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

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REPORT NUMBER: ITL77183
ISSUE DATE: 05/31/13
PREPARED FOR: OXYGEN LIGHTING
CATALOG NUMBER: 2-5142-24

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LUMINAIRE: FABRICATED SEMI-SPECULAR METAL HOUSING, FABRICATED SEMI-SPECULAR METAL LAMP MOUNTING BRACKET, TRANSLUCENT WHITE CYLINDRICAL ACRYLIC DIFFUSER WITH FABRICATED SEMI-SPECULAR METAL END CAPS.

LAMP: ONE 28-WATT T-5 SYLVANIA FP28/841/ECO LINEAR FLUORESCENT.

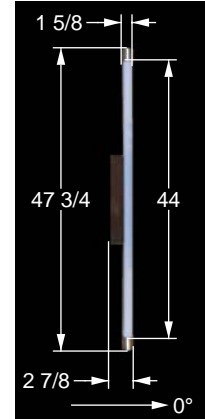
BALLAST: ANTRON ELECTRONICS ESD-A35T5
THE 0 DEGREE PLANE IS PERPENDICULAR TO THE LAMP.

MOUNTING: WALL

TOTAL INPUT WATTS = 31.4 AT 120.0 VOLTS

NOTE: DIFFUSER MATERIAL INFORMATION PROVIDED BY CLIENT.

REPORT IS BASED ON 2600 LUMENS PER LAMP. *

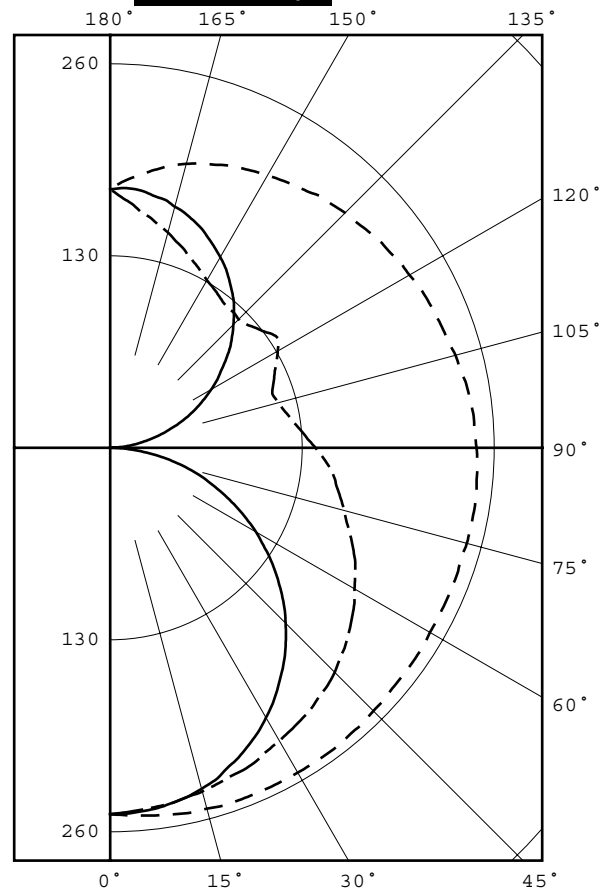


	CANDELA DISTRIBUTION					FLUX
	0.0	45.0	90.0	135.0	180.0	
0	248	248	248	248	248	
5	250	249	247	246	246	24
15	253	248	239	239	241	69
25	254	241	222	227	234	108
35	254	231	198	211	225	138
45	252	217	168	192	215	156
55	251	201	133	170	200	163
65	250	186	94	146	183	160
75	250	175	55	122	164	149
85	249	168	15	101	149	135
90	248	166	1	92	139	
95	247	166	9	84	130	125
105	242	166	36	81	118	124
115	237	171	65	97	123	126
125	231	178	92	97	134	123
135	225	185	118	107	123	113
145	217	190	140	122	127	98
155	209	192	157	139	137	76
165	199	190	169	154	151	49
175	184	182	176	169	166	17
180	175	175	175	175	175	

ZONAL LUMEN SUMMARY				
ZONE	LUMENS	%LAMP	%FIXT	
0- 30	200	7.7	10.2	
0- 40	337	13.0	17.3	
0- 60	657	25.3	33.7	
0- 90	1101	42.4	56.4	
90-120	375	14.4	19.2	
90-130	498	19.2	25.5	
90-150	709	27.3	36.3	
90-180	850	32.7	43.6	
0-180	1952	75.1	100.0	

