

REPORT NUMBER: ITL70223

PAGE: 1 OF 5

ISSUE DATE: 10/14/11

PREPARED FOR: PRECISION ARCHITECTURAL LIGHTING

CATALOG NUMBER: 907D-02-X-4-X-MPL-X-120-T5

LUMINAIRE: EXTRUDED SEMI-DIFFUSE METAL HOUSING WITH CAST DIFFUSE METAL
END CAPS, FORMED TWO-PIECE WHITE-PAINTED METAL REFLECTOR, CLEAR
MICRO-PRISMATIC PLASTIC LENS. LENS PRISMS DOWN.

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 = 55.1 AT 120.0 VOLTS

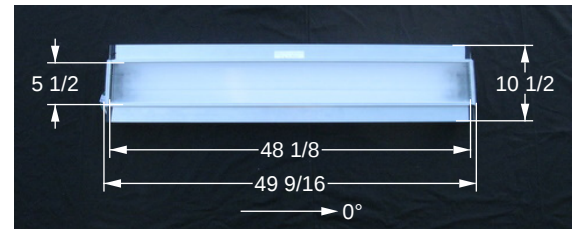
LUMEN TO CANDELA RATIO USED = 9.17

REPORT IS BASED ON 2600 LUMENS PER LAMP. *

CANDELA DISTRIBUTION

	0.0	22.5	45.0	67.5	90.0	
0	1757	1757	1757	1757	1757	
5	1763	1760	1757	1748	1748	167
15	1718	1719	1726	1727	1727	486
25	1588	1600	1607	1601	1591	736
35	1388	1391	1384	1386	1391	863
45	905	903	863	812	791	669
55	384	383	359	351	367	338
65	180	204	200	191	191	197
75	113	127	121	116	123	127
85	56	56	55	54	47	55
90	0	0	0	0	0	

FLUX



ZONAL LUMEN SUMMARY

ZONE	LUMENS	%LAMP	%FIXT
0- 30	1389	26.7	38.2
0- 40	2252	43.3	61.9
0- 60	3259	62.7	89.6
0- 90	3638	70.0	100.0
90-180	0	0.0	0.0
0-180	3638	70.0	100.0

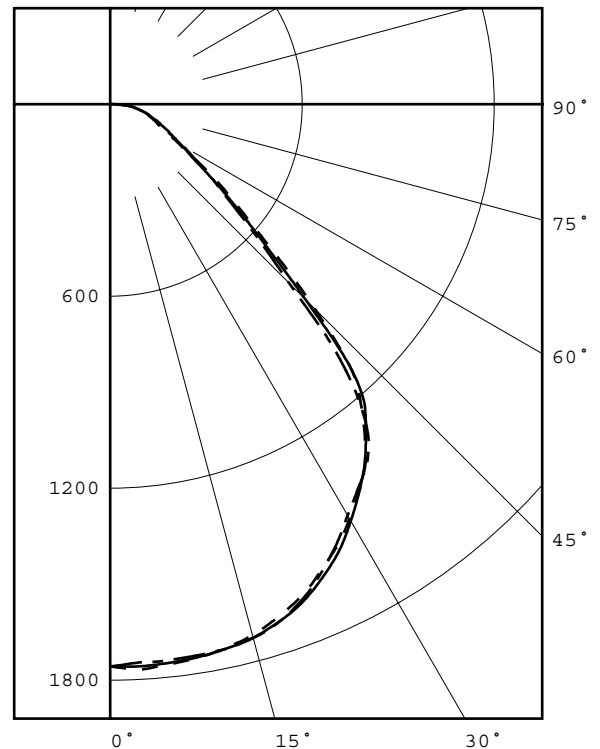
TOTAL LUMINAIRE EFFICIENCY = 70.0 % *

CIE TYPE - DIRECT

PLANE	: 0-DEG	90-DEG
SPACING CRITERIA	: 1.26	1.25
SHIELDING ANGLES	: 90	90
LUMINOUS LENGTH	: 48.125	5.500

LUMINANCE DATA IN CANDELA/SQ M

ANGLE IN DEG	AVERAGE 0-DEG	AVERAGE 45-DEG	AVERAGE 90-DEG
45	7495.	7147.	6551.
55	3921.	3665.	3747.
65	2494.	2771.	2647.
75	2557.	2738.	2783.
85	3763.	3695.	3158.



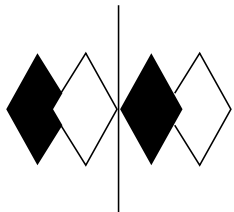
LEGEND:

0-deg: - - - - -
45-deg: - - - - -
90-deg: - - - - -

* SEE ADDENDUM FOR FURTHER INFORMATION

Checked M. KLOPF

Approved R. BEATTIE
Lighting Engineer



itl boulder
THE LIGHT CENTER OF THE INDUSTRY SINCE 1955

INDEPENDENT TESTING LABORATORIES, INC.
3386 LONGHORN ROAD, BOULDER, CO 80302 USA

PHONE: (303)442-1255 • FAX: (303)449-5274 • E-MAIL: itl@itlboulder.com • WEBSITE: www.itlboulder.com

