

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: G1-1710-337-24

Luminaire Tested: **B95-VE-BLK-LD4-20W-40-OPL-120-EDC1**

Test Date: 11/09/17



Test Information

Test Method: LM-79-08
Report Number: G1-1710-337-24
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-LD4-20W-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 @ 400mA
OT25UNVDIM1F0400

Summary

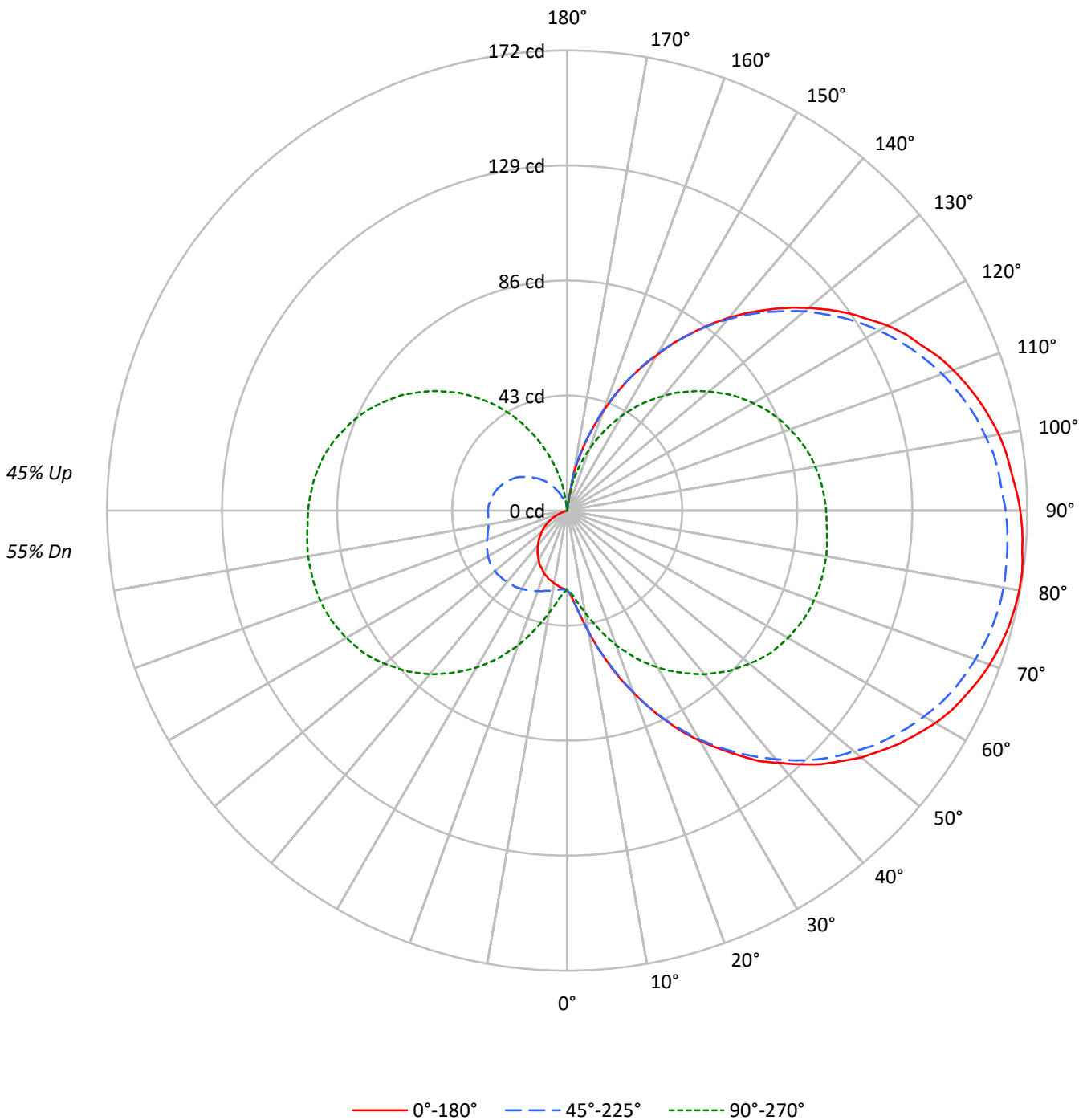
Lumens per Lamp: N/A
Luminaire Lumens: 955.4 lumens
Efficiency: N/A
Efficacy: 50.3 lumens/watt
Spacing Criteria (0/90/45): 2.9 / 3.12 / 3.06
Luminous Opening: Rectangular w/ Sides (W: 0.35' x L: 0.29' x H: 0.67')
CIE Type: General Diffuse

