

itl boulder
THE LIGHT CENTER OF THE INDUSTRY SINCE 1955

NVLAP
NVLAP LAB CODE: 200925-0

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: ITL87972-GONIOPHOTOMETRY

PAGE: 1 OF 6

ISSUE DATE: 07/29/16

PREPARED FOR: BOYD LIGHTING COMPANY

CATALOG NUMBER: C-10614

LUMINAIRE: EXTRUDED BROWN PAINTED METAL HOUSING WITH 2 BROWN PAINTED 0.4375" X 24" CYLINDRICAL METAL MOUNTING POSTS AND 2 DISTINCT OPTICAL COMPARTMENTS. 2 CAST BROWN PAINTED METAL END CAPS, FABRICATED BROWN PAINTED METAL CIRCUIT BOARD MOUNTING STRIP. TOP OPTICAL COMPARTMENT CONSISTS OF: 2 WHITE CIRCUIT BOARDS EACH WITH 15 LEDS, FROSTED TRANSLUCENT WHITE FLAT PLASTIC DIFFUSER. BOTTOM OPTICAL COMPARTMENT CONSISTS OF: 3 WHITE CIRCUIT BOARDS WITH A TOTAL OF 54 LEDS, 4 MACHINED METAL DIFFUSER MOUNTING POSTS COVERED WITH WHITE TAPE, FROSTED 0.75" THICK SOLID GLASS DROP DIFFUSER. DIFFUSERS FROSTED SIDE OUT.

LAMPS: EIGHTY-FOUR WHITE MULTI-CHIP LIGHT EMITTING DIODES (LEDS), 30 LEDS VERTICAL BASE-DOWN POSITION, 54 LEDS VERTICAL BASE-UP POSITION.

INPUT ELECTRICAL: 120.0 VOLTS, 79.1 WATTS, 0.662 AMPS

MOUNTING: SUSPENDED

LED DRIVERS: TWO OSRAM OT48W/PRG2000C/UNV/DIM/L, DRIVERS HAVE MULTIPLE LEADS, ONLY LINE INPUT AND LED OUTPUT LEADS CONNECTED FOR THIS TEST.

CLIENT STATES TOP COMPARTMENT DRIVER PROGRAMMED FOR 1500mA OUTPUT. CLIENT STATES BOTTOM COMPARTMENT DRIVER PROGRAMMED FOR 2000mA OUTPUT.

NOTE: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED AT RATED INPUT VOLTAGE (120VAC, 60Hz) TO THE DRIVERS.

TEST PROCEDURE: IESNA LM-79-08

TEST DISTANCE = 35.0 FEET

CANDELA DISTRIBUTION

	0.0	22.5	45.0	67.5	90.0	FLUX
0	527	527	527	527	527	
5	522	521	518	512	509	48
15	482	463	399	361	352	115
25	410	358	301	289	286	150
35	327	271	249	252	253	166
45	238	207	210	219	221	167
55	160	158	175	185	186	155
65	96	120	143	151	150	133
75	49	91	116	119	118	108
85	17	65	89	92	89	81
90	5	46	71	75	74	
95	16	29	56	63	62	52
105	47	50	33	43	45	48
115	77	163	75	42	41	87
125	166	256	206	142	119	167
135	286	336	313	280	262	231
145	377	404	393	378	371	242
155	449	458	453	446	443	207
165	496	496	493	491	489	139
175	517	516	517	516	515	49
180	519	519	519	519	519	

ZONAL LUMEN SUMMARY

ZONE	LUMENS	%FIXT
0- 30	313	13.3
0- 40	479	20.4
0- 60	801	34.1
0- 90	1123	47.9
90-120	187	8.0
90-130	353	15.1
90-150	826	35.2
90-180	1222	52.1
0-180	2345	100.0