REPORT NUMBER: ITL70223

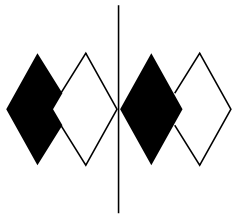
PAGE: 2 OF 5

ISSUE DATE: 10/14/11

PREPARED FOR: PRECISION ARCHITECTURAL LIGHTING

CANDELA DISTRIBUTION

	0.0	22.5	45.0	67.5	90.0
0.0	1757	1757	1757	1757	1757
2.5	1768	1762	1759	1749	1748
5.0	1763	1760	1757	1748	1748
7.5	1756	1754	1753	1746	1745
10.0	1747	1746	1747	1743	1743
12.5	1734	1732	1738	1736	1738
15.0	1718	1719	1726	1727	1727
17.5	1693	1698	1706	1710	1708
20.0	1665	1668	1682	1681	1677
22.5	1631	1635	1648	1643	1639
25.0	1588	1600	1607	1601	1591
27.5	1547	1554	1561	1548	1540
30.0	1496	1511	1504	1496	1484
32.5	1443	1452	1445	1435	1435
35.0	1388	1391	1384	1386	1391
37.5	1307	1323	1313	1330	1326
40.0	1218	1223	1239	1228	1210
42.5	1106	1111	1105	1043	1035
45.0	905	903	863	812	791
47.5	716	684	671	655	638
50.0	569	552	542	546	518
52.5	469	456	440	431	430
55.0	384	383	359	351	367
57.5	302	320	297	294	308
60.0	249	265	259	250	266
62.5	210	233	223	220	225
65.0	180	204	200	191	191
67.5	160	177	176	166	174
70.0	147	161	150	146	160
72.5	130	147	135	132	134
75.0	113	127	121	116	123
77.5	102	107	104	101	105
80.0	98	89	88	91	88
82.5	73	73	74	75	68
85.0	56	56	55	54	47
87.5	32	34	32	28	22
90.0	0	0	0	0	0



itl boulder
THE LIGHT CENTER OF THE INDUSTRY SINCE 1955

INDEPENDENT TESTING LABORATORIES, INC.
3386 LONGHORN ROAD, BOULDER, CO 80302 USA

PHONE: (303)442-1255 • FAX: (303)449-5274 • E-MAIL: itl@itlboulder.com • WEBSITE: www.itlboulder.com

REPORT NUMBER: ITL70223

PAGE: 3 OF 5

ISSUE DATE: 10/14/11

PREPARED FOR: PRECISION ARCHITECTURAL LIGHTING

5-DEGREE

ZONAL LUMEN SUMMARY

0- 5	42.
5- 10	125.
10- 15	206.
15- 20	280.
20- 25	344.
25- 30	392.
30- 35	425.
35- 40	438.
40- 45	392.
45- 50	277.
50- 55	196.
55- 60	142.
60- 65	109.
65- 70	87.
70- 75	71.
75- 80	56.
80- 85	39.
85- 90	16.

10-DEGREE

ZONAL LUMEN SUMMARY

0- 10	167.
0- 20	653.
0- 30	1389.
0- 40	2252.
0- 50	2921.
0- 60	3259.
0- 70	3456.
0- 80	3583.
0- 90	3638.
0-100	3638.
0-110	3638.
0-120	3638.
0-130	3638.
0-140	3638.
0-150	3638.
0-160	3638.
0-170	3638.
0-180	3638.



INDEPENDENT TESTING LABORATORIES, INC.
3386 LONGHORN ROAD, BOULDER, CO 80302 USA

PHONE: (303)442-1255 • FAX: (303)449-5274 • E-MAIL: itl@itlboulder.com • WEBSITE: www.itlboulder.com

REPORT NUMBER: ITL70223

PAGE: 4 OF 5

ISSUE DATE: 10/14/11

PREPARED FOR: PRECISION ARCHITECTURAL LIGHTING

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	83	83	83	83	81	81	81	81	78	78	78	74	74	74	71	71	71	70
1	77	75	72	70	76	73	71	69	70	68	66	67	66	64	65	64	63	61
2	72	67	63	59	70	65	62	59	63	60	57	61	58	56	59	57	55	53
3	66	60	55	51	65	59	54	51	57	53	50	55	52	49	53	51	48	47
4	61	54	49	45	60	53	48	45	52	47	44	50	46	43	49	45	43	41
5	57	49	44	40	56	48	43	39	47	43	39	46	42	39	45	41	38	37
6	53	45	39	35	52	44	39	35	43	38	35	42	38	35	41	37	34	33
7	50	41	36	32	49	41	35	32	40	35	31	39	34	31	38	34	31	30
8	46	38	32	29	45	37	32	29	37	32	28	36	31	28	35	31	28	27
9	44	35	30	26	43	35	30	26	34	29	26	33	29	26	32	29	26	25
10	41	32	27	24	40	32	27	24	31	27	24	31	27	24	30	26	24	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.



INDEPENDENT TESTING LABORATORIES, INC.
3386 LONGHORN ROAD, BOULDER, CO 80302 USA

PHONE: (303)442-1255 • FAX: (303)449-5274 • E-MAIL: itl@itlboulder.com • WEBSITE: www.itlboulder.com

REPORT NUMBER: ITL70223

PAGE: 5 OF 5

ISSUE DATE: 10/14/11

PREPARED FOR: PRECISION ARCHITECTURAL LIGHTING

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