



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: ITL64522

DATE: 05/05/10

PREPARED FOR: ENCAPSULITE INTERNATIONAL INC.

CATALOG NUMBER: WGP722

LUMINAIRE: FORMED WHITE PAINTED METAL BALLAST TRAY, FORMED METAL REFLECTOR WITH PREMIUM SPECULAR FINISH, CLEAR EXTRUDED PLASTIC CYLINDRICAL LENS WITH GRAY COATED UPPER EXTERIOR SURFACE ENCOMPASSING BALLAST TRAY AND LAMPS, MOLDED WHITE PLASTIC END CAPS.

LAMPS: TWO 14-WATT T-5 SYLVANIA FP14/841/ECO LINEAR FLUORESCENTS.

BALLAST: ROBERTSON PST228T5MVW

THE 0 DEGREE PLANE IS PARALLEL WITH

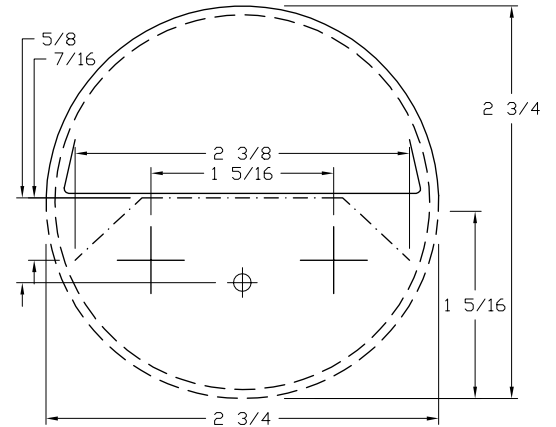
THE LAMPS.

MOUNTING: SURFACE/SUSPENDED

TOTAL INPUT WATTS = 31.3 AT 120.0 VOLTS

LUMEN TO CANDELA RATIO USED = 9.15

REPORT IS BASED ON 1200 LUMENS PER LAMP. *



CANDELA DISTRIBUTION

FLUX

	0.0	22.5	45.0	67.5	90.0	
0	377	377	377	377	377	
5	374	377	380	381	383	36
15	357	370	386	394	398	108
25	326	352	377	396	404	172
35	284	318	359	383	382	217
45	230	271	312	340	344	233
55	165	225	264	275	282	222
65	96	160	194	226	228	183
75	35	90	126	151	152	122
85	2	34	62	83	86	63
90	0	17	41	60	64	
95	0	8	30	44	52	30
105	0	0	11	23	29	13
115	0	0	0	5	9	3
125	0	0	0	0	0	0
135	0	0	0	0	0	0
145	0	0	0	0	0	0
155	0	0	0	0	0	0
165	0	0	0	0	0	0
175	0	0	0	0	0	0
180	0	0	0	0	0	0

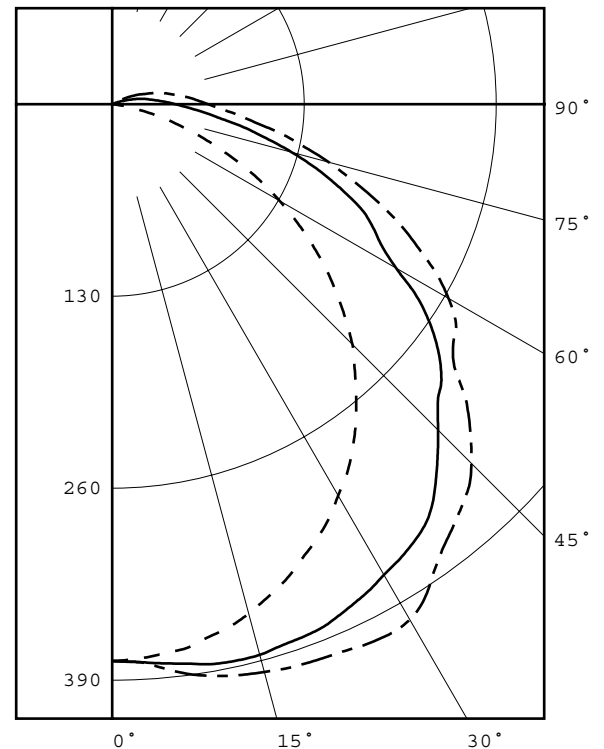
ZONAL LUMEN SUMMARY

ZONE	LUMENS	%LAMP	%FIXT
0- 30	316	13.2	22.5
0- 40	534	22.2	38.0
0- 60	989	41.2	70.5
0- 90	1357	56.5	96.7
90-120	46	1.9	3.3
90-130	46	1.9	3.3
90-150	46	1.9	3.3
90-180	46	1.9	3.3
0-180	1403	58.4	100.0

TOTAL LUMINAIRE EFFICIENCY = 58.4 % *

CIE TYPE - DIRECT

PLANE : 0-DEG 90-DEG
SPACING CRITERIA : 1.2 1.5
SHIELDING ANGLES : 1 0



LEGEND:

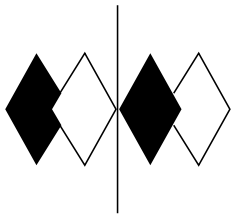
0-deg: - - - - -
45-deg: = = = = =
90-deg: - . - . - .

