

# itl boulder

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: ITL78304

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ISSUE DATE: 09/10/13

PREPARED FOR: PRECISION ARCHITECTURAL LIGHTING

CATALOG NUMBER: MLS5-I1/D2-4-TWA-120-T8

LUMINAIRE: EXTRUDED 2-PIECE METAL HOUSING WITH WHITE PAINTED GENERAL INTERIOR FINISH, FABRICATED WHITE PAINTED METAL END CAPS AND 2 DISTINCT OPTICAL COMPARTMENTS, TOP OPTICAL COMPARTMENT CONSISTS OF: FORMED WHITE PAINTED METAL REFLECTOR, FORMED SPECULAR METAL SOCKET MOUNTING BRACKETS. BOTTOM OPTICAL COMPARTMENT CONSISTS OF: FORMED WHITE PAINTED METAL REFLECTOR AND SOCKET MOUNTING BRACKETS, EXTRUDED TRANSLUCENT WHITE FROSTED ACRYLIC DIFFUSER. DIFFUSER FROSTED BOTH SIDES. OPEN TOP.

LAMPS: THREE 32-WATT T-8 FO32/835 LINEAR FLUORESCENTS.

BALLAST: UNIVERSAL B232IUNV-C, UNIVERSAL B232IUNVHP-N

THE 0 DEGREE PLANE IS PARALLEL WITH THE LAMPS.

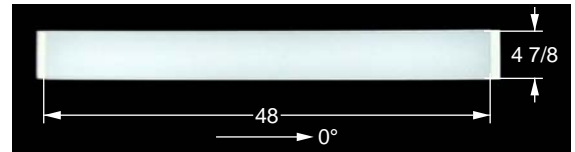
TOTAL REFLECTANCE OF PAINT = 90.0 %

MOUNTING: SUSPENDED

TOTAL INPUT WATTS = 86.2 AT 120.0 VOLTS

NOTE: DIFFUSER MATERIAL INFORMATION PROVIDED BY CLIENT.

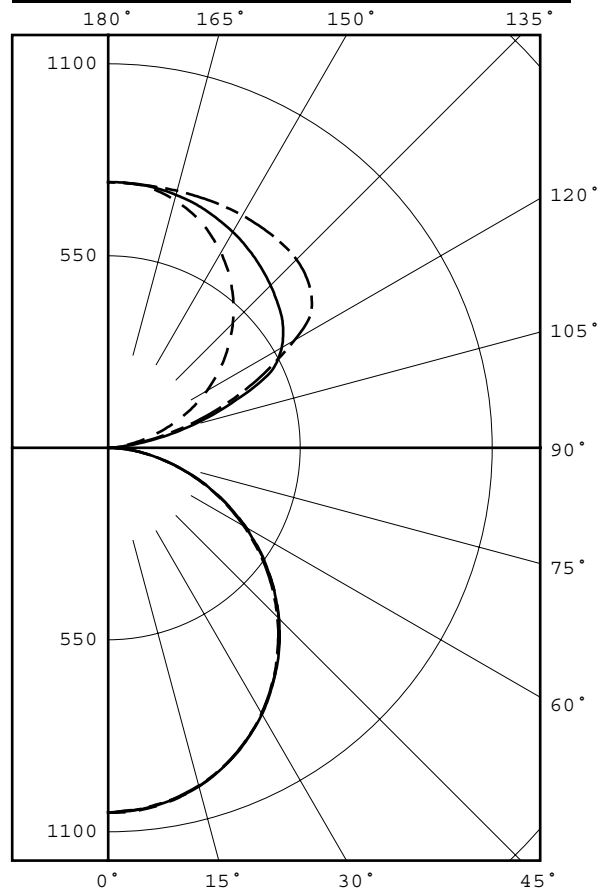
REPORT IS BASED ON 2950 LUMENS PER LAMP.



### CANDELA DISTRIBUTION

### FLUX

	0.0	22.5	45.0	67.5	90.0	
0	1045	1045	1045	1045	1045	99
5	1042	1034	1040	1042	1039	283
15	1004	998	1004	1005	1002	428
25	929	925	930	931	928	514
35	822	820	823	823	820	531
45	691	688	691	687	685	478
55	539	536	537	532	531	364
65	371	369	369	367	364	213
75	203	201	201	202	200	64
85	57	56	56	57	57	49
90	0	0	0	0	0	243
95	19	45	36	37	38	434
105	127	284	248	225	219	518
115	261	396	513	489	482	499
125	389	474	611	691	712	434
135	505	555	658	738	763	335
145	605	631	697	751	769	212
155	682	692	728	757	767	72
165	735	735	750	760	762	
175	760	756	760	760	760	
180	761	761	761	761	761	



LEGEND:  
 0-deg     - - - - -  
 45-deg    - - - - -  
 90-deg    - - - - -

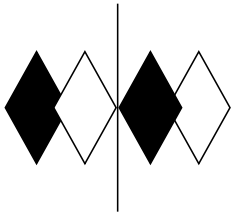
### ZONAL LUMEN SUMMARY

ZONE	LUMENS	%LAMP	%FIXT
0- 30	809	9.1	14.0
0- 40	1323	15.0	22.9
0- 60	2332	26.4	40.4
0- 90	2974	33.6	51.5
90-120	725	8.2	12.6
90-130	1243	14.0	21.5
90-150	2176	24.6	37.7
90-180	2795	31.6	48.5
0-180	5769	65.2	100.0

