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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: ITL57393

DATE: 04/11/06

PREPARED FOR: OXYGEN LIGHTING

CATALOG NUMBER: 2-5106-24

LUMINAIRE: FABRICATED WHITE PAINTED METAL BALLAST/SOCKET MOUNTING PLATE, TRANSLUCENT WHITE ACRYLIC DIFFUSER IN FABRICATED UNFINISHED METAL FRAME. BALLAST IS EXPOSED AND CENTERED ON MOUNTING PLATE.

LAMPS: TWO 28-WATT T-5 SYLVANIA FP28/835

LINEAR FLUORESCENTS.

BALLAST: ANTRON ESD-A35T5

MOUNTING: WALL

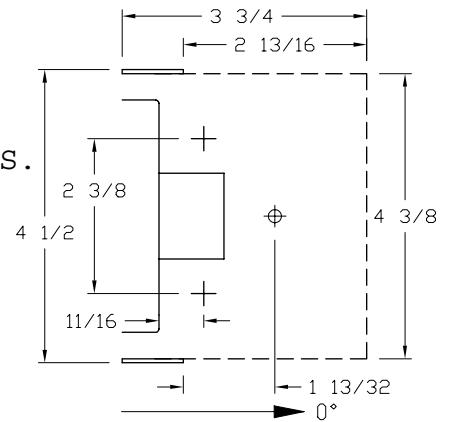
TOTAL REFLECTANCE OF PAINT= 71.2 %

THE 0 DEGREE PLANE IS PERPENDICULAR TO THE LAMPS.

TOTAL INPUT WATTS= 59.1 AT 120.0 VOLTS

LUMEN TO CANDELA RATIO USED= 9.17

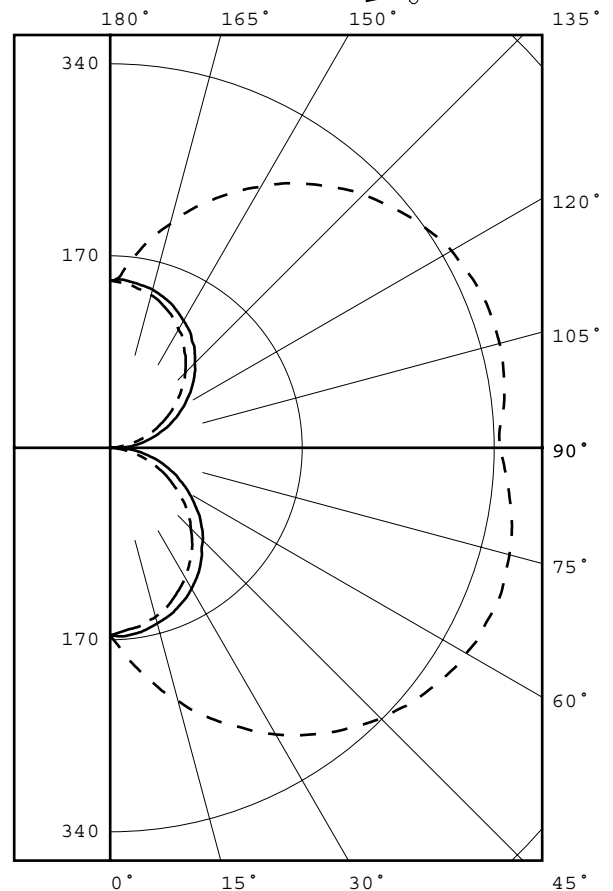
REPORT IS BASED ON 2900 LUMENS PER LAMP. \*



### CANDELA DISTRIBUTION

### FLUX

	0.0	45.0	90.0	135.0	180.0	
0	166	166	166	166	166	17
5	188	182	167	165	162	51
15	232	210	161	157	155	86
25	273	234	151	144	141	115
35	310	253	136	126	123	137
45	339	264	116	104	101	150
55	358	269	93	79	77	151
65	367	266	68	53	52	141
75	366	256	44	28	27	123
85	353	238	19	5	4	122
90	345	230	11	0	0	137
95	349	236	20	6	5	144
105	357	249	42	28	27	141
115	354	255	65	51	49	128
125	340	254	87	74	72	106
135	317	246	106	96	94	77
145	286	233	124	115	113	46
155	248	212	136	130	129	15
165	205	187	145	141	140	
175	161	158	149	147	146	
180	148	148	148	148	148	



#### LEGEND:

0-deg: - - - - -  
90-deg: \_\_\_\_\_  
180-deg: - - - - -

### ZONAL LUMEN SUMMARY

ZONE	LUMENS	%LAMP	%FIXT
0- 30	153	2.6	8.1
0- 40	269	4.6	14.2
0- 60	555	9.6	29.5
0- 90	970	16.7	51.5
90-120	403	7.0	21.4
90-130	544	9.4	28.9
90-150	778	13.4	41.2
90-180	916	15.8	48.5
0-180	1886	32.5	100.0

TOTAL LUMINAIRE EFFICIENCY = 32.5 % \*

### CIE TYPE - DIRECT-INDIRECT

PLANE	0-DEG	90-DEG	180-DEG
SPACING CRITERIA	2.6	1.3	1.2
SHIELDING ANGLES	90	90	

Checked N.WHITE

Approved R.BEATTIE

\* SEE ADDENDUM FOR FURTHER INFORMATION

THIS REPORT IS BASED ON PUBLISHED INDUSTRY PROCEDURES. FIELD PERFORMANCE MAY DIFFER FROM LABORATORY PERFORMANCE.



