

# itl boulder

THE LIGHT CENTER OF THE INDUSTRY SINCE 1955

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

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REPORT NUMBER: ITL77187

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ISSUE DATE: 05/23/13

PREPARED FOR: OXYGEN LIGHTING

CATALOG NUMBER: 2-5146-124

LUMINAIRE: FABRICATED SEMI-SPECULAR METAL MOUNTING PLATE, FABRICATED WHITE PAINTED METAL REFLECTOR, WHITE FABRIC DIFFUSER WITH TRANSLUCENT WHITE COATED INTERIOR, TRANSLUCENT WHITE PLASTIC TOP AND BOTTOM DIFFUSERS. BALLAST IS EXPOSED IN LOWER CENTER OF OPTICAL COMPARTMENT.

LAMPS: TWO 13-WATT DOUBLE TWIN TUBE COMPACT FLUORESCENTS, SYLVANIA CF13DD/E/827, VERTICAL BASE-DOWN POSITION.

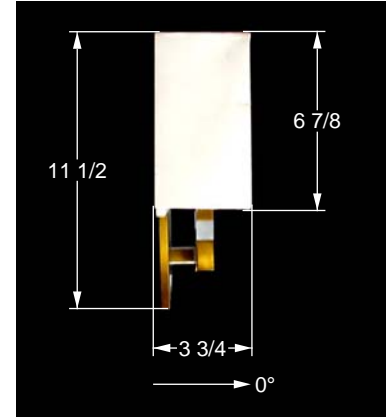
BALLAST: FULHAM RH1-UNV-213-C

TOTAL REFLECTANCE OF PAINT = 88.6 %

MOUNTING: WALL

TOTAL INPUT WATTS = 28.9 AT 120.0 VOLTS

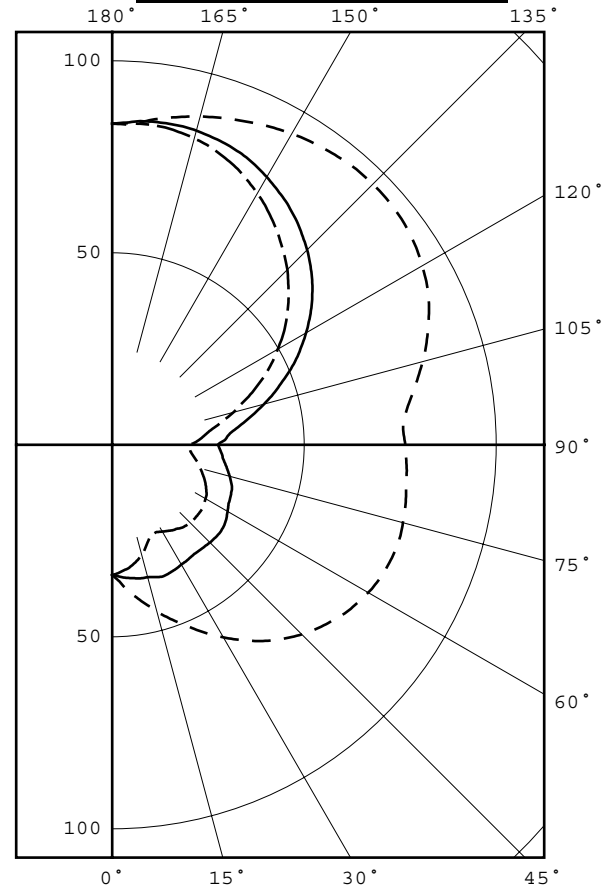
REPORT IS BASED ON 900 LUMENS PER LAMP.