TOTAL LUMINAIRE EFFICIENCY = 65.2 %

CIE TYPE - GENERAL DIFFUSE  
 PLANE : 0-DEG 90-DEG  
 SPACING CRITERIA : 1.25 1.25  
 SHIELDING ANGLES : 90 90

Checked       MKLOPF        
 Approved       R BEATTIE        
 Lighting Engineer



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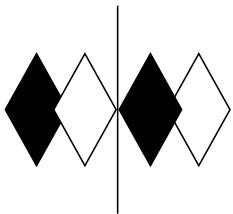
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PREPARED FOR: PRECISION ARCHITECTURAL LIGHTING

PLANE : 0-DEG 90-DEG  
LUMINOUS LENGTH : 48.000 4.875

LUMINANCE DATA IN CANDELA/SQ M

ANGLE IN DEG	AVERAGE 0-DEG	AVERAGE 45-DEG	AVERAGE 90-DEG
45	6473.	6473.	6417.
55	6225.	6202.	6132.
65	5815.	5784.	5705.
75	5195.	5144.	5119.
85	4332.	4256.	4332.



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CANDELA DISTRIBUTION  
 LATERAL ANGLE

	0.0	22.5	45.0	67.5	90.0
0.0	1045	1045	1045	1045	1045
5.0	1042	1034	1040	1042	1039
10.0	1028	1020	1026	1028	1025
15.0	1004	998	1004	1005	1002
20.0	971	965	971	972	970
25.0	929	925	930	931	928
30.0	879	875	881	880	879
35.0	822	820	823	823	820
40.0	758	757	761	758	755
45.0	691	688	691	687	685
50.0	617	615	616	611	610
55.0	539	536	537	532	531
60.0	456	454	454	450	449
65.0	371	369	369	367	364
70.0	287	284	284	284	281
75.0	203	201	201	202	200
80.0	124	124	124	125	125
85.0	57	56	56	57	57
90.0	0	0	0	0	0
95.0	19	45	36	37	38
100.0	66	154	127	108	102
105.0	127	284	248	225	219
110.0	193	352	378	355	348
115.0	261	396	513	489	482
120.0	326	434	574	627	617
125.0	389	474	611	691	712
130.0	448	515	636	721	746
135.0	505	555	658	738	763
140.0	557	594	678	746	768
145.0	605	631	697	751	769
150.0	646	664	714	755	769
155.0	682	692	728	757	767
160.0	712	716	741	758	764
165.0	735	735	750	760	762
170.0	752	748	757	760	760
175.0	760	756	760	760	760
180.0	761	761	761	761	761



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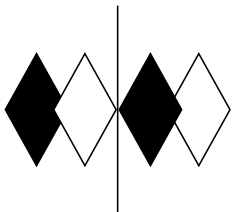
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5-DEGREE  
ZONAL LUMEN SUMMARY

0- 5	25
5- 10	74
10- 15	120
15- 20	163
20- 25	199
25- 30	229
30- 35	250
35- 40	264
40- 45	268
45- 50	263
50- 55	250
55- 60	228
60- 65	199
65- 70	165
70- 75	127
75- 80	87
80- 85	49
85- 90	15
90- 95	9
95-100	40
100-105	94
105-110	149
110-115	198
115-120	235
120-125	257
125-130	261
130-135	255
135-140	244
140-145	227
145-150	206
150-155	182
155-160	154
160-165	123
165-170	89
170-175	54
175-180	18

10-DEGREE  
ZONAL LUMEN SUMMARY

0- 10	99
0- 20	382
0- 30	809
0- 40	1323
0- 50	1854
0- 60	2332
0- 70	2697
0- 80	2910
0- 90	2974
0-100	3022
0-110	3265
0-120	3699
0-130	4217
0-140	4716
0-150	5149
0-160	5485
0-170	5696
0-180	5769



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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	70	70	70	70	65	65	65	65	55	55	55	46	46	46	38	38	38	34	
1	64	61	58	56	59	56	54	52	48	46	45	40	39	38	33	32	31	28	
2	58	53	49	46	53	49	46	43	42	39	37	35	33	31	29	27	26	23	
3	53	47	42	38	49	43	39	35	37	34	31	31	28	26	25	24	22	20	
4	48	41	36	32	44	38	34	30	33	29	26	27	25	23	23	21	19	17	
5	44	37	31	27	41	34	29	26	29	25	23	25	22	19	20	18	17	14	
6	41	33	27	24	38	31	26	22	26	22	20	22	19	17	18	16	14	13	
7	38	30	24	21	35	28	23	19	24	20	17	20	17	15	17	15	13	11	
8	35	27	22	18	32	25	20	17	22	18	15	18	15	13	15	13	11	10	
9	33	24	20	16	30	23	18	15	20	16	14	17	14	12	14	12	10	9	
10	30	22	18	14	28	21	17	14	18	15	12	16	13	11	13	11	9	8	

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.