

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: G1-1710-337-19

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

Test Date: 11/21/17



**Test Information**

Test Method: LM-79-08  
Report Number: G1-1710-337-19  
Test Lab: INNOVATION CENTER(G1)  
Test Date: 11/21/17  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: FAIL-SAFE  
Catalog Number: B95-HE-BLK-LD4-16W-40-OPL-120-EDC1  
Description: VR 2000 BRICK LED WITH OPAL LENS & HORIZONTAL EYELID FLAT BLACK.  
Light Source: (56) NICHIA 4000K LEDS  
1FS402256M8404  
Ballast/Driver: (1) OSRAM ELECTRONIC DRIVER @ 325mA  
OT25UNVDIM1F0325

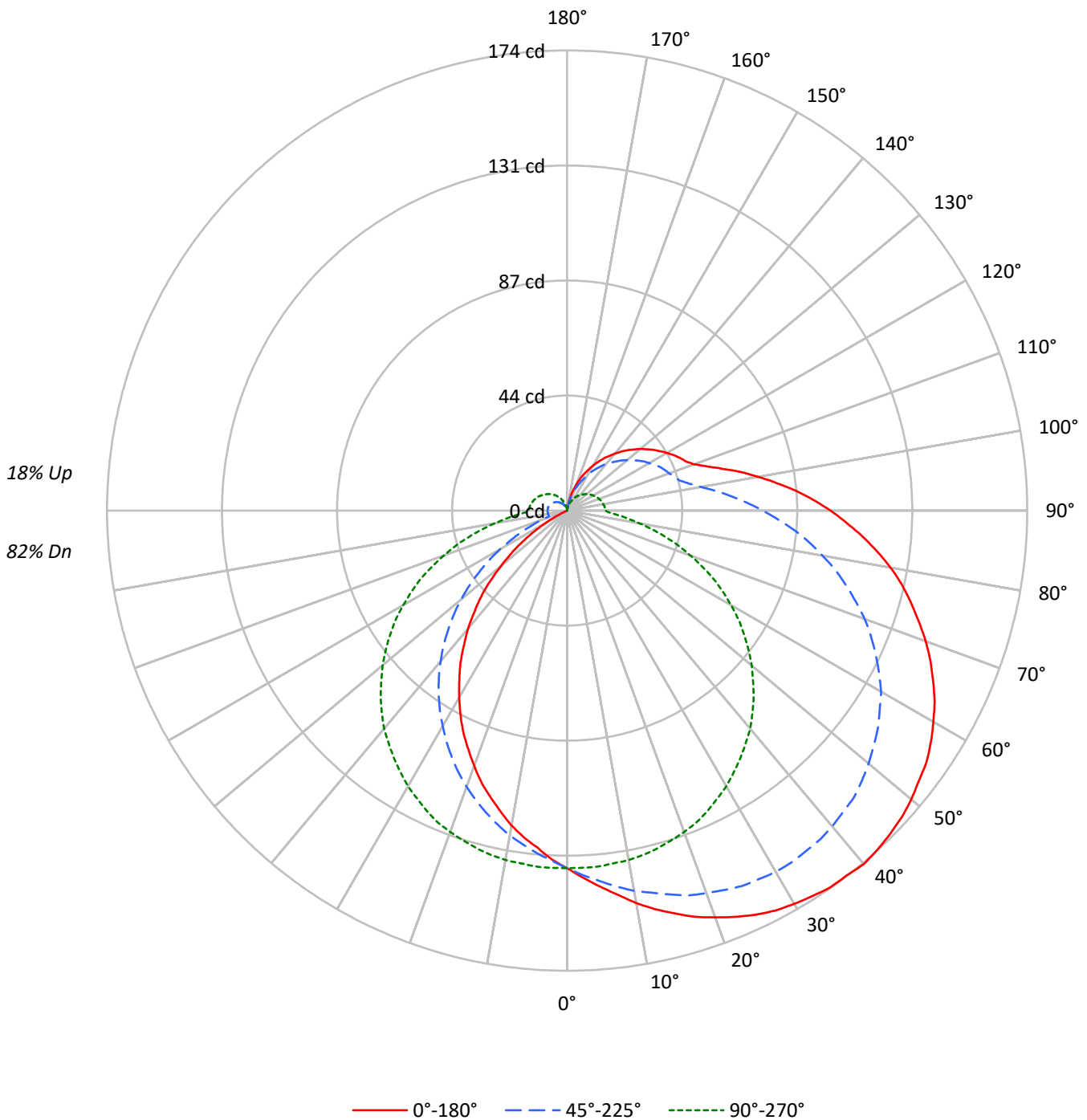
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 643.7 lumens  
Efficiency: N/A  
Efficacy: 41.8 lumens/watt  
Spacing Criteria (0/90/45): 1.39 / 1.32 / 1.52  
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 0.29' x H: 0.35')  
CIE Type: Semi-Direct  
  
