LTL LUMINAIRE TESTING LABORATORY, INC.

IES SUSTAINING MEMBER

905 Harrison Street · Allentown, PA 18103 · (610) 770-1044 · Fax (610) 770-8912 · www.LuminaireTesting.com

LTL NUMBER: 07220 DATE: 02-04-2003
PREPARED FOR: PRECISION ARCHITECTURAL LIGHTING
CATALOG NUMBER: TRPO2-PP4-4-PB-120-T8
LUMINAIRE: EXTRUDED ALUMINUM HOUSING, FORMED SPECULAR ALUMINUM REFLECTORS BESIDE LAMPS, 12 CELL, 1 1/2" DEEP, FORMED SEMI-SPECULAR ALUMINUM LOUVER BELOW LAMPS, CLEAR POLYCARBONATE ENCLOSURE WITH LAMINATED PERFORATED SPECULAR LAYER ABOVE LAMPS.
LAMPS: TWO PHILIPS F32T8/TL841 RATED AT 2850 LUMENS EACH.
BALLAST: ONE ADVANCE REL-2P32-SC
MOUNTING: WALL
LUMEN TO CANDELA RATIO USED = 9.18
TOTAL INPUT WATTS = 56.1 AT 120.0 VOLTS
THE 0 DEGREE PLANE IS PERPENDICULAR TO THE LAMPS.

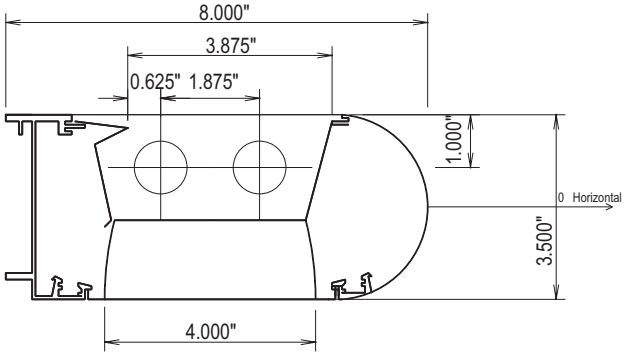
CANDELA DISTRIBUTION

	0.0	22.5	45.0	67.5	90.0	112.5	135.0	157.5	180.0	FLUX
0	889	889	889	889	889	889	889	889	889	
5	982	961	944	909	880	876	884	887	891	88
15	1178	1152	1077	943	838	858	929	969	970	277
25	1103	1105	1085	955	764	832	883	892	897	431
35	763	803	913	899	663	756	755	734	725	491
45	791	730	610	726	529	597	580	717	807	504
55	448	457	497	473	377	416	511	501	499	410
65	151	165	162	173	150	173	189	212	223	170
75	17	17	18	18	15	19	21	21	21	23
85	4	5	4	4	4	4	4	4	4	5
90	0	0	0	0	0	0	0	0	0	
95	10	13	15	13	10	13	13	12	13	15
105	97	109	121	104	63	96	99	85	85	102
115	300	313	290	207	155	207	267	269	271	245
125	455	435	372	290	248	297	362	416	438	319
135	492	468	406	374	328	369	411	457	475	319
145	483	475	462	444	394	427	465	491	497	286
155	512	513	512	487	445	469	493	512	519	228
165	547	543	529	497	477	493	508	515	519	145
175	517	508	504	495	493	497	506	507	502	48
180	497	497	497	497	497	497	497	497	497	

ZONAL LUMEN SUMMARY

ZONE	LUMENS	%LAMP	%FIXT
0- 30	796	14.0	19.4
0- 40	1286	22.6	31.3
0- 60	2200	38.6	53.6
0- 90	2398	42.1	58.4
90-120	362	6.4	8.8
90-130	681	11.9	16.6
90-150	1286	22.6	31.3
90-180	1707	29.9	41.6
0-180	4105	72.0	100.0

#07220



TOTAL LUMINAIRE EFFICIENCY: 72.0%
CIE TYPE: GENERAL DIFFUSE

PLANE:	0-DEG	90-DEG	180-DEG
SPACING CRITERIA:	1.4	1.2	1.3
SHIELDING ANGLES:	30	21	30

TESTED BY HERSCHEL SCHRECK
CHECKED BY MIKE GRATHER

THIS REPORT BASED ON LM-41 AND OTHER PERTINENT IESNA PROCEDURES.