EFFICACY = 29.6 lm/W

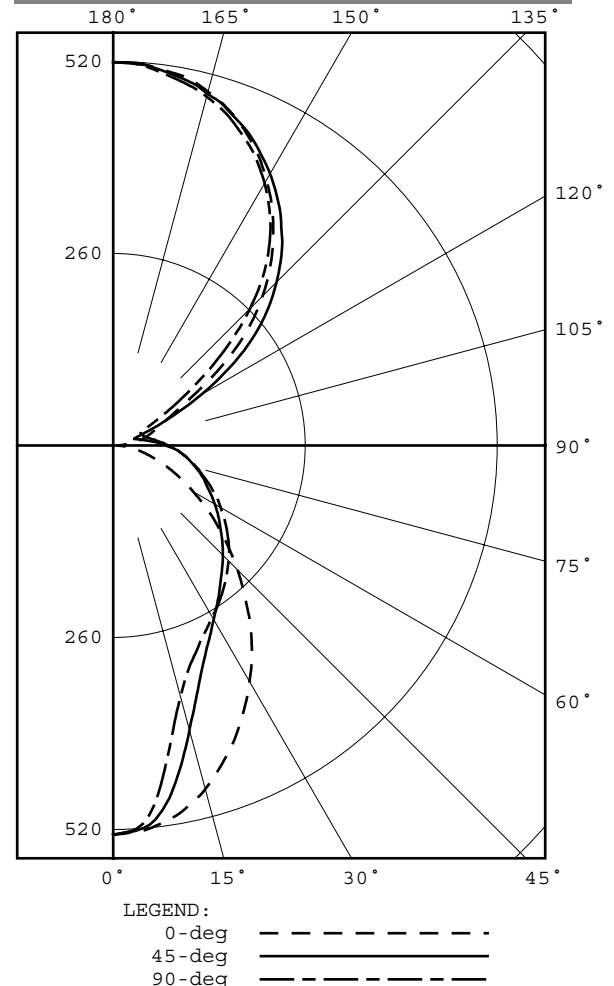
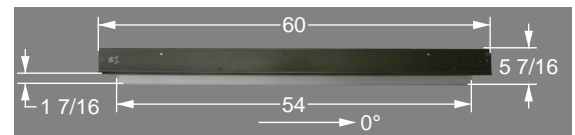
CIE TYPE - GENERAL DIFFUSE

PLANE : 0-DEG 90-DEG

SPACING CRITERIA : 1.07 0.71

BEAM ANGLE (50%) : 84.0 X 63.2 DEGREES

FIELD ANGLE (10%) : 148.1 X 199.3 DEGREES



Checked M KLOPF
Approved R. BERGIN
Lighting Engineer



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: ITL87972-GONIOPHOTOMETRY

PAGE: 2 OF 6

ISSUE DATE: 07/29/16

PREPARED FOR: BOYD LIGHTING COMPANY

CANDELA DISTRIBUTION
LATERAL ANGLE

	0.0	22.5	45.0	67.5	90.0
0.0	527	527	527	527	527
5.0	522	521	518	512	509
10.0	507	501	471	437	426
15.0	482	463	399	361	352
20.0	448	411	341	316	311
25.0	410	358	301	289	286
30.0	369	311	272	268	268
35.0	327	271	249	252	253
40.0	281	236	228	235	237
45.0	238	207	210	219	221
50.0	197	181	192	202	204
55.0	160	158	175	185	186
60.0	125	137	159	168	168
65.0	96	120	143	151	150
70.0	71	104	130	134	133
75.0	49	91	116	119	118
80.0	32	79	103	105	103
85.0	17	65	89	92	89
90.0	5	46	71	75	74
95.0	16	29	56	63	62
100.0	34	21	42	51	52
105.0	47	50	33	43	45
110.0	59	107	35	39	42
115.0	77	163	75	42	41
120.0	109	211	138	81	66
125.0	166	256	206	142	119
130.0	231	297	265	214	190
135.0	286	336	313	280	262
140.0	334	372	356	335	323
145.0	377	404	393	378	371
150.0	415	433	425	415	410
155.0	449	458	453	446	443
160.0	476	480	475	471	469
165.0	496	496	493	491	489
170.0	510	508	507	506	503
175.0	517	516	517	516	515
180.0	519	519	519	519	519



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: ITL87972-GONIOPHOTOMETRY
ISSUE DATE: 07/29/16
PREPARED FOR: BOYD LIGHTING COMPANY

PAGE: 3 OF 6

5-DEGREE
ZONAL LUMEN SUMMARY

0- 5	12
5- 10	35
10- 15	52
15- 20	63
20- 25	72
25- 30	78
30- 35	82
35- 40	84
40- 45	84
45- 50	83
50- 55	80
55- 60	75
60- 65	70
65- 70	64
70- 75	57
75- 80	51
80- 85	44
85- 90	36
90- 95	29
95-100	23
100-105	22
105-110	26
110-115	36
115-120	51
120-125	73
125-130	94
130-135	111
135-140	120
140-145	123
145-150	119
150-155	110
155-160	97
160-165	80
165-170	59
170-175	37
175-180	12

10-DEGREE
ZONAL LUMEN SUMMARY

0- 10	48
0- 20	163
0- 30	313
0- 40	479
0- 50	646
0- 60	801
0- 70	934
0- 80	1042
0- 90	1123
0-100	1175
0-110	1223
0-120	1310
0-130	1477
0-140	1707
0-150	1949
0-160	2157
0-170	2296
0-180	2345



