60	58
2	69	63	59	55	67	62	58	54	60	56	53	57	54	52	55	53	51	49
3	63	56	50	46	61	55	50	46	53	48	45	51	47	44	49	46	43	42
4	58	50	44	39	56	49	43	39	47	42	39	46	41	38	44	40	38	36
5	53	45	39	34	52	44	38	34	42	37	34	41	37	33	40	36	33	31
6	49	40	34	30	48	40	34	30	38	33	30	37	33	29	36	32	29	28
7	46	37	31	27	45	36	30	26	35	30	26	34	29	26	33	29	26	25
8	43	33	28	24	42	33	28	24	32	27	24	31	27	23	30	26	23	22
9	40	31	25	21	39	30	25	21	30	25	21	29	24	21	28	24	21	20
10	37	28	23	20	37	28	23	19	27	23	19	27	22	19	26	22	19	18

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