Input Watts (W): 19
Input Voltage (V): 120.0
Input Current (A_{in}): 0.158
Voltage Rise (V): NR
Power Factor: 0.9982
Total Harmonic Distortion (THDi): 5.01%
Frequency (hertz): 60
Stabilization Time: 0.5 HR
Operation Time: 7.0 HR
Ambient Temperature (°C): 25.4
Test Distance: 25 FT

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CATALOG NUMBER: B95-VE-BLK-LD4-20W-40-OPL-120-EDC1

Luminous Intensity Polar Plot





TEST NUMBER: G1-1710-337-24

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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	34	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°	3084	3084	3084
5°	3086	2946	2510
10°	3469	3074	2089
15°	3934	3284	1773
20°	4389	3521	1519
25°	4797	3729	1291
30°	5161	3904	1105
35°	5459	4055	944
40°	5739	4213	792
45°	6014	4341	664
50°	6251	4448	540
55°	6467	4571	426
60°	6678	4662	311
65°	6856	4758	196
70°	7035	4848	67
75°	7207	4942	0
80°	7375	5052	0
85°	7528	5177	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	3.3	0.3
10°-20°	12.8	1.3
20°-30°	27.2	2.8
30°-40°	44.6	4.7
40°-50°	62.8	6.6
50°-60°	79.4	8.3
60°-70°	92.0	9.6
70°-80°	99.6	10.4
80°-90°	102.3	10.7
90°-100°	100.3	10.5
100°-110°	93.0	9.7
110°-120°	80.4	8.4
120°-130°	64.0	6.7
130°-140°	46.0	4.8
140°-150°	28.7	3.0
150°-160°	14.2	1.5
160°-170°	4.5	0.5
170°-180°	0.2	0.0
0°-30°	43.3	4.5
0°-40°	88.0	9.2
0°-60°	230.2	24.1
0°-90°	524.1	54.9
90°-120°	273.6	28.6
90°-150°	412.4	43.2
90°-180°	431.0	45.1
0°-180°	955.4	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	30	30	30	30	30	
5°	35	36	33	30	29	4
15°	59	58	46	31	26	17
25°	86	86	61	33	23	40
35°	112	110	74	34	19	70
45°	134	132	85	35	15	104
55°	152	148	93	35	10	136
65°	164	159	97	33	5	163
75°	171	165	98	31	0	180
85°	171	165	98	30	0	140
90°	169	164	97	30	0	93
95°	167	162	96	29	0	136
105°	159	155	92	28	0	168
115°	146	142	85	25	0	145
125°	129	126	75	22	0	115
135°	106	105	63	17	0	82
145°	81	81	49	13	0	51
155°	54	54	33	8	0	25
165°	26	27	16	3	0	8
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°	29.6	29.6	29.6	29.6	29.6	29.6	29.6	29.6	29.6	29.6	29.6
2.5°	31.7	31.8	31.7	31.7	31.7	31.8	31.6	31.5	31.3	31.0	30.7
5°	35.4	35.3	35.1	35.4	35.6	35.4	35.5	34.9	34.3	33.8	33.3
7.5°	40.1	40.2	40.2	40.2	40.4	40.6	40.0	39.5	38.6	37.4	36.2
10°	46.0	45.9	45.8	45.7	46.1	46.3	45.9	44.7	43.4	41.4	39.7
12.5°	52.2	52.1	52.2	52.4	52.7	52.5	52.4	50.7	48.5	45.9	43.4
15°	58.8	58.6	58.9	58.7	59.3	59.5	58.4	56.8	54.0	50.9	47.2
17.5°	65.8	65.6	65.5	65.5	66.2	66.8	65.3	63.1	59.6	55.9	51.7
20°	72.5	72.2	72.8	72.5	73.0	73.5	72.2	69.7	65.4	60.4	55.6