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	0.0	22.5	45.0	67.5	90.0	112.5	135.0	157.5	180.0
0.0	166	166	166	166	166	166	166	166	166
5.0	188	183	182	172	167	166	165	164	162
10.0	210	204	196	179	165	163	162	161	160
15.0	232	224	210	184	161	159	157	156	155
20.0	254	243	223	188	157	153	151	150	149
25.0	273	261	234	191	151	147	144	143	141
30.0	293	277	244	192	144	138	136	135	133
35.0	310	293	253	192	136	129	126	125	123
40.0	325	306	259	191	126	119	115	115	113
45.0	339	317	264	188	116	108	104	104	101
50.0	350	327	267	184	105	96	92	92	90
55.0	358	334	269	178	93	83	79	79	77
60.0	364	339	268	171	81	70	66	66	64
65.0	367	341	266	164	68	57	53	54	52
70.0	369	341	262	156	56	44	41	42	39
75.0	366	338	256	146	44	31	28	29	27
80.0	361	332	248	136	31	19	16	17	15
85.0	353	324	238	125	19	7	5	6	4
90.0	345	314	230	114	11	0	0	0	0
95.0	349	320	236	123	20	8	6	7	5
100.0	354	326	243	132	31	19	17	17	16
105.0	357	329	249	141	42	31	28	29	27
110.0	357	330	253	149	54	42	40	40	38
115.0	354	328	255	155	65	54	51	51	49
120.0	349	324	255	161	76	65	63	63	61
125.0	340	318	254	167	87	77	74	74	72
130.0	329	309	251	171	97	88	85	86	83
135.0	317	298	246	173	106	99	96	96	94
140.0	302	286	240	175	116	109	106	106	104
145.0	286	272	233	175	124	118	115	115	113
150.0	267	255	223	174	130	126	123	123	121
155.0	248	239	212	172	136	132	130	130	129
160.0	228	221	200	168	141	138	136	136	135
165.0	205	201	187	163	145	142	141	141	140
170.0	184	181	173	158	147	146	145	144	143
175.0	161	160	158	151	149	148	147	146	146
180.0	148	148	148	148	148	148	148	148	148



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ZONAL LUMEN SUMMARY

0- 5	4.
5- 10	12.
10- 15	21.
15- 20	30.
20- 25	39.
25- 30	47.
30- 35	54.
35- 40	61.
40- 45	66.
45- 50	71.
50- 55	74.
55- 60	76.
60- 65	76.
65- 70	75.
70- 75	72.
75- 80	69.
80- 85	64.
85- 90	59.
90- 95	59.
95-100	63.
100-105	67.
105-110	70.
110-115	72.
115-120	72.
120-125	71.
125-130	69.
130-135	66.
135-140	62.
140-145	56.
145-150	50.
150-155	43.
155-160	35.
160-165	27.
165-170	19.
170-175	11.
175-180	4.



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COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

EFFECTIVE FLOOR CAVITY REFLECTANCE 0.20

RC	80				70				50			30			10			0
	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
0	35	35	35	35	32	32	32	32	27	27	27	23	23	23	19	19	19	17
1	31	29	27	26	28	27	25	24	22	21	20	19	18	17	15	14	14	12
2	28	25	22	20	25	23	21	19	19	17	16	16	14	13	12	12	11	9
3	25	21	19	16	23	20	17	15	16	15	13	13	12	11	11	10	9	7
4	23	19	16	14	21	17	15	13	14	12	11	12	10	9	9	8	7	6
5	21	17	14	11	19	15	13	11	13	11	9	10	9	8	8	7	6	5
6	19	15	12	10	17	14	11	9	11	9	8	9	8	6	7	6	5	4
7	18	13	10	8	16	12	10	8	10	8	7	8	7	6	7	6	5	4
8	16	12	9	7	15	11	9	7	9	7	6	8	6	5	6	5	4	3
9	15	11	8	6	14	10	8	6	8	7	5	7	5	4	6	4	4	3
10	14	10	7	6	13	9	7	5	8	6	5	6	5	4	5	4	3	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  
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SPECIAL TEST PROCEDURES FOR T-5 LAMPS INCLUDING EXPLANATION OF THE IMPORTANCE OF LAMP LUMEN RATINGS.  
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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 they 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 the candela values on the luminaire test report are higher than what the luminaire actually produced and the total luminaire efficiency 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 35 degree C ambient temperature.

T5TEMP.DIS