Input Watts (W): 15.4  
Input Voltage (V): 120.0  
Input Current (Ain): 0.128  
Voltage Rise (V): NR  
Power Factor: 0.9969  
Total Harmonic Distortion (THDi): 5.35%  
Frequency (hertz): 60  
Stabilization Time: 0.5 HR  
Operation Time: 7.0 HR  
Ambient Temperature (°C): 25.1  
Test Distance: 25 FT

TEST NUMBER: G1-1710-337-19

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

### Luminous Intensity Polar Plot





TEST NUMBER: G1-1710-337-19

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

**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	115	115	115	115	110	110	110	110	101	101	101	93	93	93	85	85	85	82
1	102	96	90	86	97	92	87	83	84	80	77	77	74	71	70	68	66	62
2	91	82	74	68	87	78	71	65	72	66	61	66	61	57	60	56	53	50
3	83	71	62	55	79	68	60	53	62	56	50	57	52	47	52	48	44	41
4	75	62	53	46	71	60	51	45	55	48	42	50	44	39	46	41	37	34
5	69	55	46	39	65	53	44	38	49	41	36	45	39	34	41	36	32	29
6	63	50	40	34	60	48	39	33	44	36	31	41	34	29	37	32	28	25
7	59	45	36	29	56	43	35	29	40	32	27	37	30	26	34	28	24	22
8	54	41	32	26	52	39	31	25	36	29	24	34	27	23	31	26	22	19
9	51	37	29	23	48	36	28	23	33	26	21	31	25	20	29	23	19	17
10	48	34	26	21	45	33	25	20	31	24	19	29	23	18	27	21	17	16

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°
0°	7484	7484	7484
5°	7168	7174	6430
10°	6977	6897	5597
15°	6819	6632	4847
20°	6688	6383	4200
25°	6575	6139	3619
30°	6452	5890	3066
35°	6348	5625	2568
40°	6246	5383	2087
45°	6109	5097	1626
50°	5979	4804	1151
55°	5856	4483	731
60°	5705	4128	339
65°	5550	3741	29
70°	5386	3264	0
75°	5204	2761	0
80°	5020	2208	0
85°	4785	1715	0



TEST NUMBER: G1-1710-337-19

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

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	12.9	2.0
10°-20°	37.9	5.9
20°-30°	59.5	9.2
30°-40°	75.0	11.7
40°-50°	82.4	12.8
50°-60°	80.6	12.5
60°-70°	71.2	11.1
70°-80°	59.3	9.2
80°-90°	46.9	7.3
90°-100°	35.1	5.5
100°-110°	25.8	4.0
110°-120°	20.3	3.1
120°-130°	15.6	2.4
130°-140°	10.8	1.7
140°-150°	6.5	1.0
150°-160°	3.0	0.5
160°-170°	0.8	0.1
170°-180°	0.1	0.0
0°-30°	110.3	17.1
0°-40°	185.3	28.8
0°-60°	348.3	54.1
0°-90°	525.7	81.7
90°-120°	81.2	12.6
90°-150°	114.2	17.7
90°-180°	118.0	18.3
0°-180°	643.7	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	135	135	135	135	135	
5°	143	141	135	130	128	14
15°	158	150	132	118	112	45
25°	169	157	125	103	93	78
35°	174	157	114	85	70	109
45°	173	153	100	64	46	134
55°	166	144	82	41	21	148
65°	153	129	61	19	1	151
75°	135	109	38	7	0	142
85°	112	86	19	7	0	94
90°	100	74	14	7	0	55
95°	87	62	14	7	0	68
105°	61	44	13	7	0	65
115°	47	39	12	6	0	47
125°	40	33	11	6	0	36
135°	32	26	9	4	0	25
145°	24	19	7	3	0	15
155°	15	12	4	2	0	7
165°	7	5	2	1	0	2
175°	1	0	0	0	0	0
180°	0	0	0	0	0	0