22.5°	79.3	79.3	79.3	79.3	80.3	80.4	79.2	75.8	71.0	65.2	59.5
25°	86.2	86.2	86.2	86.1	86.4	87.2	85.9	82.2	76.5	70.0	63.5
27.5°	93.1	92.7	92.7	92.4	93.0	94.0	92.3	88.1	82.0	74.7	67.3
30°	99.5	99.2	99.0	98.5	99.5	100.4	98.7	93.8	87.2	79.3	71.2
32.5°	105.5	105.5	105.6	104.8	105.6	106.7	104.7	99.9	92.6	83.7	74.5
35°	111.6	111.9	111.4	110.8	111.5	112.5	110.4	105.5	97.5	87.8	78.1
37.5°	118.0	117.6	117.9	116.7	117.1	118.5	116.0	110.8	102.1	91.8	81.2
40°	123.1	123.5	122.9	121.8	122.5	123.5	121.3	115.8	106.8	95.7	84.3
42.5°	128.6	128.7	128.7	127.0	127.7	129.1	126.7	120.5	110.9	99.3	87.2
45°	134.1	133.8	133.7	131.9	132.2	134.1	131.6	124.8	115.0	102.8	89.8
47.5°	138.6	138.5	138.3	136.5	136.6	138.1	136.1	129.0	119.1	105.9	92.2
50°	143.6	143.5	143.3	140.9	141.0	142.8	140.0	133.4	122.4	108.9	94.7
52.5°	147.6	147.7	147.6	145.1	145.1	146.8	144.3	137.0	125.8	111.7	96.8
55°	151.8	151.6	151.6	148.8	148.6	150.6	147.7	140.4	128.9	114.4	98.7
57.5°	155.3	155.5	154.8	152.3	151.7	153.7	151.0	143.3	131.8	116.3	100.1
60°	158.9	158.7	158.3	155.6	155.1	156.9	154.0	146.5	134.3	118.6	101.8
62.5°	161.9	161.8	161.5	158.4	157.9	159.9	156.8	149.2	136.6	120.4	103.1
65°	164.1	164.2	164.0	160.5	159.8	161.9	159.2	151.1	138.2	121.8	104.0
67.5°	166.3	165.9	165.8	162.6	161.9	163.9	160.9	152.8	139.6	122.6	104.7
70°	168.1	167.8	167.4	164.1	163.1	165.3	162.4	154.2	141.0	123.6	105.3
72.5°	169.5	169.4	169.1	165.5	164.8	167.0	163.8	155.7	142.2	124.5	105.6
75°	170.6	170.2	169.9	166.4	165.5	167.5	164.8	156.0	142.4	124.8	105.9
77.5°	171.2	171.0	170.9	167.1	166.4	168.4	165.5	156.9	142.8	125.5	105.8
80°	171.6	171.4	171.1	167.4	166.5	168.7	165.6	156.9	143.2	125.3	105.5
81°	171.6	171.7	171.0	167.2	166.4	168.7	165.6	157.1	143.2	124.9	105.5
82.5°	171.6	171.2	171.0	167.0	166.3	168.7	165.4	157.0	142.8	124.8	105.3
85°	170.8	170.6	170.4	166.4	165.7	168.0	165.2	156.4	142.4	124.4	105.0
87.5°	170.3	170.0	169.5	165.9	165.2	167.5	164.7	156.0	142.1	123.7	104.3
90°	169.4	169.5	168.6	165.0	164.1	166.7	163.9	155.2	141.2	123.5	103.9
92.5°	168.1	168.0	167.5	163.9	163.1	165.7	162.7	154.5	140.8	123.0	103.7
95°	166.6	166.7	166.3	162.5	162.0	164.4	161.9	153.5	140.0	121.9	103.1
97.5°	165.5	165.4	165.1	161.2	160.8	163.3	160.8	152.3	139.0	121.4	102.4
100°	163.9	163.8	163.5	159.7	159.0	161.7	158.9	150.8	137.5	120.2	101.3
102.5°	161.7	161.5	161.4	157.6	157.0	159.7	157.0	148.8	135.8	118.6	100.2
105°	159.3	159.4	158.8	155.4	154.8	157.2	154.7	146.8	133.6	116.9	98.6
107.5°	156.6	156.6	156.0	153.0	152.4	154.7	152.0	144.0	131.5	114.8	97.1



