

itl boulder
THE LIGHT CENTER OF THE INDUSTRY SINCE 1955

PHONE: (303) 442-1255 • FAX: (970) 535-3114 • E-MAIL: itl@itlboulder.com • WEBSITE: www.itlboulder.com



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

REPORT NUMBER:

ITL91976-GONIOPHOTOMETRY

PAGE

ISSUE DATE: 07/01/19

PREPARED FOR: LUMOS LIGHTING

ADDRESS: 2385 S DELAWARE STREET
DENVER, CO 80223

CATALOG NUMBER: DNL-W

LUMINAIRE: BOTTOM OPTICAL COMPARTMENT CONSISTS OF: EXTRUDED BLACK FINISHED FINNED METAL HEAT SINK, 1 CIRCUIT BOARD WITH ONE LED, MOLDED MULTI-FACETED SPECULAR PLASTIC BOTTOM REFLECTOR. OPEN BOTTOM.

LAMP: ONE WHITE MULTI-CHIP LIGHT EMITTING DIODE (LED), VERTICAL BASE-UP POSITION.

INPUT ELECTRICAL: 120.0 VOLTS, 16.7 WATTS, 0.140 AMPS

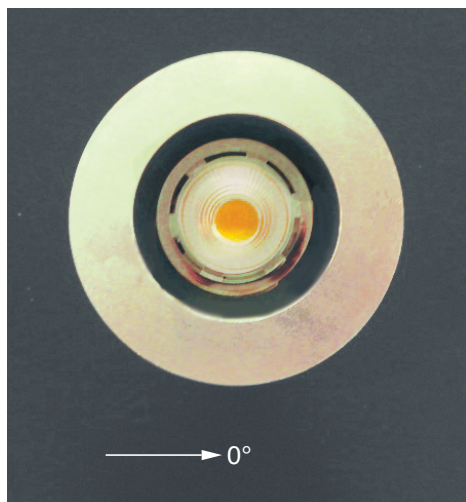
MOUNTING: PENDANT

LED DRIVER: AC ELECTRONICS AC-40CD1.4APMZ, DRIVER HAS MULTIPLE LEADS, ONLY LINE INPUT AND LED OUTPUT LEADS CONNECTED FOR THIS TEST. CLIENT STATES DRIVER PROGRAMMED FOR 400mA OUTPUT.

NOTE: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED AT RATED INPUT VOLTAGE (120VAC, 60Hz) TO THE DRIVER. DUE TO THE SIZE OF THE LUMINAIRE AND GONIOPHOTOMETER SIZE LIMITATIONS, THIS TEST WAS PERFORMED WITH THE LIGHT OPENING 21" BELOW THE PHOTOMETRIC CENTER OF THE GONIOPHOTOMETER. THE DATA WAS MATHEMATICALLY CORRECTED SO THAT THE DISTRIBUTION REPORTED REPRESENTS THE PERFORMANCE WITH THE PHOTOMETRIC CENTER AT THE BOTTOM LIGHT OPENING.

TEST PROCEDURE: IESNA LM-79-08

TEST DISTANCE = 35.0 FEET



THIS 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.

Approved R BERGIN

REPORT NUMBER: ITL91976-GONIOPHOTOMETRY

PAGE: 2 OF 6

ISSUE DATE: 07/01/19

PREPARED FOR: LUMOS LIGHTING

CATALOG NUMBER: DNL-W

CANDELA DISTRIBUTION

	0.0	22.5	45.0	67.5	90.0	
0	1830	1830	1830	1830	1830	
5	1812	1812	1814	1809	1809	170
15	1609	1607	1610	1604	1605	449
25	1239	1243	1245	1241	1237	562
35	652	646	645	640	647	400
45	127	126	126	125	127	115
55	19	19	20	20	21	20
65	6	6	7	7	7	6
75	1	1	1	1	1	1
85	0	0	0	0	0	0
90	0	0	0	0	0	

