

Scaled data based on original data using
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State
Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: FAIL-SAFE

Report Number: G1-1710-337-23

Luminaire Tested: **B95-VE-BLK-LD4-16W-40-OPL-120-EDC1**

Test Date: 11/09/17



Test Information

Test Method: LM-79-08
Report Number: G1-1710-337-23
Test Lab: INNOVATION CENTER(G1)
Test Date: 11/09/17
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: B95-VE-BLK-LD4-16W-40-OPL-120-EDC1
Description: VR 2000 BRICK LED WITH OPAL LENS & VERTICAL EYELID FLAT BLACK
Light Source: (56) NICHIA 4000K LEDS
1FS402256M8404
Ballast/Driver: (1) OSRAM ELECTRONIC DRIVER @ 325mA
OT25UNVDIM1F0325

Summary

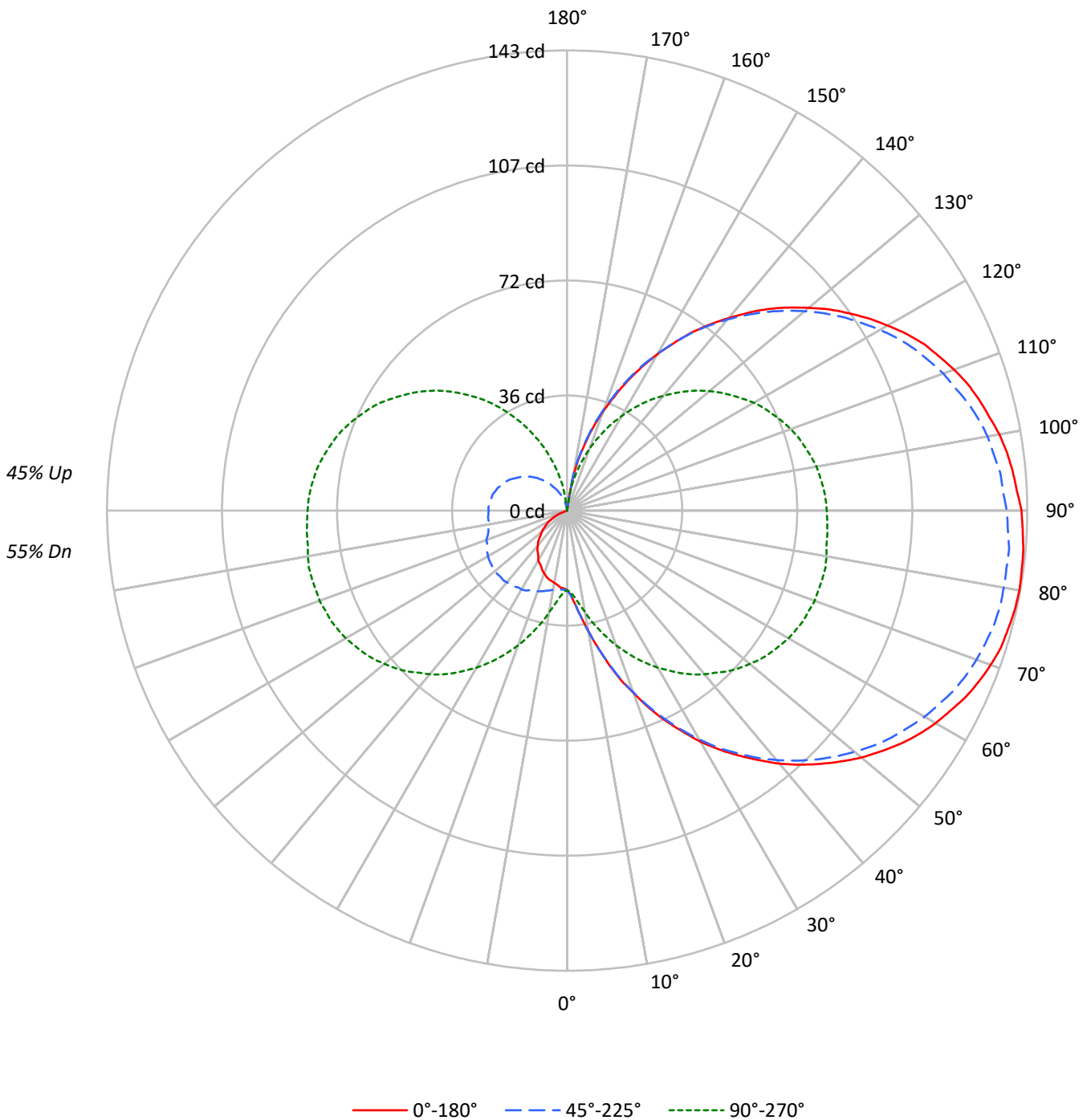
Lumens per Lamp: N/A
Luminaire Lumens: 795.9 lumens
Efficiency: N/A
Efficacy: 51.7 lumens/watt
Spacing Criteria (0/90/45): 2.9 / 3.11 / 3.06
Luminous Opening: Rectangular w/ Sides (W: 0.35' x L: 0.29' x H: 0.67')
CIE Type: General Diffuse