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CANDELA DISTRIBUTION (continued):

	0°	2°	5°	15°	25°	35°	45°	55°	65°	75°	85°
110°	153.6	153.7	153.1	149.8	149.2	151.7	149.3	141.2	128.9	112.6	95.2
112.5°	150.3	150.0	149.7	146.4	146.1	148.3	145.9	138.1	126.2	110.2	93.2
115°	146.1	146.7	146.0	142.9	142.7	145.0	142.4	135.2	123.0	107.7	91.2
117.5°	142.7	142.4	142.5	139.4	139.4	141.5	138.6	131.5	119.9	104.7	88.9
120°	138.3	138.2	137.7	135.3	135.2	137.3	134.6	127.8	116.5	101.8	86.1
122.5°	133.2	133.0	133.2	130.4	130.6	132.7	130.3	123.4	112.5	98.4	83.3
125°	128.6	128.7	128.0	125.8	126.0	128.1	125.7	119.1	108.6	95.1	80.6
127.5°	123.3	123.2	123.2	120.9	121.4	123.1	120.7	114.4	104.2	91.2	77.5
130°	117.8	117.7	117.5	115.8	116.1	118.1	115.9	109.5	99.7	87.3	74.0
132.5°	112.2	112.4	112.0	110.0	110.6	112.5	110.3	104.6	95.1	83.2	70.8
135°	106.2	106.1	105.8	104.5	105.3	106.7	104.9	98.9	90.2	78.8	67.2
137.5°	100.4	99.9	100.3	98.6	99.4	100.9	99.2	93.7	85.3	74.5	63.6
140°	94.1	94.0	93.8	92.7	93.6	94.9	93.3	88.1	79.9	70.2	59.9
142.5°	87.6	87.5	87.5	86.6	87.5	88.8	87.1	82.3	74.9	65.3	56.0
145°	80.9	81.3	80.8	80.2	81.0	82.4	80.7	76.4	69.3	60.6	52.0
147.5°	74.3	74.4	74.3	73.3	74.4	75.7	74.2	70.0	63.7	55.9	48.0
150°	67.1	67.2	67.4	67.1	67.9	68.9	67.8	63.7	58.1	51.0	43.7
152.5°	60.5	60.3	60.2	60.1	61.0	61.8	60.9	57.5	52.1	45.8	39.5
155°	53.9	53.3	53.5	53.3	54.2	55.3	54.0	51.2	46.5	40.8	35.3
157.5°	46.7	46.2	46.6	46.6	47.1	48.2	47.1	44.5	40.4	35.7	30.9
160°	39.4	39.6	39.6	39.4	40.3	40.9	40.2	37.9	34.7	30.4	26.4
162.5°	32.9	32.8	32.8	32.6	33.4	34.2	33.3	31.6	28.8	25.4	21.9
165°	26.2	26.1	26.4	26.1	27.1	27.2	26.7	25.2	23.2	20.3	17.7
167.5°	19.7	19.6	19.9	19.6	20.6	20.6	20.4	19.4	17.6	15.8	13.5
170°	13.4	13.4	13.1	13.9	14.6	14.7	14.4	13.7	12.7	11.0	9.5
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°	29.6	29.6	29.6	29.6	29.6	29.6	29.6	29.6	29.6	29.6	29.6
2.5°	30.7	30.5	30.3	29.8	29.7	29.5	29.2	29.2	29.2	29.2	29.2
5°	32.8	32.5	31.8	31.0	30.4	29.6	29.2	28.9	28.9	28.8	28.8
7.5°	35.7	35.0	33.8	32.3	31.2	29.9	28.9	28.4	28.4	28.3	28.2
10°	38.7	37.9	36.1	34.2	32.0	30.2	28.6	27.9	27.7	27.7	27.7
12.5°	42.2	41.3	38.8	36.2	33.2	30.7	28.3	27.4	27.1	27.0	27.0
15°	45.8	44.8	41.5	38.1	34.5	31.0	28.1	26.6	26.4	26.4	26.5
