

REPORT NUMBER: ITL76160

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PREPARED FOR: PRECISION ARCHITECTURAL LIGHTING

CATALOG NUMBER: MLR5-1-4-X-PBW-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, FABRICATED WHITE PAINTED METAL PARABOLIC 31-CELL LOUVER.

LAMP: ONE 28-WATT T-5 SYLVANIA FP28/841/ECO LINEAR FLUORESCENT.

BALLAST: UNIVERSAL B228PUNV-C

MOUNTING: RECESSED

TOTAL REFLECTANCE OF PAINT = 89.1 %

THE 0 DEGREE PLANE IS PARALLEL WITH THE LAMP.

TOTAL INPUT WATTS = 31.2 AT 120.0 VOLTS

LUMEN TO CANDELA RATIO USED = 9.17

REPORT IS BASED ON 2600 LUMENS PER LAMP. *

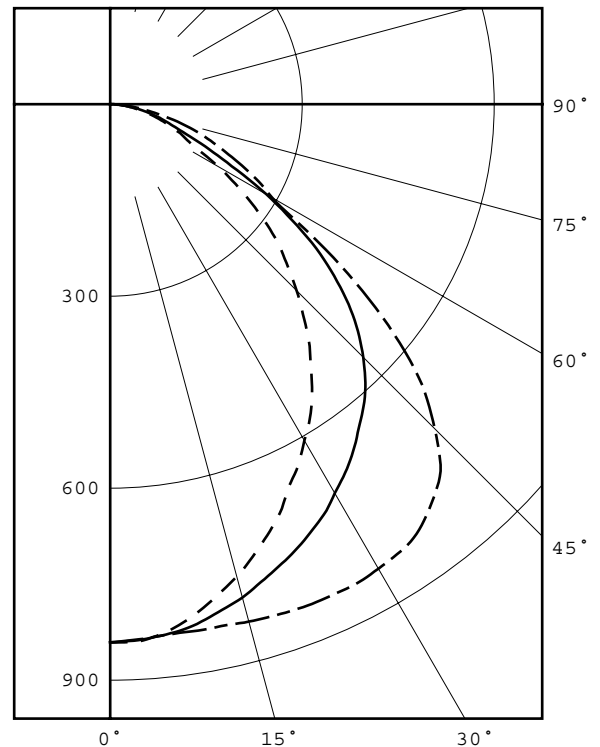
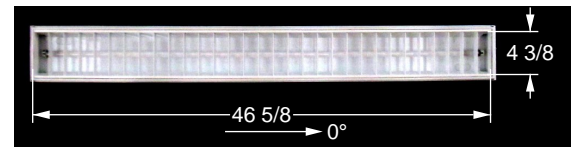
CANDELA DISTRIBUTION						FLUX
	0.0	22.5	45.0	67.5	90.0	
0	841	841	841	841	841	
5	834	837	835	835	835	79
15	764	775	798	826	837	226
25	660	687	739	807	842	344
35	550	583	662	763	827	421
45	412	456	559	655	717	429
55	270	322	393	424	440	332
65	133	142	178	204	227	181
75	69	73	77	96	114	89
85	16	17	19	21	25	23
90	0	0	0	0	0	

ZONAL LUMEN SUMMARY			
ZONE	LUMENS	%LAMP	%FIXT
0- 30	649	25.0	30.6
0- 40	1070	41.2	50.4
0- 60	1831	70.4	86.2
0- 90	2124	81.7	100.0
90-180	0	0.0	0.0
0-180	2124	81.7	100.0

TOTAL LUMINAIRE EFFICIENCY = 81.7 % *

CIE TYPE - DIRECT
PLANE : 0-DEG 90-DEG
SPACING CRITERIA : 1.09 1.49
SHIELDING ANGLES : 30 30
LUMINOUS LENGTH : 46.625 4.375

LUMINANCE DATA IN CANDELA/SQ M			
ANGLE IN DEG	AVERAGE 0-DEG	AVERAGE 45-DEG	AVERAGE 90-DEG
45	4427.	6007.	7705.
55	3577.	5206.	5829.
65	2391.	3200.	4081.
75	2026.	2261.	3347.
85	1395.	1657.	2180.

