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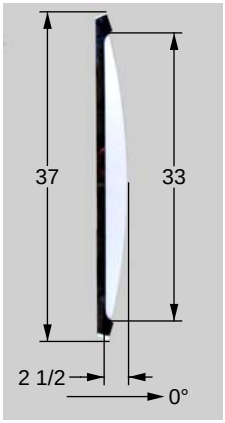
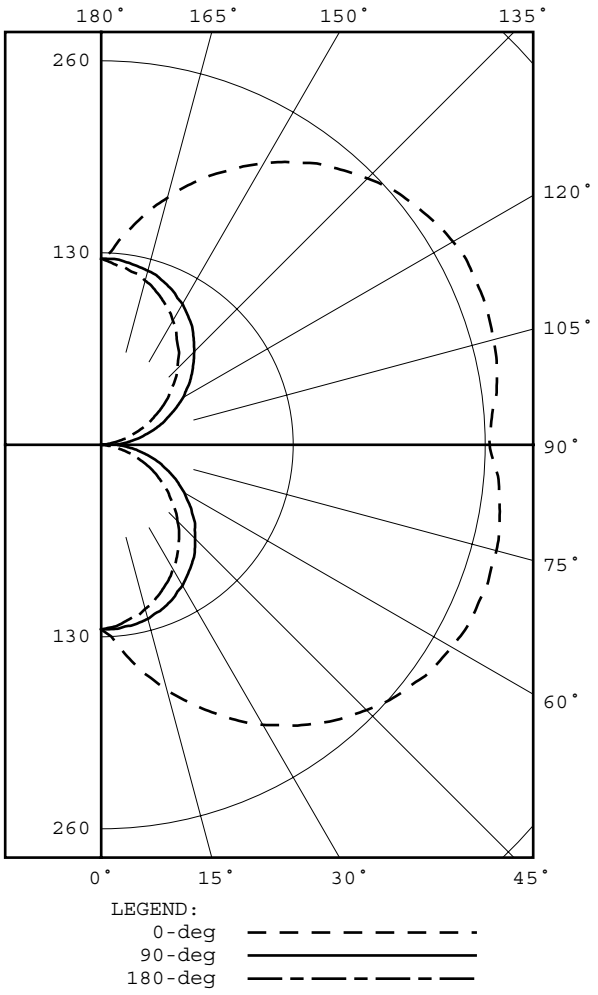
THE LIGHT CENTER OF THE INDUSTRY SINCE 1955
INDEPENDENT TESTING LABORATORIES, INC.
4066 CAMELOT CIRCLE, LONGMONT, CO 80504 USA
PHONE: (303) 442-1255 • FAX: (970) 535-3114 • E-MAIL: itl@itlboulder.com • WEBSITE: www.itlboulder.com

REPORT NUMBER: ITL77175
ISSUE DATE: 06/03/13
PREPARED FOR: OXYGEN LIGHTING
CATALOG NUMBER: 2-5105-24
LUMINAIRE: FABRICATED SPECULAR METAL HOUSING, FORMED WHITE PAINTED METAL REFLECTOR, TRANSLUCENT WHITE ACRYLIC DIFFUSER. BALLAST IS EXPOSED AND CENTERED IN THE OPTICAL COMPARTMENT.
LAMPS: TWO 21-WATT T-5 SYLVANIA FP21/841/ECO LINEAR FLUORESCENTS.
BALLAST: ANTRON ELECTRONICS ESD-A21T5S
THE 0 DEGREE PLANE IS PERPENDICULAR TO THE LAMPS.
TOTAL REFLECTANCE OF PAINT = 76.2 %
MOUNTING: WALL
TOTAL INPUT WATTS = 44.4 AT 120.0 VOLTS
NOTE: ACRYLIC MATERIAL INFORMATION PROVIDED BY CLIENT.
REPORT IS BASED ON 1900 LUMENS PER LAMP. *



CANDELA DISTRIBUTION

	0.0	45.0	90.0	135.0	180.0	FLUX
0	125	125	125	125	125	
5	137	133	125	123	123	12
15	172	154	122	116	115	38
25	204	173	115	106	104	64
35	232	188	104	92	90	86
45	254	198	90	76	73	103
55	270	203	74	58	55	112
65	277	201	56	39	36	113
75	277	195	37	20	17	107
85	270	184	18	3	2	95
90	263	179	11	0	0	
95	266	182	17	3	2	93
105	275	194	35	19	17	105
115	277	202	54	38	36	113
125	270	203	73	57	55	112
135	255	199	89	76	73	103
145	233	190	104	92	89	86
155	205	175	115	106	104	64
165	173	156	122	117	115	38
175	139	134	126	123	122	12
180	126	126	126	126	126	