17.5°	49.7	48.3	44.5	40.4	35.7	31.6	28.0	25.9	25.8	25.8	25.7
20°	53.5	51.8	47.6	42.6	37.3	32.0	27.6	25.3	25.0	24.9	25.1
22.5°	57.0	55.0	50.5	44.7	38.6	32.5	27.3	24.4	24.3	24.1	24.0
25°	60.9	58.5	53.1	46.8	39.9	32.9	26.9	23.6	23.4	23.3	23.2
27.5°	64.3	61.8	56.0	48.8	41.1	33.4	26.6	22.6	22.4	22.4	22.5
30°	67.7	65.0	58.6	50.8	42.4	33.8	26.1	22.0	21.4	21.4	21.3
32.5°	70.9	68.0	61.0	52.7	43.7	34.2	25.6	20.7	20.4	20.2	20.2
35°	73.9	70.9	63.5	54.6	44.6	34.5	25.2	19.8	19.3	19.2	19.3
37.5°	76.9	73.5	65.6	56.2	45.7	34.7	24.6	18.8	18.3	18.1	18.1
40°	79.9	76.1	67.9	57.8	46.7	34.8	24.1	17.7	17.4	17.0	17.0
42.5°	82.3	78.6	69.7	59.1	47.6	35.1	23.5	16.4	16.1	15.8	15.9
45°	84.9	80.7	71.7	60.6	48.4	35.1	22.8	15.4	15.1	14.8	14.8
47.5°	86.9	83.0	73.3	61.7	49.0	35.3	22.3	14.3	13.6	13.7	13.4
50°	89.0	84.8	74.7	62.9	49.5	35.2	21.6	12.9	12.6	12.5	12.4
52.5°	91.0	86.4	76.3	63.9	50.0	35.2	20.7	11.7	11.3	11.2	11.3
55°	92.8	87.9	77.4	64.6	50.5	34.9	19.9	10.5	10.1	10.0	10.0
57.5°	94.0	89.3	78.3	65.3	50.4	34.6	18.9	8.9	8.6	8.5	8.6
60°	95.3	90.4	79.2	65.9	50.6	34.2	18.0	7.7	7.2	7.3	7.4
62.5°	96.2	91.4	80.1	66.3	50.5	33.6	16.9	6.0	5.7	6.0	6.2
65°	97.2	92.1	80.6	66.4	50.6	33.0	15.7	4.4	4.1	4.7	4.7
67.5°	97.8	92.6	80.7	66.5	50.1	32.3	14.6	2.9	2.7	3.1	3.3
70°	98.2	92.9	80.9	66.5	49.9	31.8	13.8	1.6	1.3	1.5	1.6
72.5°	98.5	93.2	81.0	66.2	49.6	31.2	12.9	0.4	0.1	0.0	0.0
75°	98.5	93.3	80.8	66.1	49.1	30.7	12.0	0.0	0.0	0.0	0.0
77.5°	98.4	93.2	80.7	65.9	48.8	30.2	11.6	0.0	0.0	0.0	0.0
80°	98.3	92.9	80.2	65.4	48.3	29.8	11.4	0.0	0.0	0.0	0.0
81°	98.2	92.8	80.2	65.1	48.0	29.8	11.3	0.0	0.0	0.0	0.0
82.5°	98.0	92.6	80.0	64.9	47.9	29.6	11.3	0.0	0.0	0.0	0.0
85°	97.5	92.0	79.6	64.7	47.9	29.6	11.4	0.0	0.0	0.0	0.0
87.5°	97.1	91.6	79.5	64.5	47.8	29.6	11.2	0.0	0.0	0.0	0.0
90°	96.8	91.5	79.2	64.5	47.8	29.6	11.3	0.0	0.0	0.0	0.0
92.5°	96.4	91.4	79.2	64.3	47.6	29.5	11.1	0.0	0.0	0.0	0.0
95°	95.8	90.6	78.7	64.0	47.4	29.3	11.2	0.0	0.0	0.0	0.0
97.5°	95.2	90.2	78.0	63.4	47.1	28.9	11.0	0.0	0.0	0.0	0.0
100°	94.2	89.3	77.4	63.0	46.6	28.7	10.9	0.0	0.0	0.0	0.0
102.5°	93.3	88.0	76.3	62.2	45.9	28.2	10.8	0.0	0.0	0.0	0.0
105°	91.9	87.1	75.3	61.1	45.2	27.8	10.7	0.0	0.0	0.0	0.0
107.5°	90.5	85.5	74.1	60.2	44.6	27.3	10.2	0.0	0.0	0.0	0.0