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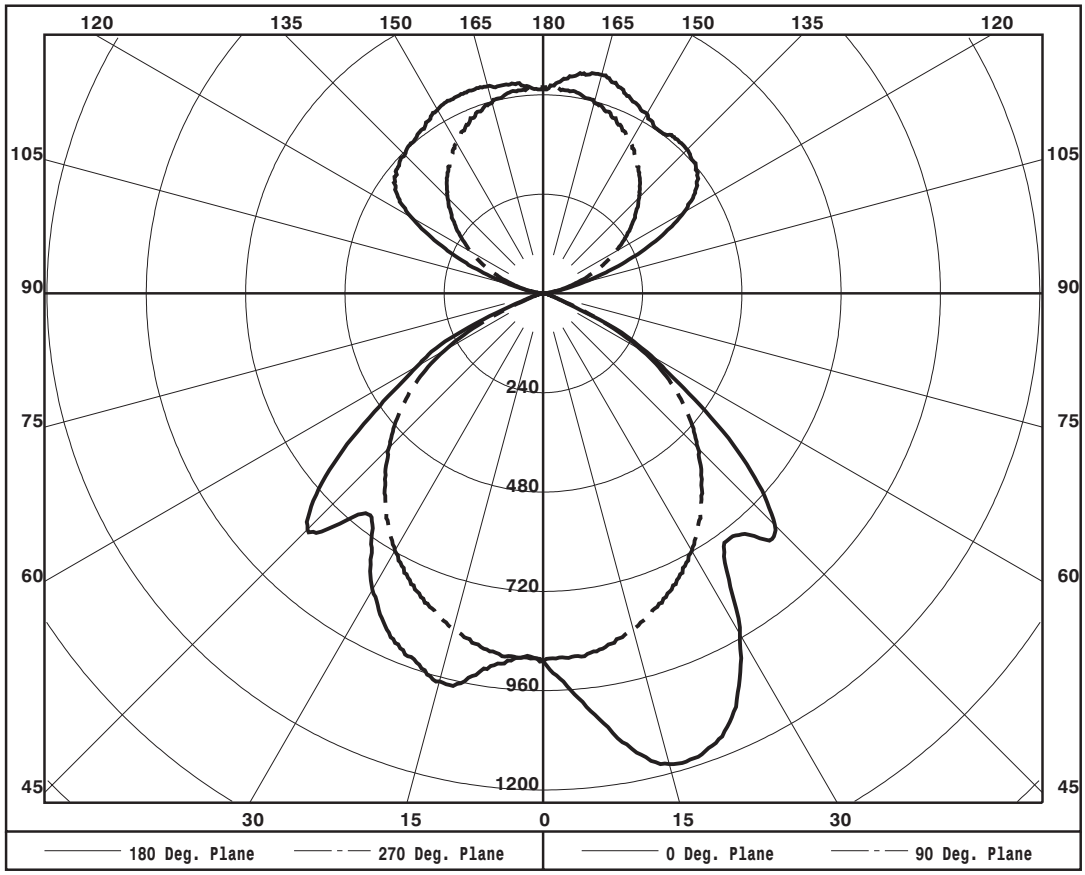
ZONAL LUMEN SUMMARY

0- 5	21.
5- 10	66.
10- 15	115.
15- 20	162.
20- 25	201.
25- 30	230.
30- 35	245.
35- 40	246.
40- 45	252.
45- 50	252.
50- 55	229.
55- 60	180.
60- 65	120.
65- 70	51.
70- 75	16.
75- 80	7.
80- 85	3.
85- 90	3.
90- 95	3.
95-100	12.
100-105	33.
105-110	69.
110-115	108.
115-120	138.
120-125	156.
125-130	162.
130-135	162.
135-140	157.
140-145	149.
145-150	138.
150-155	123.
155-160	105.
160-165	84.
165-170	61.
170-175	36.
175-180	12.

PLANE:	0-DEG	90-DEG
LUMINOUS LENGTH:	4.000	48.000

LUMINANCE IN CANDELA PER SQUARE METER

ANGLE IN DEG	AVERAGE 0-DEG	AVERAGE 45-DEG	AVERAGE 90-DEG
0	7176.	7176.	7176.
45	9030.	6964.	6039.
55	6305.	6995.	5306.
65	2884.	3094.	2865.
75	530.	561.	468.
85	370.	370.	370.



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	0.0	22.5	45.0	67.5	90.0	112.5	135.0	157.5	180.0
0	889	889	889	889	889	889	889	889	889
5	982	961	944	909	880	876	884	887	891
10	1101	1066	1012	930	867	872	904	927	936
15	1178	1152	1077	943	838	858	929	969	970
20	1169	1156	1108	950	806	845	931	934	935
25	1103	1105	1085	955	764	832	883	892	897
30	951	984	1020	940	718	809	828	822	827
35	763	803	913	899	663	756	755	734	725
40	759	695	765	821	595	676	668	649	698
45	791	730	610	726	529	597	580	717	807
50	642	632	546	610	458	513	522	670	688
55	448	457	497	473	377	416	511	501	499
60	301	278	337	323	276	301	364	330	354
65	151	165	162	173	150	173	189	212	223
70	38	40	56	47	38	50	65	72	57
75	17	17	18	18	15	19	21	21	21
80	7	6	8	10	9	12	11	12	11
85	4	5	4	4	4	4	4	4	4
90	0	0	0	0	0	0	0	0	0
95	10	13	15	13	10	13	13	12	13
100	31	40	49	46	28	42	38	31	31
105	97	109	121	104	63	96	99	85	85
110	193	210	213	165	109	156	185	172	171
115	300	313	290	207	155	207	267	269	271
120	394	394	340	247	201	251	325	361	369
125	455	435	372	290	248	297	362	416	438
130	482	455	389	334	290	335	386	440	465
135	492	468	406	374	328	369	411	457	475
140	493	464	434	414	364	401	445	474	485
145	483	475	462	444	394	427	465	491	497
150	502	493	487	470	421	448	482	504	513
155	512	513	512	487	445	469	493	512	519
160	531	535	529	497	467	484	504	518	521
165	547	543	529	497	477	493	508	515	519
170	539	534	523	499	492	500	511	516	513
175	517	508	504	495	493	497	506	507	502
180	497	497	497	497	497	497	497	497	497