Checked B. HYRE

Approved R. BEATTIE

* SEE ADDENDUM FOR FURTHER INFORMATION

THIS REPORT IS BASED ON PUBLISHED INDUSTRY PROCEDURES. FIELD PERFORMANCE MAY DIFFER FROM LABORATORY PERFORMANCE.



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LUMINANCE DATA IN CANDELA/SQ M			
ANGLE IN DEG	AVERAGE 0-DEG	AVERAGE 45-DEG	AVERAGE 90-DEG
45	7381.	9125.	9306.
55	6524.	8781.	8326.
65	5149.	7574.	7487.
75	3065.	5973.	5677.
85	517.	3682.	3744.



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CANDELA DISTRIBUTION

	0.0	22.5	45.0	67.5	90.0
0.0	377	377	377	377	377
5.0	374	377	380	381	383
10.0	367	374	385	390	393
15.0	357	370	386	394	398
20.0	343	363	383	396	401
25.0	326	352	377	396	404
30.0	306	336	368	396	403
35.0	284	318	359	383	382
40.0	257	296	340	357	364
45.0	230	271	312	340	344
50.0	198	249	291	314	313
55.0	165	225	264	275	282
60.0	131	193	222	256	263
65.0	96	160	194	226	228
70.0	63	126	163	189	190
75.0	35	90	126	151	152
80.0	13	62	91	114	117
85.0	2	34	62	83	86
90.0	0	17	41	60	64
95.0	0	8	30	44	52
100.0	0	2	21	33	40
105.0	0	0	11	23	29
110.0	0	0	4	13	19
115.0	0	0	0	5	9
120.0	0	0	0	1	2
125.0	0	0	0	0	0
130.0	0	0	0	0	0
135.0	0	0	0	0	0
140.0	0	0	0	0	0
145.0	0	0	0	0	0
150.0	0	0	0	0	0
155.0	0	0	0	0	0
160.0	0	0	0	0	0
165.0	0	0	0	0	0
170.0	0	0	0	0	0
175.0	0	0	0	0	0
180.0	0	0	0	0	0



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5-DEGREE
ZONAL LUMEN SUMMARY

0- 5	9.
5- 10	27.
10- 15	45.
15- 20	63.
20- 25	79.
25- 30	93.
30- 35	105.
35- 40	112.
40- 45	116.
45- 50	117.
50- 55	114.
55- 60	107.
60- 65	98.
65- 70	85.
70- 75	69.
75- 80	53.
80- 85	37.
85- 90	25.
90- 95	18.
95-100	12.
100-105	8.
105-110	5.
110-115	2.
115-120	1.
120-125	0.
125-130	0.
130-135	0.
135-140	0.
140-145	0.
145-150	0.
150-155	0.
155-160	0.
160-165	0.
165-170	0.
170-175	0.
175-180	0.

10-DEGREE
ZONAL LUMEN SUMMARY

0- 10	36.
0- 20	144.
0- 30	316.
0- 40	534.
0- 50	767.
0- 60	989.
0- 70	1172.
0- 80	1294.
0- 90	1357.
0-100	1387.
0-110	1400.
0-120	1403.
0-130	1403.
0-140	1403.
0-150	1403.
0-160	1403.
0-170	1403.
0-180	1403.



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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	69	69	69	69	67	67	67	67	64	64	64	61	61	61	58	58	58	57
1	62	59	56	54	60	57	55	52	55	52	50	52	50	49	49	48	47	45
2	56	51	46	43	54	50	46	42	47	44	41	45	42	40	43	40	38	37
3	51	44	39	35	49	43	38	35	41	37	34	39	36	33	37	35	32	31
4	46	39	33	29	45	38	33	29	36	32	28	35	31	28	33	30	27	26
5	43	35	29	25	41	34	29	25	32	28	24	31	27	24	30	26	23	22
6	39	31	26	22	38	30	25	21	29	25	21	28	24	21	27	23	20	19
7	36	28	23	19	35	27	22	19	26	22	19	25	21	18	24	21	18	17
8	34	25	20	17	33	25	20	17	24	20	16	23	19	16	22	19	16	15
9	31	23	18	15	30	23	18	15	22	18	15	21	17	15	21	17	14	13
10	29	21	17	14	29	21	17	13	20	16	13	20	16	13	19	16	13	12

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