TOTAL LUMINAIRE EFFICIENCY = 75.1 % *

CIE TYPE - GENERAL DIFFUSE
PLANE : 0-DEG 90-DEG 180-DEG
SPACING CRITERIA : 1.56 1.27 1.40
SHIELDING ANGLES : 90 90



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

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	248	248	248	248	248	248	248	248	248
5.0	250	251	249	246	247	244	246	247	246
10.0	252	252	249	244	244	241	243	244	244
15.0	253	252	248	241	239	236	239	241	241
20.0	254	252	245	235	231	228	233	237	237
25.0	254	251	241	228	222	220	227	232	234
30.0	254	250	236	219	211	210	219	227	229
35.0	254	248	231	209	198	199	211	221	225
40.0	253	246	224	198	184	186	201	215	220
45.0	252	243	217	185	168	172	192	209	215
50.0	251	240	209	172	151	158	181	201	208
55.0	251	237	201	158	133	143	170	192	200
60.0	250	235	193	143	114	127	159	183	191
65.0	250	233	186	129	94	112	146	173	183
70.0	250	231	180	115	74	97	134	163	173
75.0	250	230	175	103	55	82	122	153	164
80.0	250	229	171	93	35	68	111	144	156
85.0	249	228	168	86	15	56	101	136	149
90.0	248	226	166	82	1	45	92	126	139
95.0	247	225	166	83	9	39	84	117	130
100.0	245	224	166	86	22	42	80	110	123
105.0	242	222	166	92	36	49	81	107	118
110.0	239	220	168	101	51	53	88	109	117
115.0	237	219	171	110	65	62	97	116	123
120.0	234	218	175	120	79	70	96	124	131
125.0	231	217	178	130	92	80	97	123	134
130.0	228	216	182	139	106	91	102	118	127
135.0	225	214	185	148	118	103	107	118	123
140.0	222	213	188	157	130	114	114	121	124
145.0	217	210	190	164	140	124	122	125	127
150.0	213	208	192	170	149	134	130	130	131
155.0	209	205	192	174	157	143	139	137	137
160.0	204	201	192	177	164	151	147	144	144
165.0	199	197	190	179	169	159	154	152	151
170.0	192	191	187	179	173	165	162	159	158
175.0	184	184	182	178	176	171	169	167	166
180.0	175	175	175	175	175	175	175	175	175



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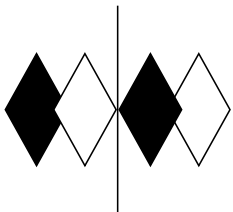
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5-DEGREE
 ZONAL LUMEN SUMMARY

0- 5	6
5- 10	18
10- 15	29
15- 20	40
20- 25	49
25- 30	58
30- 35	66
35- 40	72
40- 45	77
45- 50	80
50- 55	82
55- 60	82
60- 65	81
65- 70	79
70- 75	76
75- 80	73
80- 85	69
85- 90	66
90- 95	63
95-100	62
100-105	62
105-110	62
110-115	63
115-120	63
120-125	63
125-130	61
130-135	58
135-140	55
140-145	51
145-150	47
150-155	41
155-160	35
160-165	28
165-170	21
170-175	12
175-180	4

10-DEGREE
 ZONAL LUMEN SUMMARY

0- 10	24
0- 20	92
0- 30	200
0- 40	337
0- 50	494
0- 60	657
0- 70	817
0- 80	966
0- 90	1101
0-100	1226
0-110	1350
0-120	1476
0-130	1599
0-140	1712
0-150	1810
0-160	1886
0-170	1935
0-180	1952



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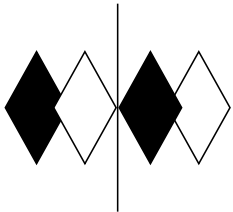
COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

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	82	82	82	82	76	76	76	76	65	65	65	55	55	55	47	47	47	42	
1	72	68	64	60	67	63	59	56	54	51	49	45	43	41	37	36	35	31	
2	65	58	52	47	60	54	49	44	46	42	38	38	35	33	32	29	27	24	
3	59	50	44	39	54	46	41	36	40	35	31	33	30	27	27	25	22	19	
4	53	44	37	32	49	41	35	30	35	30	26	29	25	22	24	21	19	16	
5	49	39	32	27	45	36	30	25	31	26	22	26	22	19	21	18	16	13	
6	45	35	28	23	41	32	26	22	28	23	19	23	19	16	19	16	14	12	
7	41	31	25	20	38	29	23	19	25	20	17	21	17	14	17	14	12	10	
8	38	28	22	18	35	26	21	17	23	18	15	19	15	13	16	13	11	9	
9	36	26	20	16	33	24	18	15	21	16	13	18	14	11	15	12	10	8	
10	33	24	18	14	31	22	17	13	19	15	12	16	13	10	14	11	9	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.

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