Input Watts (W): 15.4
Input Voltage (V): 120.0
Input Current (A_{in}): 0.129
Voltage Rise (V): NR
Power Factor: 0.9969
Total Harmonic Distortion (THDi): 5.34%
Frequency (hertz): 60
Stabilization Time: 0.5 HR
Operation Time: 7.0 HR
Ambient Temperature (°C): 25.6
Test Distance: 25 FT

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CATALOG NUMBER: B95-VE-BLK-LD4-16W-40-OPL-120-EDC1

Luminous Intensity Polar Plot





TEST NUMBER: G1-1710-337-23

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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				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
RCR																		
0	108	108	108	108	101	101	101	101	86	86	86	73	73	73	61	61	61	55
1	93	87	81	75	86	80	75	70	67	63	59	56	52	50	45	43	40	35
2	83	73	64	57	76	67	59	53	56	50	45	46	41	37	36	33	30	25
3	74	62	53	45	68	57	49	42	48	41	35	39	33	29	31	27	23	19
4	67	54	44	37	61	49	41	34	41	34	29	33	28	23	26	22	18	15
5	61	47	38	30	56	43	35	28	36	29	24	29	24	19	23	19	15	12
6	56	42	32	26	51	38	30	24	32	25	20	26	21	16	21	16	13	10
7	52	37	28	22	47	34	26	20	29	22	17	23	18	14	18	14	11	8
8	48	34	25	19	43	31	23	17	26	19	15	21	16	12	17	12	9	7
9	44	30	22	16	40	28	20	15	24	17	13	19	14	10	15	11	8	6
10	41	28	20	14	38	26	18	13	22	16	11	18	13	9	14	10	7	5