ZONAL LUMEN SUMMARY

ZONE	LUMENS	%LAMP	%FIXT
0- 30	114	3.0	7.8
0- 40	200	5.3	13.7
0- 60	414	10.9	28.5
0- 90	729	19.2	50.1
90-120	311	8.2	21.4
90-130	423	11.1	29.1
90-150	612	16.1	42.1
90-180	726	19.1	49.9
0-180	1455	38.3	100.0

TOTAL LUMINAIRE EFFICIENCY = 38.3 % *

CIE TYPE - GENERAL DIFFUSE

PLANE	0-DEG	90-DEG	180-DEG
SPACING CRITERIA :	2.55	1.30	1.16
SHIELDING ANGLES :	90	90	

Checked *B HYRE*
Approved *R BEATTIE*
Lighting Engineer

* SEE ADDENDUM FOR FURTHER INFORMATION

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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	125	125	125	125	125	125	125	125	125
5.0	137	136	133	128	125	124	123	123	123
10.0	155	152	144	133	124	121	120	120	119
15.0	172	168	154	137	122	118	116	116	115
20.0	188	182	164	140	119	114	112	111	110
25.0	204	196	173	142	115	108	106	105	104
30.0	219	209	182	144	110	102	99	98	97
35.0	232	221	188	144	104	95	92	91	90
40.0	244	231	194	143	98	88	84	83	82
45.0	254	239	198	141	90	79	76	74	73
50.0	263	247	201	138	83	71	67	65	64
55.0	270	252	203	135	74	61	58	56	55
60.0	274	255	203	130	65	52	48	46	45
65.0	277	257	201	124	56	42	39	37	36
70.0	278	257	199	118	46	32	29	27	26
75.0	277	255	195	111	37	23	20	18	17
80.0	274	252	190	104	27	14	11	9	9
85.0	270	247	184	97	18	5	3	2	2
90.0	263	241	179	90	11	0	0	0	0
95.0	266	244	182	95	17	4	3	2	2
100.0	272	250	188	103	26	12	10	9	8
105.0	275	254	194	110	35	22	19	18	17
110.0	277	256	198	117	45	31	28	27	26
115.0	277	257	202	124	54	41	38	36	36
120.0	275	256	204	130	64	51	48	46	45
125.0	270	253	203	134	73	60	57	55	55
130.0	264	248	202	138	81	70	67	65	64
135.0	255	241	199	141	89	79	76	74	73
140.0	245	232	195	143	97	87	84	82	82
145.0	233	222	190	144	104	95	92	90	89
150.0	220	211	183	144	110	103	99	98	97
155.0	205	198	175	143	115	109	106	105	104
160.0	190	184	166	140	119	114	112	111	110
165.0	173	169	156	137	122	118	117	116	115
170.0	156	154	145	133	124	122	120	120	119
175.0	139	138	134	129	126	124	123	123	122
180.0	126	126	126	126	126	126	126	126	126

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5-DEGREE ZONAL LUMEN SUMMARY

0- 5	3
5- 10	9
10- 15	16
15- 20	22
20- 25	29
25- 30	35
30- 35	40
35- 40	45
40- 45	50
45- 50	53
50- 55	55
55- 60	57
60- 65	57
65- 70	56
70- 75	54
75- 80	52
80- 85	49
85- 90	46
90- 95	45
95-100	48
100-105	51
105-110	54
110-115	56
115-120	57
120-125	57
125-130	55
130-135	53
135-140	50
140-145	46
145-150	41
150-155	35
155-160	29
160-165	22
165-170	16
170-175	9
175-180	3

10-DEGREE ZONAL LUMEN SUMMARY

0- 10	12
0- 20	50
0- 30	114
0- 40	200
0- 50	303
0- 60	414
0- 70	527
0- 80	634
0- 90	729
0-100	822
0-110	927
0-120	1040
0-130	1152
0-140	1254
0-150	1341
0-160	1404
0-170	1443
0-180	1455

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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	41	41	41	41	38	38	38	38	32	32	32	26	26	26	22	22	22	19
1	36	34	32	30	33	31	30	28	26	25	24	21	20	20	17	16	16	14
2	32	29	26	24	30	27	24	22	22	20	19	18	17	15	14	13	12	10
3	29	25	22	19	27	23	20	18	19	17	15	16	14	12	12	11	10	8
4	27	22	19	16	24	20	17	15	17	14	13	14	12	10	11	9	8	7
5	24	19	16	13	22	18	15	12	15	12	11	12	10	9	10	8	7	6
6	22	17	14	11	20	16	13	11	13	11	9	11	9	8	9	7	6	5
7	21	15	12	10	19	14	11	9	12	10	8	10	8	7	8	6	5	4
8	19	14	11	9	17	13	10	8	11	9	7	9	7	6	7	6	5	4
9	18	13	10	8	16	12	9	7	10	8	6	8	6	5	7	5	4	3
10	17	12	9	7	15	11	8	6	9	7	5	8	6	5	6	5	4	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.

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.

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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 on the 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