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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: ITL80569
ISSUE DATE: 02/07/14
PREPARED FOR: OXYGEN LIGHTING
CATALOG NUMBER: 2-5138-24

PAGE: 1 OF 5

LUMINAIRE: FABRICATED SEMI-SPECULAR METAL HOUSING WITH DIFFUSE GENERAL INTERIOR FINISH, FABRICATED WHITE PAINTED METAL REFLECTOR AND SOCKET MOUNTING BRACKETS, TRANSLUCENT WHITE ACRYLIC DIFFUSER. BALLAST IS EXPOSED AND CENTERED IN THE OPTICAL COMPARTMENT.

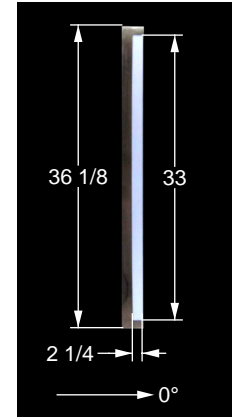
LAMP: ONE 39-WATT T-5 SYLVANIA FP39/841/HO LINEAR FLUORESCENT.

BALLAST: ANTRON ELECTRONICS ESS-A54T5S
THE 0 DEGREE PLANE IS PERPENDICULAR TO THE LAMP.

MOUNTING: WALL
TOTAL INPUT WATTS = 43.1 AT 120.0 VOLTS

NOTE: DIFFUSER MATERIAL INFORMATION PROVIDED BY CLIENT.

REPORT IS BASED ON 3100 LUMENS PER LAMP. *



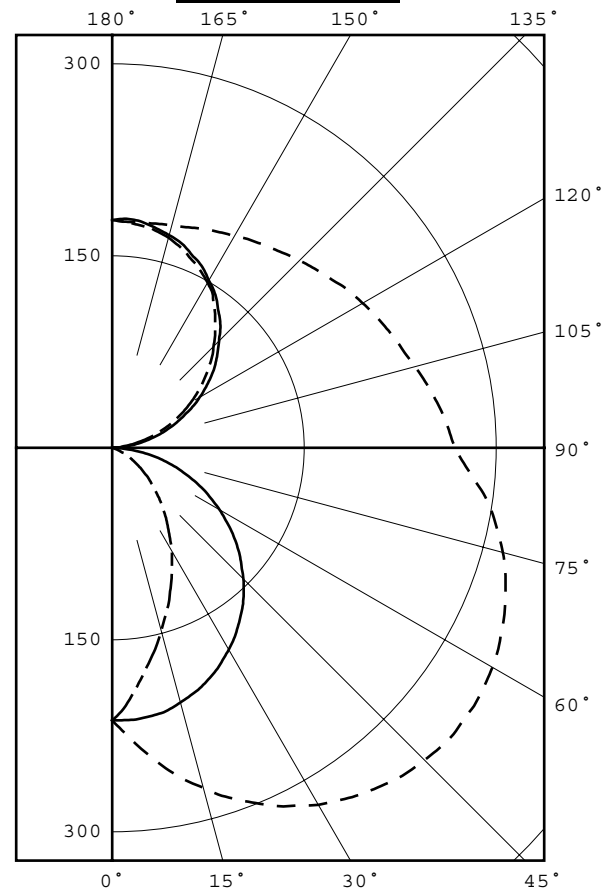
CANDELA DISTRIBUTION						FLUX
	0.0	45.0	90.0	135.0	180.0	
0	213	213	213	213	213	
5	234	228	213	197	192	20
15	275	254	206	162	148	59
25	309	273	192	128	110	93
35	332	283	171	95	76	118
45	345	283	145	64	48	133
55	347	274	114	38	26	137
65	336	256	80	17	9	131
75	316	230	45	3	0	117
85	284	197	11	0	0	98
90	268	180	0	0	0	
95	261	173	9	5	3	90
105	245	164	36	31	29	98
115	232	163	64	60	57	107
125	220	164	93	88	85	112
135	207	166	118	116	112	108
145	196	169	142	140	138	97
155	187	172	160	157	157	76
165	180	175	172	170	170	49
175	177	177	179	177	176	17
180	178	178	178	178	178	

ZONAL LUMEN SUMMARY				
ZONE	LUMENS	%LAMP	%FIXT	
0- 30	172	5.5	10.4	
0- 40	290	9.3	17.5	
0- 60	560	18.1	33.7	
0- 90	906	29.2	54.6	
90-120	295	9.5	17.8	
90-130	407	13.1	24.5	
90-150	612	19.7	36.9	
90-180	754	24.3	45.4	
0-180	1660	53.5	100.0	

TOTAL LUMINAIRE EFFICIENCY = 53.5 % *

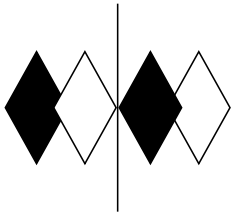
CIE TYPE - GENERAL DIFFUSE
PLANE : 0-DEG 90-DEG 180-DEG
SPACING CRITERIA : 2.19 1.27 0.73