TEST NUMBER: G1-1710-337-19

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

**CANDELA DISTRIBUTION (FULL):**

	0°	1°	5°	15°	25°	35°	45°	55°	65°	75°	85°
0°	135.2	135.2	135.2	135.2	135.2	135.2	135.2	135.2	135.2	135.2	135.2
2.5°	139.0	139.0	138.8	138.6	138.6	138.5	138.0	137.5	136.8	136.2	135.6
5°	142.7	142.8	142.9	142.6	142.0	141.4	140.6	139.6	138.5	136.8	135.5
7.5°	146.5	146.4	146.5	146.2	145.4	144.5	143.4	141.3	139.6	137.4	135.7
10°	150.7	151.0	150.4	150.3	149.2	147.7	146.0	143.7	141.1	138.1	135.3
12.5°	154.4	154.6	154.1	153.6	152.7	150.4	148.0	145.1	141.7	138.4	134.8
15°	157.7	157.8	157.8	157.1	155.6	153.4	150.3	146.8	142.5	138.2	134.0
17.5°	161.1	161.0	161.1	160.1	158.7	156.0	152.6	147.8	143.1	138.2	133.1
20°	163.7	163.9	163.6	162.7	161.0	158.2	153.9	148.9	143.5	137.4	131.8
22.5°	166.3	166.6	166.6	165.3	163.4	160.0	155.3	149.8	143.6	137.1	130.4
25°	168.6	168.8	168.9	167.8	165.5	161.7	156.6	150.5	143.5	135.9	128.7
27.5°	170.5	170.5	170.4	169.4	166.8	162.8	157.1	150.5	142.8	134.3	126.7
30°	171.7	171.9	171.9	170.9	168.0	163.8	157.8	150.3	141.8	133.2	124.1
32.5°	172.8	173.1	172.8	171.7	168.7	164.0	157.8	149.7	140.6	131.0	121.7
35°	173.8	173.5	173.5	172.5	169.3	164.1	157.3	149.0	139.2	128.8	118.8
37.5°	173.8	174.0	174.0	172.6	169.4	163.8	156.9	147.8	137.6	126.5	115.9
40°	174.5	174.3	174.1	172.8	169.5	163.8	155.9	146.5	135.6	124.0	112.6
42.5°	173.8	174.2	173.7	172.4	168.7	162.7	154.5	144.7	133.4	121.1	108.9
45°	172.8	173.1	173.0	171.5	167.8	161.5	153.4	142.8	130.9	117.9	105.1
47.5°	171.6	172.1	171.8	170.2	166.4	160.0	151.2	140.2	127.8	114.7	101.1
50°	169.9	170.1	170.1	168.7	164.5	157.8	148.8	137.5	125.0	110.8	96.9
52.5°	167.7	167.9	167.9	166.5	162.4	155.7	146.1	134.7	121.4	107.0	92.3
55°	165.9	166.2	165.6	164.1	159.7	153.1	143.5	131.4	117.7	102.7	87.8
57.5°	163.1	163.2	163.1	161.6	157.2	150.1	140.1	128.4	114.2	98.6	83.2
60°	159.9	160.2	159.9	158.6	154.4	146.4	137.1	124.7	109.9	93.9	78.2
62.5°	156.7	156.6	156.6	155.1	150.9	142.7	133.0	120.1	105.4	89.4	73.1
65°	152.7	153.2	152.8	151.1	146.9	139.0	128.7	116.0	100.9	84.2	67.4
67.5°	148.7	149.0	149.1	147.6	142.6	135.2	124.4	111.4	95.9	78.9	61.8
70°	144.3	144.8	144.4	142.9	138.1	130.2	119.7	106.3	91.0	73.8	56.6
72.5°	139.4	139.7	139.7	138.3	133.7	125.3	114.4	101.3	85.5	68.0	50.7
75°	134.6	134.5	134.7	133.1	128.2	119.9	109.2	95.8	80.3	62.6	45.1
77.5°	129.7	129.7	129.8	128.2	123.5	114.9	103.9	90.6	74.8	57.1	39.6
80°	124.2	124.1	124.2	122.8	117.7	109.5	98.0	84.6	69.0	51.1	34.2
82.5°	118.2	118.5	118.2	116.8	111.6	103.5	92.4	78.8	63.3	45.8	28.9
85°	112.1	112.3	111.9	110.6	105.7	97.6	86.4	72.9	57.1	40.3	24.2
87.5°	105.7	105.8	105.7	104.6	99.9	91.5	80.0	66.9	51.4	35.0	20.3
90°	99.6	99.5	99.8	98.0	93.3	85.3	74.0	61.0	46.0	30.4	17.4
92.5°	93.1	93.4	93.1	91.8	87.0	78.9	68.0	55.5	41.1	26.7	16.0
95°	86.7	86.9	87.0	85.4	80.8	72.6	62.3	50.0	36.8	24.3	15.8
97.5°	79.8	80.1	79.9	78.6	74.2	66.5	56.7	45.2	33.4	23.4	15.6
100°	73.4	73.4	73.5	72.2	67.9	60.7	51.3	41.1	31.4	22.8	15.5
102.5°	67.3	67.2	67.2	65.9	61.9	55.2	47.1	38.7	30.8	22.2	15.1
105°	60.9	61.1	60.7	59.8	56.3	50.7	44.0	37.3	29.9	21.7	14.7
107.5°	55.4	55.4	55.4	54.9	51.9	47.5	42.5	36.5	29.1	21.2	14.5
110°	51.1	51.1	51.3	51.0	49.0	45.9	41.1	35.2	28.1	20.3	14.0