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	2574	2574	2574
5°	2563	2434	2092
10°	2866	2542	1719
15°	3278	2746	1479
20°	3650	2935	1259
25°	4002	3104	1063
30°	4305	3252	928
35°	4544	3386	778
40°	4788	3502	657
45°	4992	3610	547
50°	5198	3704	448
55°	5385	3798	345
60°	5556	3884	256
65°	5715	3965	171
70°	5863	4043	46
75°	5994	4119	0
80°	6133	4204	0
85°	6272	4312	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	2.7	0.3
10°-20°	10.7	1.3
20°-30°	22.6	2.8
30°-40°	37.2	4.7
40°-50°	52.3	6.6
50°-60°	66.1	8.3
60°-70°	76.7	9.6
70°-80°	82.9	10.4
80°-90°	85.2	10.7
90°-100°	83.6	10.5
100°-110°	77.5	9.7
110°-120°	67.0	8.4
120°-130°	53.3	6.7
130°-140°	38.3	4.8
140°-150°	23.9	3.0
150°-160°	11.8	1.5
160°-170°	3.7	0.5
170°-180°	0.1	0.0
0°-30°	36.1	4.5
0°-40°	73.2	9.2
0°-60°	191.7	24.1
0°-90°	436.5	54.8
90°-120°	228.1	28.7
90°-150°	343.7	43.2
90°-180°	359.0	45.1
0°-180°	795.9	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	25	25	25	25	25	
5°	29	29	27	25	24	3
15°	49	49	38	26	22	14
25°	72	71	51	27	19	34
35°	93	92	62	29	16	59
45°	111	109	71	29	12	86
55°	126	123	77	29	8	113
65°	137	132	81	28	4	136
75°	142	137	82	25	0	150
85°	142	138	81	25	0	116
90°	141	137	81	24	0	77
95°	139	135	80	24	0	113
105°	133	129	76	23	0	140
115°	122	119	71	21	0	121
125°	107	105	62	18	0	96
135°	89	87	52	15	0	69
145°	68	67	40	10	0	43
155°	44	45	27	6	0	21
165°	22	22	14	3	0	6
175°	0	0	0	0	0	0
180°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	2°	5°	15°	25°	35°	45°	55°	65°	75°	85°
0°	24.7	24.7	24.7	24.7	24.7	24.7	24.7	24.7	24.7	24.7	24.7
2.5°	26.3	26.6	26.5	26.5	26.3	26.3	26.4	26.3	26.2	25.8	25.7
5°	29.4	29.2	29.4	29.4	29.5	29.6	29.4	29.0	28.6	28.1	27.3
7.5°	33.3	33.3	33.3	33.4	33.6	33.7	33.4	32.8	32.1	31.0	29.9
10°	38.0	38.2	38.2	38.2	38.4	38.3	38.1	37.3	36.0	34.4	32.9
12.5°	43.3	43.5	43.5	43.4	43.7	43.9	43.4	42.3	40.4	38.3	36.2
15°	49.0	48.8	49.0	48.7	49.1	49.8	48.7	47.1	44.9	42.4	39.6
17.5°	55.0	54.9	54.7	54.8	55.3	55.4	54.6	52.5	49.7	46.3	43.1
20°	60.3	60.4	60.4	60.4	60.7	61.1	60.1	57.8	54.5	50.4	46.2
22.5°	66.3	66.1	66.1	66.1	66.5	67.0	65.8	63.0	59.0	54.4	49.7
25°	71.9	71.9	71.6	71.5	72.0	72.9	71.3	68.3	63.8	58.3	52.7
27.5°	77.2	77.4	77.5	77.0	77.6	78.2	76.7	73.3	68.4	62.3	56.1
30°	83.0	82.9	82.8	82.4	82.9	83.7	82.1	78.4	72.6	66.0	59.1
32.5°	88.0	88.0	87.8	87.1	87.8	88.9	87.4	83.0	77.0	69.7	62.1
35°	92.9	93.0	93.1	92.1	92.7	93.7	92.0	87.6	81.0	73.3	65.1
37.5°	97.7	98.0	97.8	96.9	97.5	98.6	96.8	92.2	85.1	76.5	67.6
40°	102.7	102.7	102.4	101.7	102.0	103.1	101.2	96.2	89.0	79.8	70.5
42.5°	107.1	107.2	106.8	105.9	106.2	107.4	105.4	100.4	92.4	82.7	72.6
45°	111.3	111.7	111.3	110.1	110.2	111.5	109.4	104.1	95.9	85.8	74.8
47.5°	115.4	115.5	115.3	113.6	114.1	115.3	113.1	107.7	99.2	88.2	76.7
50°	119.4	119.6	118.9	117.1	117.5	118.8	116.6	110.8	102.0	90.8	78.7
52.5°	122.9	123.1	122.6	120.8	120.7	122.5	120.0	114.0	104.9	93.0	80.7
55°	126.4	126.5	126.2	124.1	123.8	125.4	123.0	117.1	107.4	95.1	82.0
57.5°	129.5	129.7	129.0	126.9	126.5	128.2	125.6	119.6	109.7	97.1	83.6
60°	132.2	132.4	131.8	129.6	129.1	130.7	128.2	122.0	111.8	98.6	84.7
62.5°	134.4	134.8	134.3	131.8	131.2	132.6	130.3	123.9	113.6	100.2	85.7
65°	136.8	136.6	136.4	133.9	133.2	135.1	132.5	125.8	115.0	101.4	86.4
67.5°	138.6	138.5	138.5	135.3	135.0	136.3	134.1	127.4	116.2	102.4	87.3
70°	140.1	140.2	139.7	136.6	135.9	137.8	135.4	128.6	117.5	103.2	87.6
72.5°	141.4	141.3	140.9	137.8	137.4	138.9	136.4	129.7	118.2	103.5	88.0
75°	141.9	142.3	141.5	138.5	137.8	139.6	137.3	130.0	118.5	104.2	88.2
77.5°	142.5	142.6	142.2	138.8	138.3	140.5	137.8	130.3	118.9	104.2	88.1
80°	142.7	143.0	142.2	139.4	138.5	140.6	137.8	130.8	119.3	104.2	87.8
82.5°	142.5	142.7	142.1	138.8	138.2	140.2	137.7	130.3	118.7	103.8	87.8
85°	142.3	142.5	142.1	138.9	138.3	140.3	137.9	130.4	118.8	104.0	87.3
87.5°	141.7	141.9	141.3	138.2	137.5	139.4	137.1	129.9	118.3	103.3	87.0
90°	141.2	141.0	140.6	137.7	137.0	139.0	136.6	129.4	117.9	103.0	86.8
92.5°	139.9	140.0	139.6	136.6	135.9	138.0	135.6	128.9	117.4	102.5	86.5
95°	139.0	139.0	139.0	135.7	135.3	137.4	135.1	127.8	116.6	102.0	86.0
97.5°	137.9	137.7	137.5	134.2	133.8	135.8	133.7	126.8	115.6	101.2	85.2
100°	136.4	136.6	136.1	133.2	132.9	134.7	132.7	125.7	114.5	100.2	84.4
102.5°	134.4	134.6	134.4	131.5	130.7	133.0	131.0	123.7	113.0	98.9	83.4
105°	132.6	132.7	132.6	129.7	129.0	131.3	129.0	122.4	111.4	97.4	82.1
107.5°	130.6	130.3	130.2	127.1	126.9	128.7	126.5	120.2	109.6	95.7	80.8
110°	128.0	128.1	127.8	125.1	124.5	126.5	124.4	117.9	107.3	93.9	79.5