### CANDELA DISTRIBUTION

### FLUX

	0.0	45.0	90.0	135.0	180.0	
0	33.9	33.9	33.9	33.9	33.9	
5	37.3	37.3	34.7	33.8	32.9	3
15	45.0	43.9	35.7	32.6	29.6	11
25	53.4	50.3	36.5	30.0	25.5	18
35	62.3	55.6	35.7	28.8	27.2	26
45	69.8	60.5	36.0	29.7	28.7	34
55	75.2	64.7	35.8	30.5	28.7	41
65	78.2	66.7	33.8	29.9	27.0	46
75	78.4	66.5	31.7	27.6	23.8	48
85	77.0	64.8	28.7	25.7	20.5	47
90	76.3	64.1	27.6	25.5	20.3	
95	76.4	64.9	30.5	28.5	23.7	49
105	83.7	73.0	40.9	39.4	32.7	57
115	90.9	80.9	52.9	51.9	44.3	63
125	94.9	86.3	63.4	63.3	55.2	65
135	96.0	89.2	71.8	72.0	64.5	61
145	94.7	90.5	78.1	78.6	72.2	52
155	92.0	90.1	82.6	83.1	78.6	40
165	88.5	88.2	84.7	85.1	82.6	24
175	84.3	84.8	84.6	84.6	83.9	8
180	83.6	83.6	83.6	83.6	83.6	



LEGEND:  
0-deg      - - - - -  
90-deg     = = = = =  
180-deg    - . - . -

### ZONAL LUMEN SUMMARY

ZONE	LUMENS	%LAMP	%FIXT
0- 30	33	1.8	4.7
0- 40	59	3.3	8.5
0- 60	135	7.5	19.4
0- 90	276	15.3	39.7
90-120	169	9.4	24.4
90-130	234	13.0	33.7
90-150	347	19.3	50.0
90-180	419	23.3	60.3
0-180	695	38.6	100.0

TOTAL LUMINAIRE EFFICIENCY = 38.6 %

CIE TYPE - SEMI-INDIRECT

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	112.5	135.0	157.5	180.0
0.0	33.9	33.9	33.9	33.9	33.9	33.9	33.9	33.9	33.9
5.0	37.3	37.6	37.3	36.0	34.7	34.2	33.8	32.8	32.9
10.0	41.0	41.4	40.6	38.5	35.3	34.2	33.2	32.8	31.6
15.0	45.0	45.2	43.9	41.0	35.7	34.0	32.6	31.6	29.6
20.0	49.0	49.2	46.9	42.9	36.6	34.9	31.4	30.0	27.0
25.0	53.4	53.5	50.3	44.4	36.5	35.0	30.0	28.7	25.5
30.0	57.9	57.8	53.2	45.2	36.0	33.7	28.6	29.2	26.1
35.0	62.3	61.8	55.6	45.9	35.7	31.1	28.8	30.3	27.2
40.0	66.3	65.7	58.1	47.1	35.7	29.8	29.3	31.5	28.2
45.0	69.8	69.1	60.5	48.0	36.0	29.3	29.7	32.2	28.7
50.0	72.7	71.9	62.9	49.0	36.2	29.9	30.4	32.6	28.8
55.0	75.2	74.2	64.7	49.7	35.8	30.8	30.5	32.7	28.7
60.0	77.0	75.9	66.0	49.8	34.7	31.4	30.3	32.5	28.1
65.0	78.2	77.1	66.7	49.5	33.8	31.5	29.9	31.8	27.0
70.0	78.7	77.7	66.9	49.1	33.2	31.0	29.2	30.8	25.5
75.0	78.4	77.6	66.5	48.0	31.7	29.8	27.6	29.5	23.8
80.0	77.7	76.9	65.7	46.7	30.0	28.9	26.5	28.1	22.1
85.0	77.0	76.2	64.8	45.6	28.7	28.0	25.7	26.5	20.5
90.0	76.3	75.5	64.1	44.8	27.6	27.7	25.5	26.5	20.3
95.0	76.4	75.5	64.9	46.4	30.5	30.5	28.5	30.1	23.7
100.0	79.6	79.1	68.6	50.4	35.2	35.2	33.2	33.9	27.4
105.0	83.7	83.1	73.0	55.4	40.9	41.1	39.4	39.2	32.7
110.0	87.5	87.0	77.2	60.5	46.8	47.3	45.6	44.8	38.3
115.0	90.9	90.2	80.9	65.2	52.9	53.2	51.9	50.6	44.3
120.0	93.2	92.7	83.9	69.5	58.3	58.8	57.9	55.9	49.8
125.0	94.9	94.5	86.3	73.4	63.4	63.9	63.3	60.9	55.2
130.0	95.8	95.5	88.0	76.7	67.9	68.4	67.9	65.6	60.0
135.0	96.0	95.9	89.2	79.5	71.8	72.5	72.0	69.8	64.5
140.0	95.7	95.6	90.0	81.7	75.2	75.9	75.5	73.6	68.4
145.0	94.7	94.9	90.5	83.5	78.1	78.8	78.6	76.8	72.2
150.0	93.5	93.9	90.6	84.8	80.5	81.2	81.1	79.5	75.6
155.0	92.0	92.5	90.1	85.8	82.6	83.2	83.1	81.6	78.6
160.0	90.3	91.0	89.3	86.1	83.9	84.4	84.4	83.1	80.9
165.0	88.5	89.1	88.2	86.0	84.7	85.1	85.1	84.1	82.6
170.0	86.5	87.0	86.6	85.3	84.9	85.2	85.2	84.5	83.7
175.0	84.3	84.6	84.8	84.4	84.6	84.6	84.6	84.0	83.9
180.0	83.6	83.6	83.6	83.6	83.6	83.6	83.6	83.6	83.6



