

# itl boulder

THE LIGHT CENTER OF THE INDUSTRY SINCE 1955

INDEPENDENT TESTING LABORATORIES, INC.  
4066 CAMELOT CIRCLE, LONGMONT, CO 80504 USA

PHONE: (303) 442-1255 • FAX: (970) 535-3114 • E-MAIL: itl@itlboulder.com • WEBSITE: www.itlboulder.com

REPORT NUMBER: ITL80575  
ISSUE DATE: 02/10/14  
PREPARED FOR: OXYGEN LIGHTING  
CATALOG NUMBER: 2-6184-24

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LUMINAIRE: FORMED SEMI-SPECULAR METAL HOUSING/MOUNTING PLATE, FLAT SEMI-SPECULAR TEXTURED FOIL REFLECTOR, FORMED CYLINDRICAL WHITE PLASTIC DIFFUSER WITH WOVEN WHITE CLOTH COVERED EXTERIOR, FLAT TRANSLUCENT WHITE ACRYLIC BOTTOM DIFFUSER, MACHINED SEMI-SPECULAR METAL DECORATIVE CENTER TRIM WITH CLEAR ACRYLIC BOTTOM. BALLAST IS EXPOSED IN THE CENTER OF THE OPTICAL COMPARTMENT.

LAMPS: TWO 13-WATT DOUBLE TWIN TUBE COMPACT FLUORESCENTS, SYLVANIA CF13DD/E/827, LAMPS HORIZONTAL WITH TUBES VERTICAL.

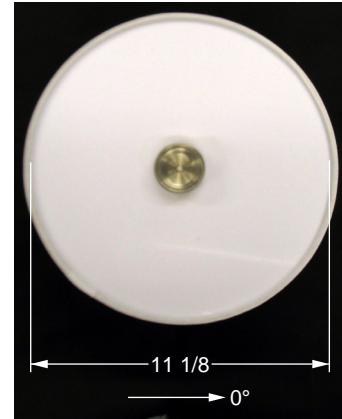
BALLAST: ANTRON CSD-UV18PS  
TOTAL INPUT WATTS = 27.3 AT 120.0 VOLTS  
MOUNTING: SURFACE

THE 0 DEGREE PLANE IS PERPENDICULAR TO THE LAMPS.

NOTE: DIFFUSER MATERIAL INFORMATION PROVIDED BY CLIENT.

REPORT IS BASED ON 900 LUMENS PER LAMP.