TEST NUMBER: G1-1710-337-19

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

**CANDELA DISTRIBUTION (continued):**

	0°	1°	5°	15°	25°	35°	45°	55°	65°	75°	85°
112.5°	48.6	48.6	48.8	49.1	47.6	44.5	40.0	34.3	27.3	19.7	13.7
115°	47.1	47.2	47.1	47.5	46.0	43.1	38.9	33.1	26.4	19.0	13.1
117.5°	45.4	45.5	45.6	45.7	44.4	41.5	37.3	31.8	25.3	18.4	12.8
120°	43.6	43.7	43.9	44.1	42.9	40.1	35.9	30.7	24.3	17.6	12.3
122.5°	41.8	41.7	42.1	42.2	41.1	38.5	34.5	29.4	23.3	16.8	11.8
125°	40.0	39.8	40.1	40.3	39.0	36.6	32.9	28.1	22.0	15.9	11.2
127.5°	38.0	38.3	38.1	38.4	37.4	35.0	31.4	26.7	21.0	15.1	10.8
130°	36.3	36.1	36.4	36.7	35.6	33.4	29.7	25.2	20.0	14.4	10.3
132.5°	34.2	34.2	34.4	34.6	33.6	31.4	28.1	23.8	18.6	13.4	9.8
135°	32.3	32.0	32.3	32.5	31.6	29.4	26.3	22.3	17.4	12.6	9.2
137.5°	30.2	30.3	30.3	30.4	29.5	27.5	24.6	20.7	16.2	11.6	8.6
140°	28.1	28.2	28.4	28.4	27.6	25.8	23.1	19.3	14.9	10.9	7.9
142.5°	26.0	26.2	26.1	26.4	25.4	23.6	21.2	17.8	13.9	10.0	7.5
145°	24.0	23.9	24.1	24.2	23.4	21.9	19.3	16.1	12.5	9.0	6.9
147.5°	21.8	21.8	21.8	21.8	21.0	19.6	17.6	14.5	11.3	8.1	6.2
150°	19.7	19.8	19.8	19.7	19.0	17.6	15.5	12.9	10.0	7.3	5.6
152.5°	17.4	17.4	17.6	17.4	16.9	15.6	13.7	11.3	8.7	6.2	4.9
155°	15.3	15.3	15.2	15.2	14.7	13.4	11.8	9.8	7.4	5.5	4.4
157.5°	13.3	13.3	13.1	13.1	12.6	11.5	10.0	8.2	6.3	4.7	3.9
160°	10.9	11.0	11.0	10.9	10.3	9.6	8.2	6.7	5.2	3.9	3.4
162.5°	8.8	8.9	8.8	8.6	8.3	7.4	6.5	5.2	4.1	3.0	2.5
165°	6.8	6.9	6.9	6.6	6.4	5.9	5.0	4.0	3.1	2.5	2.2
167.5°	4.8	4.9	4.8	4.8	4.4	4.0	3.4	2.7	2.0	1.8	1.6
170°	3.2	2.9	3.1	2.8	2.7	2.4	2.1	1.6	1.2	1.0	1.1
172.5°	1.6	1.5	1.7	1.6	1.5	1.3	1.0	0.8	0.7	0.6	0.6
175°	0.6	0.6	0.7	0.4	0.3	0.4	0.3	0.4	0.4	0.2	0.4
177.5°	0.0	0.1	0.1	0.2	0.1	0.1	0.2	0.1	0.2	0.1	0.1
180°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: G1-1710-337-19