TEST NUMBER: G1-1710-337-24

CATALOG NUMBER: B95-VE-BLK-LD4-20W-40-OPL-120-EDC1

CANDELA DISTRIBUTION (continued):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
110°	88.6	83.8	72.6	58.9	43.4	26.6	10.1	0.0	0.0	0.0	0.0
112.5°	87.0	82.2	71.0	57.7	42.5	26.0	9.7	0.0	0.0	0.0	0.0
115°	84.9	80.3	69.6	56.5	41.5	25.3	9.4	0.0	0.0	0.0	0.0
117.5°	82.8	78.3	67.6	54.9	40.2	24.4	9.2	0.0	0.0	0.0	0.0
120°	80.3	76.1	65.8	53.2	39.0	23.7	8.9	0.0	0.0	0.0	0.0
122.5°	77.8	73.4	63.6	51.5	37.7	22.9	8.3	0.0	0.0	0.0	0.0
125°	75.3	71.1	61.4	49.6	36.4	21.9	8.0	0.0	0.0	0.0	0.0
127.5°	72.1	68.3	59.0	47.6	34.7	20.7	7.5	0.0	0.0	0.0	0.0
130°	69.2	65.4	56.6	45.5	33.1	19.7	7.2	0.0	0.0	0.0	0.0
132.5°	66.1	62.4	53.8	43.5	31.5	18.5	6.7	0.0	0.0	0.0	0.0
135°	62.7	59.2	50.9	41.1	29.6	17.3	6.0	0.0	0.0	0.0	0.0
137.5°	59.6	56.2	48.2	38.8	27.9	16.3	5.8	0.0	0.0	0.0	0.0
140°	55.9	52.8	45.4	36.2	26.2	15.2	5.3	0.0	0.0	0.0	0.0
142.5°	52.3	49.4	42.4	33.8	24.1	14.0	4.7	0.0	0.0	0.0	0.0
145°	48.8	46.0	39.3	31.2	22.2	12.9	4.2	0.0	0.0	0.0	0.0
147.5°	44.8	42.3	35.9	28.4	20.1	11.4	3.7	0.0	0.0	0.0	0.0
150°	40.9	38.4	32.8	25.8	18.3	10.3	3.2	0.0	0.0	0.0	0.0
152.5°	37.0	34.7	29.4	23.0	16.1	9.0	2.8	0.0	0.0	0.0	0.0
155°	32.7	30.8	26.1	20.3	14.1	7.8	2.2	0.0	0.0	0.0	0.0
157.5°	28.7	26.9	22.7	17.6	12.0	6.6	1.8	0.0	0.0	0.0	0.0
160°	24.5	23.1	19.2	14.8	9.9	5.4	1.4	0.0	0.0	0.0	0.0
162.5°	20.4	19.1	15.8	12.2	8.1	4.3	1.0	0.0	0.0	0.0	0.0
165°	16.3	15.3	12.7	9.6	6.4	3.4	0.8	0.0	0.0	0.0	0.0
167.5°	12.6	11.6	9.6	7.3	4.6	2.3	0.4	0.0	0.0	0.0	0.0
170°	8.9	8.2	6.9	4.9	3.2	1.2	0.2	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)