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CANDELA DISTRIBUTION (continued):

	0°	2°	5°	15°	25°	35°	45°	55°	65°	75°	85°
112.5°	125.1	125.3	125.0	122.3	121.8	123.9	121.7	115.3	105.3	92.0	77.7
115°	122.4	122.5	122.1	119.7	119.3	121.1	119.0	112.7	102.6	89.7	76.1
117.5°	118.9	118.9	118.3	116.4	115.8	118.1	115.9	109.4	99.8	87.3	74.0
120°	115.0	115.3	114.8	112.8	112.6	114.2	112.3	106.2	97.0	85.0	71.8
122.5°	111.1	111.3	111.0	109.0	108.7	110.6	108.5	102.8	93.8	82.0	69.5
125°	106.9	107.0	106.7	105.0	104.8	106.8	104.8	99.3	90.2	79.0	67.1
127.5°	102.7	103.0	102.6	100.8	100.9	102.5	100.7	95.3	86.9	76.0	64.4
130°	98.0	98.2	97.9	96.3	96.5	98.3	96.4	91.2	83.1	72.7	61.6
132.5°	93.4	93.7	93.4	91.8	92.3	93.7	91.9	87.1	79.1	69.5	59.0
135°	88.6	88.6	88.4	87.1	87.8	89.2	87.3	82.7	75.3	65.7	56.0
137.5°	83.4	83.5	83.6	82.2	82.6	84.2	82.4	77.8	70.9	62.2	52.9
140°	78.1	78.5	78.2	77.1	77.7	79.0	77.5	73.3	66.8	58.2	49.7
142.5°	72.9	72.9	72.8	72.2	72.6	74.0	72.5	68.5	62.2	54.6	46.4
145°	67.6	67.4	67.2	66.8	67.3	68.4	67.3	63.5	57.9	50.7	43.2
147.5°	61.7	62.0	61.7	61.2	62.0	62.9	61.8	58.3	52.9	46.5	39.8
150°	56.1	56.0	55.7	55.7	56.4	57.5	56.2	53.0	48.3	42.3	36.3
152.5°	50.3	50.4	50.5	50.2	50.9	51.7	50.9	47.8	43.7	38.1	32.8
155°	44.4	44.7	44.6	44.3	45.0	46.0	45.1	42.5	38.7	33.9	29.5
157.5°	38.4	38.7	38.6	38.6	39.3	40.2	39.3	37.0	33.8	29.9	25.7
160°	32.9	33.1	33.1	32.8	33.5	34.1	33.6	31.9	28.8	25.4	22.0
162.5°	27.3	27.2	27.3	27.0	27.8	28.3	28.1	26.2	24.0	21.2	18.2
165°	21.6	21.7	21.7	22.0	22.4	22.9	22.4	21.3	19.5	17.1	14.6
167.5°	16.4	16.5	16.5	16.4	17.0	17.6	17.1	16.1	14.8	13.0	11.2
170°	10.8	10.9	11.0	11.3	11.8	12.3	12.0	11.5	10.3	9.1	7.8
172.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
175°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
177.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
180°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	24.7	24.7	24.7	24.7	24.7	24.7	24.7	24.7	24.7	24.7	24.7
2.5°	25.4	25.4	25.1	25.0	24.8	24.6	24.3	24.3	24.4	24.2	24.2
5°	27.1	26.9	26.3	25.8	25.2	24.6	24.2	23.9	23.9	23.8	24.0
7.5°	29.4	29.0	27.9	27.0	25.8	24.7	23.8	23.6	23.5	23.3	23.3
10°	32.0	31.5	30.1	28.4	26.7	25.0	23.8	23.2	23.1	23.0	22.8
12.5°	35.3	34.2	32.4	30.2	27.6	25.4	23.7	22.7	22.5	22.7	22.4