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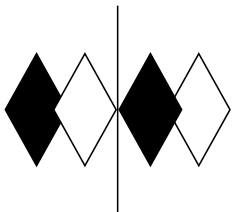
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5-DEGREE  
ZONAL LUMEN SUMMARY

0- 5	1
5- 10	3
10- 15	4
15- 20	6
20- 25	8
25- 30	10
30- 35	12
35- 40	14
40- 45	16
45- 50	18
50- 55	20
55- 60	21
60- 65	23
65- 70	24
70- 75	24
75- 80	24
80- 85	24
85- 90	23
90- 95	24
95-100	25
100-105	27
105-110	29
110-115	31
115-120	32
120-125	33
125-130	32
130-135	31
135-140	30
140-145	27
145-150	25
150-155	22
155-160	18
160-165	14
165-170	10
170-175	6
175-180	2

10-DEGREE  
ZONAL LUMEN SUMMARY

0- 10	3
0- 20	14
0- 30	33
0- 40	59
0- 50	93
0- 60	135
0- 70	181
0- 80	229
0- 90	276
0-100	325
0-110	381
0-120	445
0-130	510
0-140	571
0-150	623
0-160	662
0-170	687
0-180	695



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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	40	40	40	40	37	37	37	37	30	30	30	24	24	24	18	18	18	15
1	36	33	31	30	32	30	28	27	24	23	22	19	18	17	14	13	13	10
2	32	28	26	23	29	26	23	21	21	19	17	16	14	13	11	10	10	8
3	29	25	21	19	26	22	19	17	18	16	14	14	12	11	10	9	8	6
4	26	21	18	15	23	19	16	14	15	13	11	12	10	9	8	7	6	5
5	24	19	15	13	21	17	14	12	14	11	10	10	9	7	7	6	5	4
6	22	17	13	11	20	15	12	10	12	10	8	9	8	6	7	5	4	3
7	20	15	12	9	18	14	11	9	11	9	7	8	7	5	6	5	4	3
8	19	14	10	8	17	12	9	7	10	8	6	8	6	5	5	4	3	2
9	17	12	9	7	15	11	8	7	9	7	5	7	5	4	5	4	3	2
10	16	11	8	6	14	10	8	6	8	6	5	6	5	4	5	3	3	2

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.

NOTE: THE ZONAL CAVITY CALCULATION TECHNIQUE IS ACCURATE WHEN LUMINAIRES WITH SYMMETRIC CANDELA DISTRIBUTIONS ARE EMPLOYED AND WHEN THE LUMINAIRES ARE LOCATED SYMMETRICALLY THROUGHOUT THE ROOM. THIS UNIT HAS SPECIAL CHARACTERISTICS AND THEREFORE THESE COEFFICIENTS SHOULD BE USED WITH CAUTION.