



# 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: ITL59330

DATE: 10/19/07

PREPARED FOR: OXYGEN LIGHTING

CATALOG NUMBER: 16-5-24-F213

LUMINAIRE: FABRICATED WHITE PAINTED METAL REFLECTOR AND BALLAST HOUSING,  
FABRICATED WHITE PAINTED METAL LENS SPACER ASSEMBLY,  
FABRICATED SPECULAR GOLD FINISHED  
METAL BOTTOM PLATE AND TOP  
MOUNTING STEM, FROSTED TRANSLUCENT  
WHITE SEMI-HEMISPHERICAL GLASS  
DROP LENS.

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

BALLAST: ANTRON ELECTRONICS CSD-UV18P

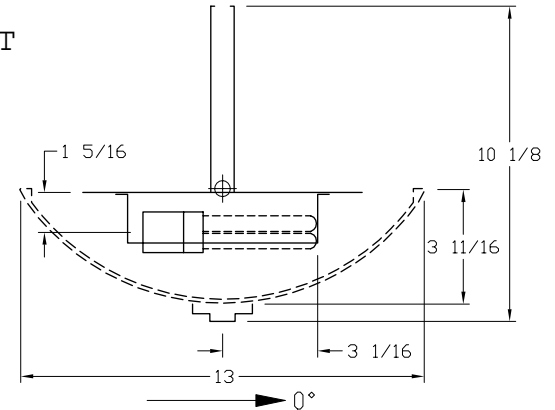
MOUNTING: PENDANT

TOTAL REFLECTANCE OF PAINT= 72.7 %

TOTAL INPUT WATTS= 29.5 AT 120.0 VOLTS

REPORT IS BASED ON 900 LUMENS PER LAMP.

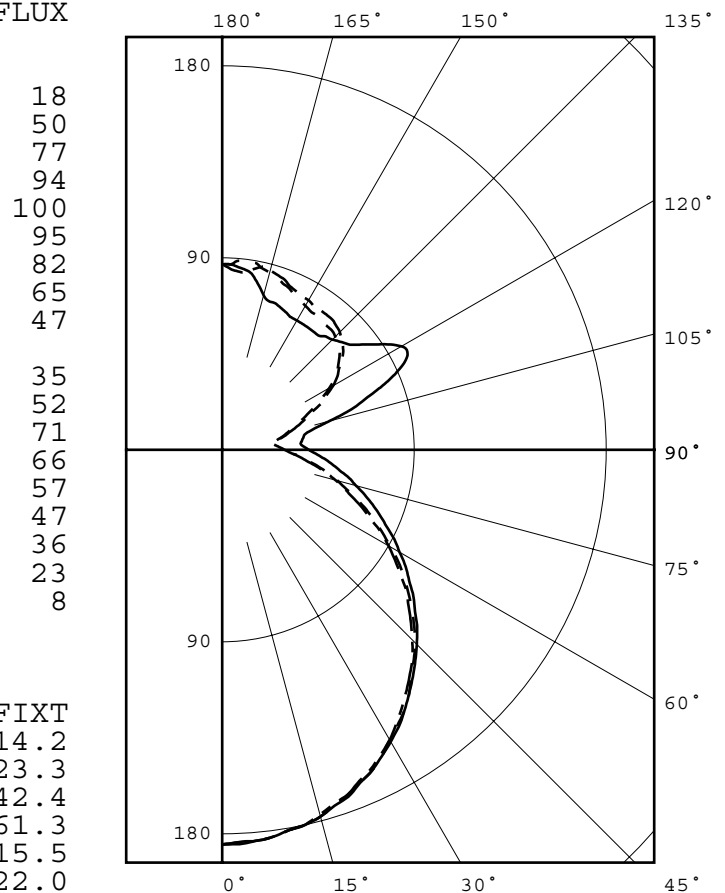
\*\* (explanation follows) \*\*



### CANDELA DISTRIBUTION

	0.0	45.0	90.0	135.0	180.0
0	185	185	185	185	185
5	184	185	184	184	184
15	178	179	178	177	177
25	166	168	166	165	165
35	149	151	149	147	147
45	128	130	129	127	126
55	104	107	107	104	102
65	79	82	85	80	77
75	56	61	65	60	55
85	37	43	48	41	36
90	30	37	41	36	30
95	25	32	37	32	25
105	32	53	52	52	33
115	48	74	93	74	51
125	66	67	86	70	67
135	75	71	73	73	78
145	77	74	70	76	80
155	80	77	71	79	82
165	86	80	75	81	87
175	89	88	86	85	84
180	87	87	87	87	87

### FLUX



### ZONAL LUMEN SUMMARY

ZONE	LUMENS	%LAMP	%FIXT
0- 30	145	8.0	14.2
0- 40	238	13.2	23.3
0- 60	433	24.1	42.4
0- 90	626	34.8	61.3
90-120	158	8.8	15.5
90-130	224	12.5	22.0
90-150	328	18.2	32.1
90-180	395	21.9	38.7
0-180	1021	56.7	100.0