15°	38.3	37.4	34.7	31.8	28.8	25.8	23.5	22.2	22.1	22.0	22.1
17.5°	41.4	40.2	37.2	33.6	29.9	26.3	23.3	21.8	21.4	21.3	21.5
20°	44.6	42.9	39.5	35.4	31.1	26.7	23.0	21.0	20.7	20.8	20.8
22.5°	47.5	46.0	42.0	37.2	32.2	27.1	22.7	20.3	20.1	20.0	20.1
25°	50.7	48.4	44.2	39.0	33.1	27.3	22.3	19.5	19.2	19.3	19.1
27.5°	53.5	51.5	46.6	40.7	34.3	28.0	22.1	18.9	18.5	18.5	18.5
30°	56.4	54.0	48.8	42.5	35.4	28.3	21.8	18.1	17.7	17.8	17.9
32.5°	58.9	56.5	50.9	43.9	36.3	28.3	21.5	17.4	16.9	16.9	16.7
35°	61.7	59.1	52.8	45.3	37.4	28.8	21.0	16.5	16.2	16.1	15.9
37.5°	64.2	61.5	54.7	46.7	38.0	28.9	20.6	15.5	15.4	15.2	15.2
40°	66.4	63.5	56.4	48.1	39.0	29.1	20.1	14.7	14.4	14.4	14.1
42.5°	68.3	65.4	58.0	49.2	39.4	29.4	19.6	13.7	13.5	13.2	13.4
45°	70.6	67.5	59.6	50.4	40.3	29.2	19.2	13.0	12.6	12.4	12.2
47.5°	72.5	69.0	61.0	51.5	40.8	29.3	18.6	11.8	11.5	11.4	11.1
50°	74.1	70.5	62.4	52.4	41.3	29.4	18.1	10.8	10.2	10.3	10.3
52.5°	75.8	72.2	63.6	53.2	41.8	29.1	17.4	9.9	9.4	9.2	9.3
55°	77.1	73.3	64.4	53.9	41.8	28.9	16.6	8.7	8.3	8.2	8.1
57.5°	78.2	74.4	65.3	54.5	42.1	28.7	15.9	7.4	7.2	7.0	7.3
60°	79.4	75.2	65.9	54.9	42.2	28.4	15.1	6.2	5.9	6.0	6.1
62.5°	80.2	76.0	66.5	55.2	42.3	28.0	14.1	5.0	4.8	5.0	5.1
65°	81.0	76.8	67.1	55.3	42.1	27.5	13.2	3.7	3.5	3.9	4.1
67.5°	81.3	77.2	67.3	55.3	41.9	26.9	12.1	2.4	2.3	2.5	2.6
70°	81.9	77.6	67.6	55.3	41.6	26.7	11.4	1.3	1.0	1.2	1.1
72.5°	81.9	77.8	67.2	55.3	41.5	25.9	10.7	0.4	0.0	0.0	0.0
75°	82.1	77.6	67.2	55.1	41.0	25.3	10.0	0.0	0.0	0.0	0.0
77.5°	82.2	77.7	67.2	54.8	40.8	25.1	9.5	0.0	0.0	0.0	0.0
80°	81.8	77.4	66.9	54.3	40.4	24.6	9.4	0.0	0.0	0.0	0.0
82.5°	81.3	77.1	66.6	54.1	40.0	24.6	9.4	0.0	0.0	0.0	0.0
85°	81.2	77.0	66.3	54.1	40.0	24.7	9.5	0.0	0.0	0.0	0.0
87.5°	80.9	76.5	66.0	53.7	39.9	24.5	9.4	0.0	0.0	0.0	0.0
90°	80.7	76.3	66.1	53.8	39.8	24.4	9.4	0.0	0.0	0.0	0.0
92.5°	80.4	76.2	65.9	53.5	40.0	24.5	9.3	0.0	0.0	0.0	0.0
95°	80.0	75.7	65.6	53.4	39.7	24.3	9.4	0.0	0.0	0.0	0.0
97.5°	79.3	75.1	64.9	52.9	39.4	24.0	9.3	0.0	0.0	0.0	0.0
100°	78.7	74.3	64.3	52.4	39.0	23.8	9.0	0.0	0.0	0.0	0.0
102.5°	77.6	73.4	63.4	51.8	38.5	23.7	8.9	0.0	0.0	0.0	0.0
105°	76.5	72.5	62.6	51.1	37.7	23.1	8.8	0.0	0.0	0.0	0.0
107.5°	75.4	71.3	61.5	50.1	37.1	22.8	8.5	0.0	0.0	0.0	0.0
110°	74.0	70.0	60.7	49.3	36.3	22.2	8.4	0.0	0.0	0.0	0.0