* SEE ADDENDUM FOR FURTHER INFORMATION



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

Checked M KLOPF
Approved N WHITE
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	213	213	213	213	213	213	213	213	213
5.0	234	233	228	221	213	204	197	194	192
10.0	256	253	242	228	211	193	180	172	169
15.0	275	271	254	232	206	180	162	152	148
20.0	293	287	265	234	200	167	145	133	129
25.0	309	300	273	235	192	152	128	115	110
30.0	322	311	279	233	182	138	111	98	93
35.0	332	320	283	230	171	122	95	81	76
40.0	340	326	284	225	159	107	79	66	61
45.0	345	329	283	217	145	91	64	52	48
50.0	348	330	279	208	130	75	50	40	37
55.0	347	328	274	198	114	60	38	29	26
60.0	343	323	266	185	97	45	26	19	17
65.0	336	316	256	172	80	32	17	11	9
70.0	327	306	244	157	62	20	9	5	3
75.0	316	293	230	141	45	11	3	1	0
80.0	302	279	214	124	28	3	0	0	0
85.0	284	262	197	107	11	0	0	0	0
90.0	268	245	180	89	0	0	0	0	0
95.0	261	238	173	84	9	7	5	4	3
100.0	253	230	168	84	22	20	18	16	16
105.0	245	223	164	87	36	33	31	30	29
110.0	238	218	163	92	50	48	45	43	43
115.0	232	214	163	99	64	63	60	58	57
120.0	226	209	163	108	79	78	74	72	71
125.0	220	205	164	116	93	92	88	86	85
130.0	213	200	165	125	106	105	102	100	99
135.0	207	196	166	133	118	117	116	113	112
140.0	201	192	168	141	131	129	129	126	125
145.0	196	189	169	149	142	140	140	140	138
150.0	191	186	171	156	151	150	149	149	149
155.0	187	183	172	162	160	158	157	156	157
160.0	183	181	174	168	167	165	165	164	164
165.0	180	179	175	172	172	171	170	170	170
170.0	178	178	176	175	176	175	174	174	174
175.0	177	177	177	178	179	177	177	177	176
180.0	178	178	178	178	178	178	178	178	178



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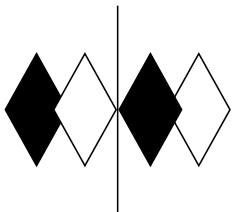
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5-DEGREE
 ZONAL LUMEN SUMMARY

0- 5	5
5- 10	15
10- 15	25
15- 20	34
20- 25	43
25- 30	50
30- 35	56
35- 40	62
40- 45	65
45- 50	68
50- 55	69
55- 60	68
60- 65	67
65- 70	64
70- 75	60
75- 80	56
80- 85	52
85- 90	47
90- 95	44
95-100	46
100-105	48
105-110	50
110-115	53
115-120	55
120-125	56
125-130	56
130-135	55
135-140	53
140-145	50
145-150	46
150-155	41
155-160	35
160-165	28
165-170	21
170-175	13
175-180	4

10-DEGREE
 ZONAL LUMEN SUMMARY

0- 10	20
0- 20	79
0- 30	172
0- 40	290
0- 50	423
0- 60	560
0- 70	691
0- 80	808
0- 90	906
0-100	996
0-110	1094
0-120	1201
0-130	1313
0-140	1421
0-150	1518
0-160	1594
0-170	1643
0-180	1660



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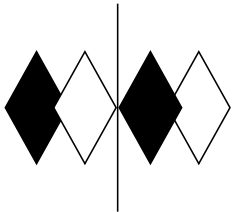
COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

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	58	58	58	58	54	54	54	54	46	46	46	39	39	39	32	32	32	29	
1	51	48	46	43	47	45	43	40	38	36	35	32	31	29	26	25	24	22	
2	46	42	38	34	43	38	35	32	33	30	28	27	25	23	22	21	19	17	
3	42	36	32	28	38	33	29	26	28	25	23	24	21	19	19	17	16	14	
4	38	32	27	23	35	29	25	22	25	22	19	21	18	16	17	15	13	11	
5	35	28	23	20	32	26	22	18	22	19	16	18	16	14	15	13	11	10	
6	32	25	20	17	29	23	19	16	20	16	14	17	14	12	14	12	10	8	
7	30	22	18	15	27	21	17	14	18	14	12	15	12	10	12	10	9	7	
8	27	20	16	13	25	19	15	12	16	13	11	14	11	9	11	9	8	6	
9	25	18	14	11	23	17	13	11	15	12	9	13	10	8	10	8	7	6	
10	24	17	13	10	22	16	12	10	14	11	8	12	9	7	10	8	6	5	

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