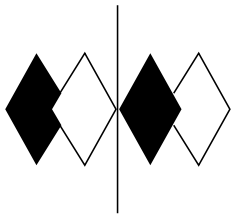
TOTAL LUMINAIRE EFFICIENCY = 56.7 %

CIE TYPE - SEMI-DIRECT

PLANE : 0-DEG 90-DEG 180-DEG  
SPACING CRITERIA : 1.3 1.3 1.3

Checked B. HYRE

Approved R. BEATTIE



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CANDELA DISTRIBUTION

	0.0	22.5	45.0	67.5	90.0	112.5	135.0	157.5	180.0
0.0	185	185	185	185	185	185	185	185	185
5.0	184	184	185	184	184	185	184	184	184
10.0	181	182	183	182	181	183	181	182	181
15.0	178	178	179	178	178	179	177	177	177
20.0	172	174	174	174	173	174	172	172	172
25.0	166	167	168	168	166	167	165	165	165
30.0	157	160	160	160	158	160	157	157	157
35.0	149	151	151	151	149	151	147	148	147
40.0	138	141	140	142	139	141	137	138	137
45.0	128	130	130	131	129	131	127	127	126
50.0	116	119	118	120	118	120	115	116	114
55.0	104	107	107	109	107	109	104	104	102
60.0	91	95	94	97	96	97	92	92	90
65.0	79	82	82	85	85	86	80	80	77
70.0	67	71	72	75	75	75	69	69	65
75.0	56	60	61	66	65	65	60	58	55
80.0	46	50	52	56	56	56	50	47	45
85.0	37	41	43	48	48	47	41	39	36
90.0	30	33	37	41	41	40	36	32	30
95.0	25	27	32	37	37	37	32	27	25
100.0	26	33	36	41	39	40	34	31	26
105.0	32	44	53	59	52	56	52	44	33
110.0	39	52	70	77	73	75	70	54	41
115.0	48	56	74	91	93	89	74	57	51
120.0	58	61	70	89	97	89	71	63	60
125.0	66	66	67	80	86	81	70	68	67
130.0	72	70	69	73	77	75	71	72	74
135.0	75	72	71	71	73	74	73	74	78
140.0	76	74	73	70	70	75	75	77	80
145.0	77	75	74	71	70	75	76	78	80
150.0	78	77	75	71	70	76	77	79	81
155.0	80	79	77	73	71	76	79	81	82
160.0	83	82	77	75	73	77	81	84	85
165.0	86	84	80	78	75	78	81	85	87
170.0	89	88	87	86	83	82	83	84	86
175.0	89	88	88	87	86	86	85	85	84
180.0	87	87	87	87	87	87	87	87	87



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#### ZONAL LUMEN SUMMARY

0- 5	4.
5- 10	13.
10- 15	21.
15- 20	29.
20- 25	36.
25- 30	41.
30- 35	45.
35- 40	48.
40- 45	50.
45- 50	50.
50- 55	49.
55- 60	46.
60- 65	43.
65- 70	39.
70- 75	35.
75- 80	30.
80- 85	26.
85- 90	21.
90- 95	18.
95-100	17.
100-105	22.
105-110	30.
110-115	35.
115-120	36.
120-125	34.
125-130	32.
130-135	29.
135-140	27.
140-145	25.
145-150	22.
150-155	19.
155-160	16.
160-165	13.
165-170	10.
170-175	6.
175-180	2.



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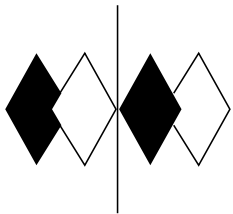
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COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

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	62	62	62	62	58	58	58	58	51	51	51	44	44	44	38	38	38	35	
1	56	53	50	48	52	50	47	45	43	41	40	37	36	35	32	31	30	27	
2	51	46	42	38	47	43	39	36	37	34	32	32	30	28	27	26	24	22	
3	46	40	35	31	43	37	33	30	32	29	27	28	25	23	24	22	20	18	
4	42	35	30	26	39	33	28	25	29	25	22	25	22	20	21	19	17	15	
5	38	31	26	22	36	29	25	21	26	22	19	22	19	17	19	17	15	13	
6	35	28	23	19	33	26	22	18	23	19	17	20	17	15	17	15	13	11	
7	33	25	20	17	30	24	19	16	21	17	15	18	15	13	16	13	11	10	
8	30	23	18	15	28	22	17	14	19	15	13	17	14	12	14	12	10	9	
9	28	21	16	13	26	20	16	13	17	14	12	15	12	10	13	11	9	8	
10	26	19	15	12	25	18	14	11	16	13	10	14	11	9	12	10	8	7	

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 require special attention in photometry and luminaire application. Specifically, the lamps generate lower flux output when operated in the horizontal position than when operated in the vertical position. Unfortunately, at the time of this report, only the vertical flux output (lumens) is available from lamp manufacturers.

It is critical to note that, all else equal, a horizontal lamp calibration will yield higher luminaire candela and efficiency than a vertical lamp calibration. However, 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. For a report which was generated using a vertical lamp calibration, the flux output from a vertical lamp should be used. The published lamp lumen figure given on this report is for a vertical lamp. The lamp calibration for this report was performed with the lamp in the same orientation as when the lamp is in the luminaire.

CFL.DIS