TEST NUMBER: G1-1710-337-23

CATALOG NUMBER: B95-VE-BLK-LD4-16W-40-OPL-120-EDC1

CANDELA DISTRIBUTION (continued):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
112.5°	72.4	68.7	59.4	48.2	35.6	21.7	8.2	0.0	0.0	0.0	0.0
115°	70.6	66.8	58.0	47.0	34.7	21.1	7.8	0.0	0.0	0.0	0.0
117.5°	69.0	65.3	56.5	45.6	33.8	20.5	7.5	0.0	0.0	0.0	0.0
120°	67.0	63.4	54.8	44.5	32.8	19.7	7.4	0.0	0.0	0.0	0.0
122.5°	64.7	61.2	52.9	42.8	31.2	18.8	6.9	0.0	0.0	0.0	0.0
125°	62.4	59.1	50.9	41.2	30.2	18.1	6.7	0.0	0.0	0.0	0.0
127.5°	60.2	57.2	49.2	39.7	29.1	17.4	6.3	0.0	0.0	0.0	0.0
130°	57.7	54.4	47.2	37.8	27.5	16.5	5.7	0.0	0.0	0.0	0.0
132.5°	55.2	52.1	45.0	36.0	26.4	15.6	5.6	0.0	0.0	0.0	0.0
135°	52.4	49.5	42.4	34.2	24.8	14.6	5.2	0.0	0.0	0.0	0.0
137.5°	49.5	46.9	40.3	32.3	23.2	13.7	4.8	0.0	0.0	0.0	0.0
140°	46.5	44.0	37.7	30.3	21.7	12.6	4.3	0.0	0.0	0.0	0.0
142.5°	43.7	41.1	35.4	28.1	20.2	11.6	3.9	0.0	0.0	0.0	0.0
145°	40.5	38.2	32.6	26.0	18.7	10.5	3.4	0.0	0.0	0.0	0.0
147.5°	37.3	35.2	29.9	23.8	17.0	9.7	3.2	0.0	0.0	0.0	0.0
150°	33.9	32.0	27.1	21.5	15.0	8.4	2.5	0.0	0.0	0.0	0.0
152.5°	30.7	28.8	24.6	19.2	13.5	7.5	2.3	0.0	0.0	0.0	0.0
155°	27.3	25.7	21.7	17.1	11.9	6.5	1.9	0.0	0.0	0.0	0.0
157.5°	23.9	22.4	19.0	14.7	10.1	5.6	1.4	0.0	0.0	0.0	0.0
160°	20.5	19.1	16.0	12.6	8.6	4.7	1.3	0.0	0.0	0.0	0.0
162.5°	16.9	15.9	13.4	10.1	6.8	3.5	0.7	0.0	0.0	0.0	0.0
165°	13.9	12.7	10.7	8.1	5.5	2.8	0.7	0.0	0.0	0.0	0.0
167.5°	10.5	9.8	8.0	6.1	4.1	2.0	0.3	0.0	0.0	0.0	0.0
170°	7.5	6.7	5.4	4.0	2.4	0.8	0.0	0.0	0.0	0.0	0.0
172.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
175°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
177.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
180°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)