FLUX

ZONAL LUMEN SUMMARY

ZONE	LUMENS	%FIXT
0- 30	1181	68.5
0- 40	1581	91.7
0- 60	1716	99.5
0- 90	1724	100.0
90-180	0	0.0
0-180	1724	100.0

EFFICACY = 103.2 lm/W

CIE TYPE - DIRECT

PLANE : 0-DEG 90-DEG

SPACING CRITERIA : 0.94 0.94

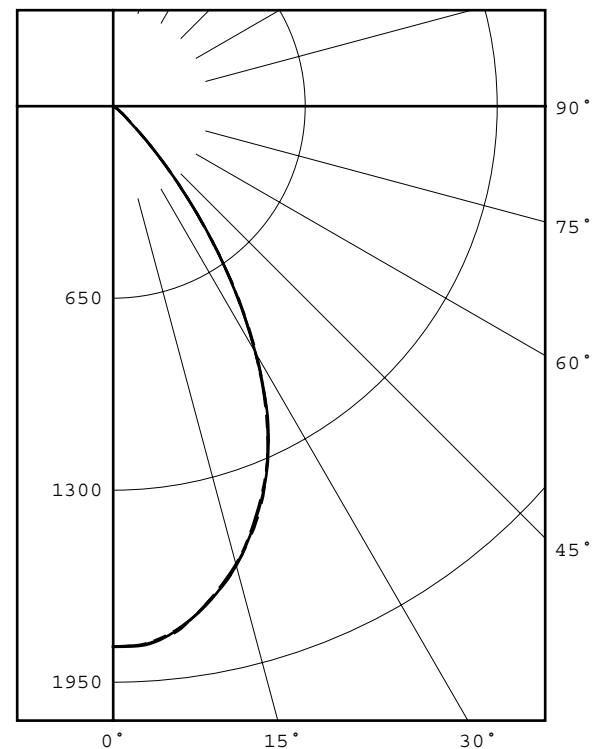
BEAM ANGLE (50%) : 61.7 X 61.5 DEGREES

FIELD ANGLE (10%) : 87.1 X 87.0 DEGREES

LUMINOUS DIAMETER: 2.500

LUMINANCE DATA IN CANDELA/SQ M

ANGLE IN DEG	AVERAGE 0-DEG	AVERAGE 45-DEG	AVERAGE 90-DEG
45	56713.	56266.	56713.
55	10460.	11010.	11561.
65	4483.	5230.	5230.
75	1220.	1220.	1220.
85	0.	0.	0.



LEGEND

0-deg - - - - -
45-deg - - - - -
90-deg - - - - -



PHONE: (303) 442-1255 • FAX: (970) 535-3114 • E-MAIL: itl@itlboulder.com • WEBSITE: www.itlboulder.com

REPORT NUMBER: ITL91976-GONIOPHOTOMETRY

PAGE: 3 OF 6

ISSUE DATE: 07/01/19

PREPARED FOR: LUMOS LIGHTING

CATALOG NUMBER: DNL-W

CANDELA DISTRIBUTION
LATERAL ANGLE

	0.0	22.5	45.0	67.5	90.0
0.0	1830	1830	1830	1830	1830
2.5	1828	1827	1830	1826	1827
5.0	1812	1812	1814	1809	1809
7.5	1781	1778	1777	1774	1776
10.0	1727	1728	1730	1722	1728
12.5	1673	1672	1674	1667	1668
15.0	1609	1607	1610	1604	1605
17.5	1535	1533	1532	1531	1528
20.0	1453	1449	1447	1444	1441
22.5	1352	1352	1353	1348	1349
25.0	1239	1243	1245	1241	1237
27.5	1113	1116	1115	1114	1106
30.0	969	967	962	966	962
32.5	814	809	804	804	808
35.0	652	646	645	640	647
37.5	490	486	489	487	487
40.0	343	343	341	344	342
42.5	222	217	221	220	221
45.0	127	126	126	125	127
47.5	70	71	71	72	73
50.0	44	45	46	47	48
52.5	28	28	29	30	31
55.0	19	19	20	20	21
57.5	14	14	14	14	15
60.0	9	10	10	10	10
62.5	8	8	9	9	9
65.0	6	6	7	7	7
67.5	4	4	5	5	5
70.0	3	3	3	3	3
72.5	2	2	2	2	2
75.0	1	1	1	1	1
77.5	1	1	1	1	1
80.0	0	0	0	0	0
82.5	0	0	0	0	0
85.0	0	0	0	0	0
87.5	0	0	0	0	0
90.0	0	0	0	0	0



PHONE: (303) 442-1255 • FAX: (970) 535-3114 • E-MAIL: itl@itlboulder.com • WEBSITE: www.itlboulder.com