REPORT NUMBER: ITL87972-GONIOPHOTOMETRY

PAGE: 4 OF 6

ISSUE DATE: 07/29/16

PREPARED FOR: BOYD LIGHTING COMPANY

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	107	107	107	107	98	98	98	98	82	82	82	68	68	68	54	54	54	48
1	96	91	87	83	88	84	80	77	70	67	65	58	56	54	46	45	43	38
2	87	79	73	67	80	73	67	62	61	57	53	50	47	44	40	38	36	31
3	79	69	62	56	73	64	57	52	54	49	44	44	40	37	35	33	30	26
4	73	61	53	47	66	57	49	44	48	42	38	39	35	32	32	29	26	22
5	67	55	46	40	61	51	43	38	43	37	33	35	31	28	28	25	23	19
6	61	49	41	35	56	45	38	33	39	33	28	32	28	24	26	23	20	17
7	57	44	36	31	52	41	34	29	35	29	25	29	25	22	24	20	18	15
8	53	40	33	27	48	37	30	26	32	26	22	27	22	19	22	19	16	14
9	49	37	29	24	45	34	28	23	29	24	20	25	20	17	20	17	15	12
10	46	34	27	22	42	32	25	21	27	22	18	23	19	16	19	16	13	11

ALL CANDELA, LUMENS, LUMINANCE, AND VCP VALUES IN THIS REPORT ARE BASED ON ABSOLUTE PHOTOMETRY. THE COEFFICIENT OF UTILIZATION VALUES ARE BASED ON THE TOTAL ABSOLUTE LUMEN OUTPUT OF THIS TEST SAMPLE.



REPORT NUMBER: ITL87972-GONIOPHOTOMETRY

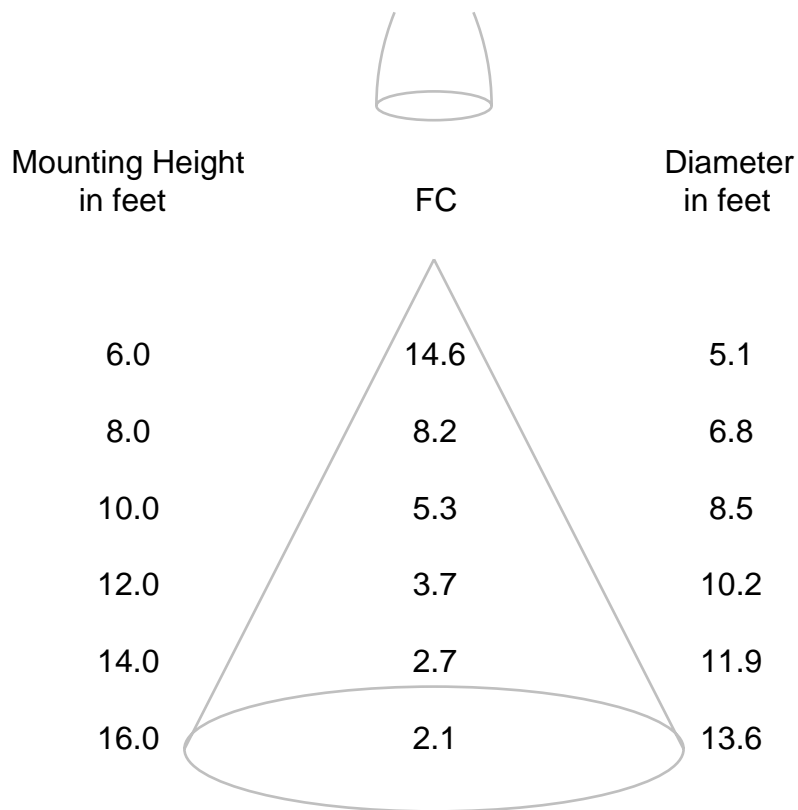
PAGE: 5 OF 6

ISSUE DATE: 07/29/16

PREPARED FOR: BOYD LIGHTING COMPANY

CONE OF LIGHT DIAGRAM

(diameter shown is where fc value is half the fc at nadir)



Note: The candela values used to generate this diagram were obtained by averaging the photometric data into a single plane.



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: ITL87972-GONIOPHOTOMETRY
ISSUE DATE: 07/29/16
PREPARED FOR: BOYD LIGHTING COMPANY

PAGE: 6 OF 6

ADDRESS: 1455 VAPOR TRAIL
COLORADO SPRINGS, CO 80916

THIS ITL REPORT WITH THE USE OF THE NVLAP LOGO SHALL NOT BE USED BY THE CLIENT TO CLAIM PRODUCT CERTIFICATION, APPROVAL, OR ENDORSEMENT BY NVLAP, NIST, OR ANY AGENCY OF THE FEDERAL GOVERNMENT.