\*\* (EXPLANATION FOLLOWS) \*\*

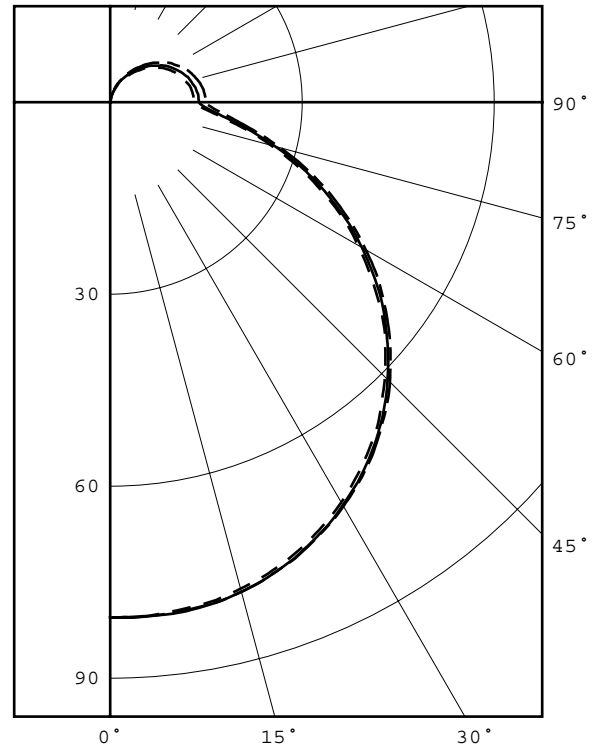


CANDELA DISTRIBUTION						FLUX
	0.0	22.5	45.0	67.5	90.0	
0	80.5	80.5	80.5	80.5	80.5	8
5	80.4	80.5	80.5	80.6	80.5	22
15	78.7	79.0	79.2	79.2	79.2	35
25	74.9	75.2	75.4	75.5	75.5	43
35	68.9	69.2	69.5	69.7	69.8	47
45	60.7	60.9	61.3	61.6	61.8	46
55	50.4	50.7	51.2	51.5	51.8	39
65	38.8	39.0	39.3	39.9	40.1	28
75	26.0	26.2	26.7	27.3	27.5	18
85	15.4	15.5	16.1	16.8	17.2	15
90	13.2	13.3	13.9	14.6	15.0	14
95	13.0	13.2	13.8	14.5	14.8	12
105	12.3	12.5	13.0	13.7	14.0	9
115	11.1	11.2	11.7	12.4	12.7	6
125	9.4	9.5	10.0	10.5	10.8	4
135	7.4	7.4	7.8	8.3	8.5	2
145	5.2	5.3	5.6	5.9	6.1	0
155	3.2	3.3	3.5	3.6	3.7	0
165	1.4	1.4	1.5	1.5	1.6	0
175	0.1	0.1	0.1	0.1	0.1	0
180	0.0	0.0	0.0	0.0	0.0	0

ZONAL LUMEN SUMMARY				
ZONE	LUMENS	%LAMP	%FIXT	
0- 30	65	3.6	18.6	
0- 40	108	6.0	31.1	
0- 60	201	11.2	57.8	
0- 90	287	15.9	82.4	
90-120	41	2.3	11.7	
90-130	50	2.8	14.2	
90-150	59	3.3	17.0	
90-180	61	3.4	17.6	
0-180	348	19.3	100.0	

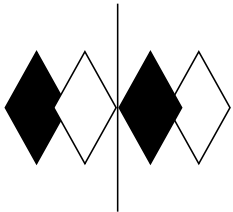
TOTAL LUMINAIRE EFFICIENCY = 19.3 %

CIE TYPE - SEMI-DIRECT  
PLANE : 0-DEG 90-DEG  
SPACING CRITERIA : 1.33 1.35



LEGEND:  
 0-deg -----  
 45-deg \_\_\_\_\_  
 90-deg - . - . - .

Checked B. HYRE  
 Approved R. BEATTIE  
 Lighting Engineer



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## CANDELA DISTRIBUTION LATERAL ANGLE

	0.0	22.5	45.0	67.5	90.0
0.0	80.5	80.5	80.5	80.5	80.5
5.0	80.4	80.5	80.5	80.6	80.5
10.0	79.8	80.0	80.2	80.1	80.1
15.0	78.7	79.0	79.2	79.2	79.2
20.0	77.1	77.3	77.6	77.6	77.6
25.0	74.9	75.2	75.4	75.5	75.5
30.0	72.2	72.4	72.7	72.9	72.9
35.0	68.9	69.2	69.5	69.7	69.8
40.0	65.2	65.3	65.7	65.8	66.0
45.0	60.7	60.9	61.3	61.6	61.8
50.0	56.0	56.1	56.4	56.8	57.0
55.0	50.4	50.7	51.2	51.5	51.8
60.0	44.7	45.0	45.4	45.8	46.1
65.0	38.8	39.0	39.3	39.9	40.1
70.0	32.4	32.6	33.1	33.7	33.9
75.0	26.0	26.2	26.7	27.3	27.5
80.0	20.0	20.1	20.7	21.4	21.6
85.0	15.4	15.5	16.1	16.8	17.2
90.0	13.2	13.3	13.9	14.6	15.0
95.0	13.0	13.2	13.8	14.5	14.8
100.0	12.8	12.9	13.5	14.2	14.5
105.0	12.3	12.5	13.0	13.7	14.0
110.0	11.8	11.9	12.4	13.1	13.4
115.0	11.1	11.2	11.7	12.4	12.7
120.0	10.3	10.4	10.9	11.5	11.7
125.0	9.4	9.5	10.0	10.5	10.8
130.0	8.4	8.5	8.9	9.4	9.6
135.0	7.4	7.4	7.8	8.3	8.5
140.0	6.3	6.4	6.7	7.1	7.2
145.0	5.2	5.3	5.6	5.9	6.1
150.0	4.2	4.3	4.5	4.8	4.9
155.0	3.2	3.3	3.5	3.6	3.7
160.0	2.3	2.3	2.5	2.6	2.7
165.0	1.4	1.4	1.5	1.5	1.6
170.0	0.6	0.6	0.6	0.6	0.6
175.0	0.1	0.1	0.1	0.1	0.1
180.0	0.0	0.0	0.0	0.0	0.0