REPORT NUMBER: ITL91976-GONIOPHOTOMETRY

PAGE: 4 OF 6

ISSUE DATE: 07/01/19

PREPARED FOR: LUMOS LIGHTING

CATALOG NUMBER: DNL-W

5-DEGREE
ZONAL LUMEN SUMMARY

0- 5	44
5- 10	127
10- 15	198
15- 20	252
20- 25	282
25- 30	280
30- 35	237
35- 40	163
40- 45	84
45- 50	32
50- 55	13
55- 60	7
60- 65	4
65- 70	2
70- 75	1
75- 80	0
80- 85	0
85- 90	0

10-DEGREE
ZONAL LUMEN SUMMARY

0- 10	170
0- 20	619
0- 30	1181
0- 40	1581
0- 50	1696
0- 60	1716
0- 70	1723
0- 80	1724
0- 90	1724



PHONE: (303) 442-1255 • FAX: (970) 535-3114 • E-MAIL: itl@itlboulder.com • WEBSITE: www.itlboulder.com

REPORT NUMBER: ITL91976-GONIOPHOTOMETRY

PAGE: 5 OF 6

ISSUE DATE: 07/01/19

PREPARED FOR: LUMOS LIGHTING

CATALOG NUMBER: DNL-W

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	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	113	111	108	106	111	108	106	104	104	103	101	101	99	98	97	96	95	93
2	108	103	99	95	106	101	97	94	98	95	92	95	92	90	92	90	88	87
3	102	96	91	87	100	94	90	86	92	88	84	89	86	83	87	84	82	80
4	97	89	84	79	95	88	83	79	86	81	78	84	80	77	82	79	76	75
5	92	83	77	73	90	82	77	73	81	76	72	79	75	71	77	74	71	69
6	87	78	72	68	86	77	71	67	76	71	67	74	70	66	73	69	66	64
7	83	73	67	63	81	73	67	63	71	66	62	70	65	62	69	65	62	60
8	78	69	63	59	77	68	62	58	67	62	58	66	61	58	65	61	58	56
9	75	65	59	55	74	64	59	55	63	58	54	62	58	54	62	57	54	53
10	71	61	55	51	70	61	55	51	60	55	51	59	54	51	58	54	51	50

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: ITL91976-GONIOPHOTOMETRY

PAGE: 6 OF 6

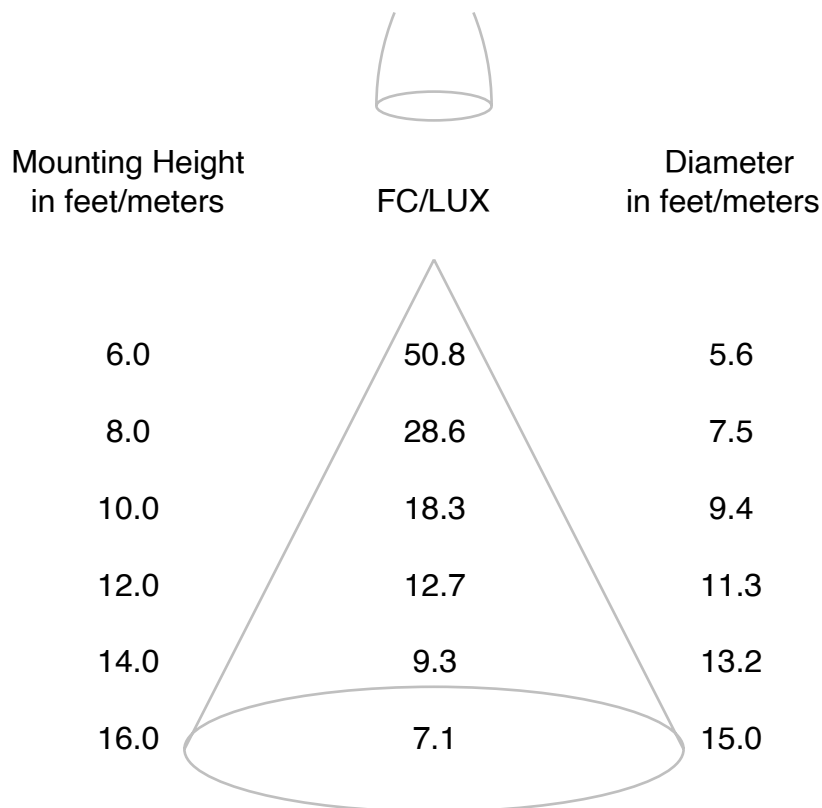
ISSUE DATE: 07/01/19

PREPARED FOR: LUMOS LIGHTING

CATALOG NUMBER: DNL-W

CONE OF LIGHT DIAGRAM

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



If distances are feet, results are footcandles.
If distances are meters, results are lux.

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