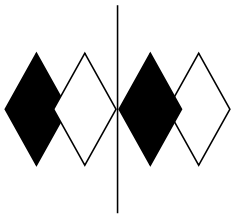


LEGEND:
0-deg -----
45-deg =====
90-deg -----

Checked M KLOPF

Approved R BEATTIE
Lighting Engineer

* SEE ADDENDUM FOR FURTHER INFORMATION



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THE LIGHT CENTER OF THE INDUSTRY SINCE 1955

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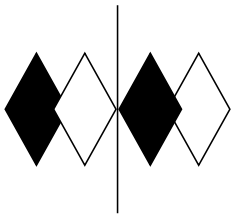
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CANDELA DISTRIBUTION
 LATERAL ANGLE

	0.0	22.5	45.0	67.5	90.0
0.0	841	841	841	841	841
2.5	841	841	839	838	838
5.0	834	837	835	835	835
7.5	821	825	830	833	833
10.0	804	812	821	831	834
12.5	784	793	809	829	834
15.0	764	775	798	826	837
17.5	741	755	783	823	839
20.0	717	733	769	819	841
22.5	692	711	755	813	842
25.0	660	687	739	807	842
27.5	636	658	723	798	842
30.0	607	634	702	790	838
32.5	581	608	683	777	834
35.0	550	583	662	763	827
37.5	515	555	638	746	811
40.0	483	522	616	723	791
42.5	446	492	590	694	764
45.0	412	456	559	655	717
47.5	377	424	525	609	667
50.0	345	395	486	560	601
52.5	309	360	441	491	523
55.0	270	322	393	424	440
57.5	232	283	337	352	355
60.0	195	237	282	283	292
62.5	157	190	224	234	261
65.0	133	142	178	204	227
67.5	118	121	141	173	195
70.0	98	105	112	147	167
72.5	84	88	93	120	141
75.0	69	73	77	96	114
77.5	55	57	60	73	85
80.0	42	44	47	54	62
82.5	29	31	31	37	42
85.0	16	17	19	21	25
87.5	5	6	7	9	11
90.0	0	0	0	0	0



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5-DEGREE

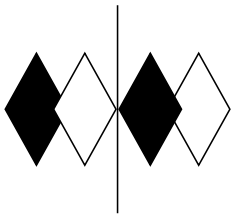
ZONAL LUMEN SUMMARY

0- 5	20
5- 10	59
10- 15	96
15- 20	130
20- 25	160
25- 30	184
30- 35	204
35- 40	217
40- 45	220
45- 50	210
50- 55	185
55- 60	146
60- 65	105
65- 70	75
70- 75	54
75- 80	35
80- 85	18
85- 90	5

10-DEGREE

ZONAL LUMEN SUMMARY

0- 10	79
0- 20	305
0- 30	649
0- 40	1070
0- 50	1499
0- 60	1831
0- 70	2011
0- 80	2101
0- 90	2124



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COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

EFFECTIVE FLOOR CAVITY REFLECTANCE 0.20

RC	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	97	97	97	97	95	95	95	95	91	91	91	87	87	87	83	83	83	82
1	90	86	83	80	88	84	82	79	81	79	76	78	76	74	75	73	72	70
2	82	76	71	67	80	75	70	66	72	68	64	69	66	63	67	64	62	60
3	75	67	61	56	74	66	60	56	64	59	55	62	57	54	60	56	53	51
4	69	60	53	48	68	59	53	48	57	52	47	55	50	47	53	49	46	44
5	64	54	47	42	62	53	47	42	51	46	41	50	45	41	48	44	40	39
6	59	49	42	37	58	48	41	37	47	41	36	45	40	36	44	39	36	34
7	55	44	37	33	54	44	37	32	42	37	32	41	36	32	40	35	32	30
8	51	40	34	29	50	40	33	29	39	33	29	38	33	29	37	32	29	27
9	48	37	31	26	47	37	30	26	36	30	26	35	30	26	34	29	26	24
10	45	34	28	24	44	34	28	24	33	28	24	32	27	24	32	27	23	22

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