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5-DEGREE  
 ZONAL LUMEN SUMMARY

0- 5	2
5- 10	6
10- 15	9
15- 20	13
20- 25	16
25- 30	19
30- 35	21
35- 40	23
40- 45	23
45- 50	24
50- 55	23
55- 60	22
60- 65	21
65- 70	18
70- 75	16
75- 80	13
80- 85	10
85- 90	8
90- 95	8
95-100	7
100-105	7
105-110	7
110-115	6
115-120	6
120-125	5
125-130	4
130-135	3
135-140	3
140-145	2
145-150	2
150-155	1
155-160	1
160-165	0
165-170	0
170-175	0
175-180	0

10-DEGREE  
 ZONAL LUMEN SUMMARY

0- 10	8
0- 20	30
0- 30	65
0- 40	108
0- 50	156
0- 60	201
0- 70	240
0- 80	269
0- 90	287
0-100	302
0-110	316
0-120	327
0-130	336
0-140	342
0-150	346
0-160	348
0-170	348
0-180	348



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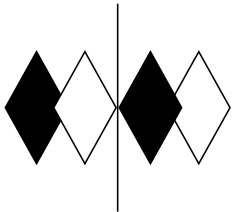
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COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

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	22	22	22	22	21	21	21	21	20	20	20	18	18	18	17	17	17	16	16
1	20	19	18	17	19	18	17	16	17	16	15	15	15	14	14	14	13	13	13
2	18	16	15	14	17	16	14	13	14	13	12	13	12	12	12	11	11	10	10
3	16	14	12	11	15	14	12	11	12	11	10	11	10	10	11	10	9	8	8
4	15	12	11	9	14	12	10	9	11	10	9	10	9	8	9	8	8	7	7
5	14	11	9	8	13	11	9	8	10	8	7	9	8	7	8	7	7	6	6
6	12	10	8	7	12	9	8	7	9	7	6	8	7	6	8	6	6	5	5
7	12	9	7	6	11	9	7	6	8	7	6	7	6	5	7	6	5	5	5
8	11	8	6	5	10	8	6	5	7	6	5	7	6	5	6	5	4	4	4
9	10	7	6	5	10	7	6	5	7	5	4	6	5	4	6	5	4	4	4
10	9	7	5	4	9	7	5	4	6	5	4	6	5	4	5	4	4	3	3

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

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The compact fluorescent lamps of the type used in this report may require special attention in photometry and luminaire application. Specifically, the lamps may generate lower flux output when operated in the horizontal position than when operated in the vertical base-up position. Unfortunately, at the time of this report, only the vertical flux output (lumen) rating is available from the lamp manufacturer. It is critical to note that if the lamp produces less lumens when in a horizontal position than when it is in a vertical position, the horizontal lamp calibration will yield higher luminaire candela and efficiency than a vertical lamp calibration. When applying the vertical lamp lumen rating to a report for a luminaire with a horizontal lamp(s) and using a horizontal lamp calibration, the report will show higher candela values than what the luminaire actually produced (since a horizontal lamp produces lower flux). For a report which was generated using a horizontal lamp calibration, any application calculations should use the actual flux output (lumens) from a horizontal lamp -- at this time, no such published lumen figures are available. The published lamp lumen rating given on this report is for a vertical base-up lamp. The lamp calibration for this report was performed with the lamp(s) in the same orientation as when the lamp(s) is/are in the luminaire.

CFL.DIS