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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	79	79	79	79	73	73	73	73	63	63	63	54	54	54	46	46	46	42
1	73	70	68	65	68	66	63	62	57	56	54	49	48	47	42	42	41	38
2	67	62	59	55	63	59	55	52	51	49	47	45	43	41	39	37	36	33
3	62	56	51	47	58	52	48	45	46	43	40	40	38	36	35	33	32	29
4	57	50	44	40	53	47	42	39	41	38	35	36	34	31	32	30	28	26
5	52	44	39	35	49	42	37	33	37	33	30	33	30	27	28	26	24	22
6	48	40	34	30	45	37	32	29	33	29	26	29	26	24	26	23	21	19
7	44	36	30	26	41	34	29	25	30	26	23	26	23	21	23	21	19	17
8	41	32	26	23	38	30	25	22	27	23	20	24	20	18	21	18	16	15
9	38	29	23	20	35	27	22	19	24	20	17	21	18	16	19	16	14	13
10	35	26	21	17	33	25	20	17	22	18	15	19	16	14	17	14	12	11

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.

THIS TEST WAS CONDUCTED USING RELATIVE PHOTOMETRY TECHNIQUES ACCORDING TO STANDARD IESNA PROCEDURES. THE USER MUST THEREFORE USE CAUTION IN THE FOLLOWING SITUATIONS: 1) THIS TEST WAS PERFORMED USING A SPECIFIC BALLAST/LAMP COMBINATION. EXTRAPOLATION OF THESE DATA FOR OTHER BALLAST/LAMP COMBINATIONS MAY PRODUCE ERRONEOUS RESULTS. 2) ACCORDING TO IESNA PROCEDURES, THE BALLAST(S) AND LAMP(S) ARE PRESUMED TO PRODUCE 100% OF RATED OUTPUT. AN APPROPRIATE BALLAST FACTOR MUST BE APPLIED TO THE LUMEN OUTPUT RATINGS AND LUMINOUS INTENSITY VALUES GIVEN. 3) THIS TEST WAS CONDUCTED IN A CONTROLLED LABORATORY ENVIRONMENT WHERE THE AMBIENT TEMPERATURE WAS HELD AT 25 C 1 C. FIELD PERFORMANCE MAY DIFFER PARTICULARLY IN REGARDS TO CHANGE IN LUMINOUS OUTPUT AS A RESULT OF DIFFERENCE IN AMBIENT TEMPERATURE AND METHOD OF MOUNTING THE LUMINAIRE.

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INITIAL ILLUMINATION OF 50 FOOTCANDLES USING LTL TEST NUMBER 07220
LUMINAIRE SUSPENSION LENGTH = 1.5
WORKING PLANE HEIGHT = 2.50
FLOOR REFLECTANCE = 20

ROOM HT		8				9				10				12			
CEIL RF		80		70		80		70		80		70		80		70	
WALL RF		70	50	50	30	70	50	50	30	70	50	50	30	70	50	50	30
WIDTH	LENGTH																
10.	10.	2	2	2	3	2	2	3	3	2	3	3	3	3	3	3	4
10.	15.	3	3	3	3	3	3	3	4	3	3	4	4	3	4	4	5
15.	20.	5	5	5	5	5	5	5	6	5	5	6	6	5	6	7	7
15.	30.	6	7	7	8	7	7	8	8	7	8	8	9	7	8	9	10
20.	20.	6	6	6	7	6	6	7	7	6	7	7	8	7	8	8	9
20.	30.	8	9	9	10	8	9	10	10	9	9	10	11	9	10	11	12
20.	40.	11	11	12	12	11	12	12	13	11	12	13	14	12	13	14	15
20.	60.	15	16	17	18	16	17	18	19	16	17	18	20	17	19	20	21
30.	30.	12	12	13	14	12	13	13	14	12	13	14	15	13	14	15	16
30.	40.	15	16	17	17	15	16	17	18	16	17	18	19	17	18	19	20
30.	50.	19	19	21	21	19	20	21	22	19	21	22	23	20	22	23	25
30.	60.	22	23	25	25	23	24	25	26	23	24	26	27	24	26	27	29
60.	60.	43	44	47	48	43	45	48	49	44	46	49	50	45	47	50	53
60.	80.	56	58	62	63	57	59	63	64	58	60	64	66	59	62	66	68
60.	100.	70	72	77	78	71	73	78	79	72	74	79	81	73	76	81	84
100.	100.	115	117	125	127	116	118	127	129	117	120	128	131	119	123	131	135

QUANTITY OF LUMINAIRES