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

**CANDELA DISTRIBUTION (continued):**

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	135.2	135.2	135.2	135.2	135.2	135.2	135.2	135.2	135.2	135.2	135.2
2.5°	135.2	134.9	134.1	133.7	133.1	132.5	132.2	131.9	131.8	131.7	132.1
5°	135.1	134.3	133.2	132.0	131.1	130.1	129.4	128.9	128.6	128.2	128.0
7.5°	134.5	133.6	131.9	130.3	128.7	127.4	126.3	125.4	125.0	124.5	124.7
10°	134.2	132.7	130.6	128.5	126.5	124.8	123.2	122.2	121.4	120.9	120.9
12.5°	133.3	131.5	128.9	126.1	123.5	121.6	119.7	118.2	117.2	116.6	116.5
15°	132.2	130.4	127.1	123.9	121.0	118.3	116.0	114.0	112.7	112.1	112.1
17.5°	130.8	128.7	125.1	121.5	118.1	114.8	112.1	109.9	108.6	107.7	107.8
20°	129.3	126.7	122.5	118.6	114.6	111.1	107.8	105.4	103.6	103.0	102.8
22.5°	127.7	125.1	120.2	115.8	111.2	107.3	103.7	100.8	98.8	97.9	97.7
25°	125.4	122.5	117.7	112.4	107.6	103.0	99.3	96.1	93.9	92.6	92.8
27.5°	122.8	119.9	114.2	108.8	103.5	98.7	94.5	90.9	88.5	87.3	87.3
30°	120.4	117.1	111.1	105.2	99.6	94.1	89.7	85.9	83.2	81.9	81.6
32.5°	117.3	113.9	107.5	101.1	95.4	89.6	84.6	80.3	77.4	76.1	75.9
35°	114.2	110.7	104.0	97.4	90.9	84.7	79.2	74.9	71.7	70.2	70.3
37.5°	110.9	107.2	100.0	92.9	86.2	79.7	74.0	69.1	65.9	64.3	64.0
40°	107.7	103.6	96.0	88.4	81.1	74.5	68.6	63.7	59.9	58.3	58.3
42.5°	103.7	99.4	91.4	83.7	76.1	69.2	62.7	57.6	53.7	52.3	51.9
45°	99.7	95.3	87.1	78.9	70.9	63.5	57.2	51.9	47.6	46.0	46.0
47.5°	95.3	90.7	82.4	73.6	65.7	58.1	51.2	45.4	41.4	39.5	39.5
50°	91.1	86.4	77.5	68.6	60.1	52.3	45.3	39.3	35.1	33.1	32.7
52.5°	86.4	81.6	72.2	63.3	54.5	46.6	39.2	33.2	28.6	26.8	26.6
55°	81.7	76.6	67.2	57.8	48.9	40.6	33.5	27.2	22.5	20.7	20.7
57.5°	76.9	71.6	62.0	52.6	43.5	35.1	27.6	21.5	16.8	14.7	14.7
60°	71.6	66.3	56.8	47.1	37.8	29.2	22.0	15.8	11.0	9.4	9.5
62.5°	66.3	61.1	50.9	41.1	32.0	23.6	16.6	10.7	6.2	4.8	4.5
65°	61.1	55.7	45.4	35.8	26.6	18.6	11.8	6.2	2.1	0.9	0.8
67.5°	55.3	49.9	40.0	30.3	21.5	13.9	7.9	2.8	0.0	0.0	0.0
70°	49.6	44.4	34.6	25.3	16.7	9.9	4.9	1.9	0.0	0.0	0.0
72.5°	44.1	38.8	29.2	20.3	12.8	7.3	4.8	1.9	0.0	0.0	0.0
75°	38.5	33.3	24.2	16.3	10.0	7.1	4.8	2.0	0.0	0.0	0.0
77.5°	33.1	28.3	19.9	12.9	9.6	7.3	5.0	2.1	0.0	0.0	0.0
80°	27.8	23.7	16.1	11.6	9.6	7.3	4.9	2.2	0.0	0.0	0.0
82.5°	23.2	19.4	13.9	11.6	9.6	7.4	4.9	2.2	0.0	0.0	0.0
85°	19.1	16.1	13.2	11.6	9.7	7.4	5.0	2.2	0.0	0.0	0.0
87.5°	15.8	14.3	13.2	11.5	9.7	7.4	5.0	2.2	0.0	0.0	0.0
90°	14.4	14.1	13.2	11.5	9.5	7.4	5.0	2.3	0.0	0.0	0.0
92.5°	14.5	14.1	13.1	11.5	9.6	7.4	5.0	2.3	0.0	0.0	0.0
95°	14.2	13.9	12.8	11.5	9.4	7.3	5.1	2.4	0.0	0.0	0.0
97.5°	14.2	13.9	12.9	11.4	9.5	7.4	5.0	2.4	0.0	0.0	0.0
100°	13.8	13.7	12.7	11.2	9.2	7.2	4.9	2.3	0.0	0.0	0.0
102.5°	13.6	13.5	12.6	11.0	9.3	7.2	4.9	2.3	0.0	0.0	0.0
105°	13.4	13.1	12.1	10.9	9.0	6.9	4.8	2.3	0.0	0.0	0.0
107.5°	13.2	12.9	11.9	10.7	8.9	6.9	4.7	2.2	0.0	0.0	0.0
110°	12.8	12.6	11.7	10.2	8.7	6.7	4.5	2.1	0.0	0.0	0.0





TEST NUMBER: G1-1710-337-19

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

**CANDELA DISTRIBUTION (continued):**

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
112.5°	12.6	12.3	11.3	10.1	8.6	6.5	4.5	2.1	0.0	0.0	0.0
115°	12.3	12.0	11.2	9.8	8.2	6.4	4.3	1.9	0.0	0.0	0.0
117.5°	11.8	11.5	10.8	9.6	7.9	6.2	4.2	1.7	0.0	0.0	0.0
120°	11.4	11.3	10.4	9.2	7.6	6.1	4.1	1.7	0.0	0.0	0.0
122.5°	11.0	10.8	10.0	9.0	7.4	5.7	3.9	1.5	0.0	0.0	0.0
125°	10.6	10.3	9.6	8.4	7.0	5.5	3.6	1.4	0.0	0.0	0.0
127.5°	10.1	9.9	9.2	8.1	6.7	5.3	3.4	1.2	0.0	0.0	0.0
130°	9.7	9.4	8.8	7.8	6.6	5.0	3.4	1.2	0.0	0.0	0.0
132.5°	9.3	9.1	8.4	7.4	6.3	4.7	3.2	1.2	0.0	0.0	0.0
135°	8.6	8.4	7.9	7.1	5.9	4.5	3.0	1.1	0.0	0.0	0.0
137.5°	8.2	8.1	7.4	6.6	5.4	4.0	2.7	0.8	0.0	0.0	0.0
140°	7.7	7.5	7.0	6.1	5.1	3.9	2.5	1.0	0.0	0.0	0.0
142.5°	7.3	7.1	6.6	5.8	4.9	3.6	2.4	0.9	0.0	0.0	0.0
145°	6.7	6.5	6.0	5.4	4.3	3.3	2.1	0.9	0.0	0.0	0.0
147.5°	6.1	6.0	5.5	4.8	4.0	2.9	1.9	0.8	0.0	0.0	0.0
150°	5.6	5.4	5.1	4.4	3.5	2.6	1.6	0.6	0.0	0.0	0.0
152.5°	5.0	4.8	4.4	3.9	3.0	2.3	1.3	0.5	0.0	0.0	0.0
155°	4.2	4.2	3.8	3.4	2.7	2.0	1.2	0.3	0.0	0.0	0.0
157.5°	3.8	3.7	3.4	2.9	2.4	1.6	1.0	0.4	0.0	0.0	0.0
160°	3.2	3.0	2.9	2.6	1.9	1.4	0.9	0.2	0.0	0.0	0.0
162.5°	2.5	2.6	2.3	1.9	1.5	1.0	0.5	0.1	0.0	0.0	0.0
165°	2.1	2.0	1.8	1.5	1.2	0.9	0.4	0.1	0.0	0.0	0.0
167.5°	1.6	1.4	1.2	1.0	0.9	0.5	0.2	0.0	0.0	0.0	0.0
170°	1.0	1.0	0.7	0.7	0.4	0.2	0.1	0.0	0.0	0.0	0.0
172.5°	0.6	0.7	0.5	0.4	0.3	0.2	0.0	0.0	0.0	0.0	0.0
175°	0.2	0.3	0.2	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0
177.5°	0.1	0.1	0.1	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)