

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: G1-1710-337-18

Luminaire Tested: **B95-HE-BLK-LD4-12W-40-OPL-120-EDC1**

Test Date: 11/21/17



Test Information

Test Method: LM-79-08
Report Number: G1-1710-337-18
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-LD4-12W-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 @ 240mA
OT25UNVDIM1F0240

Summary

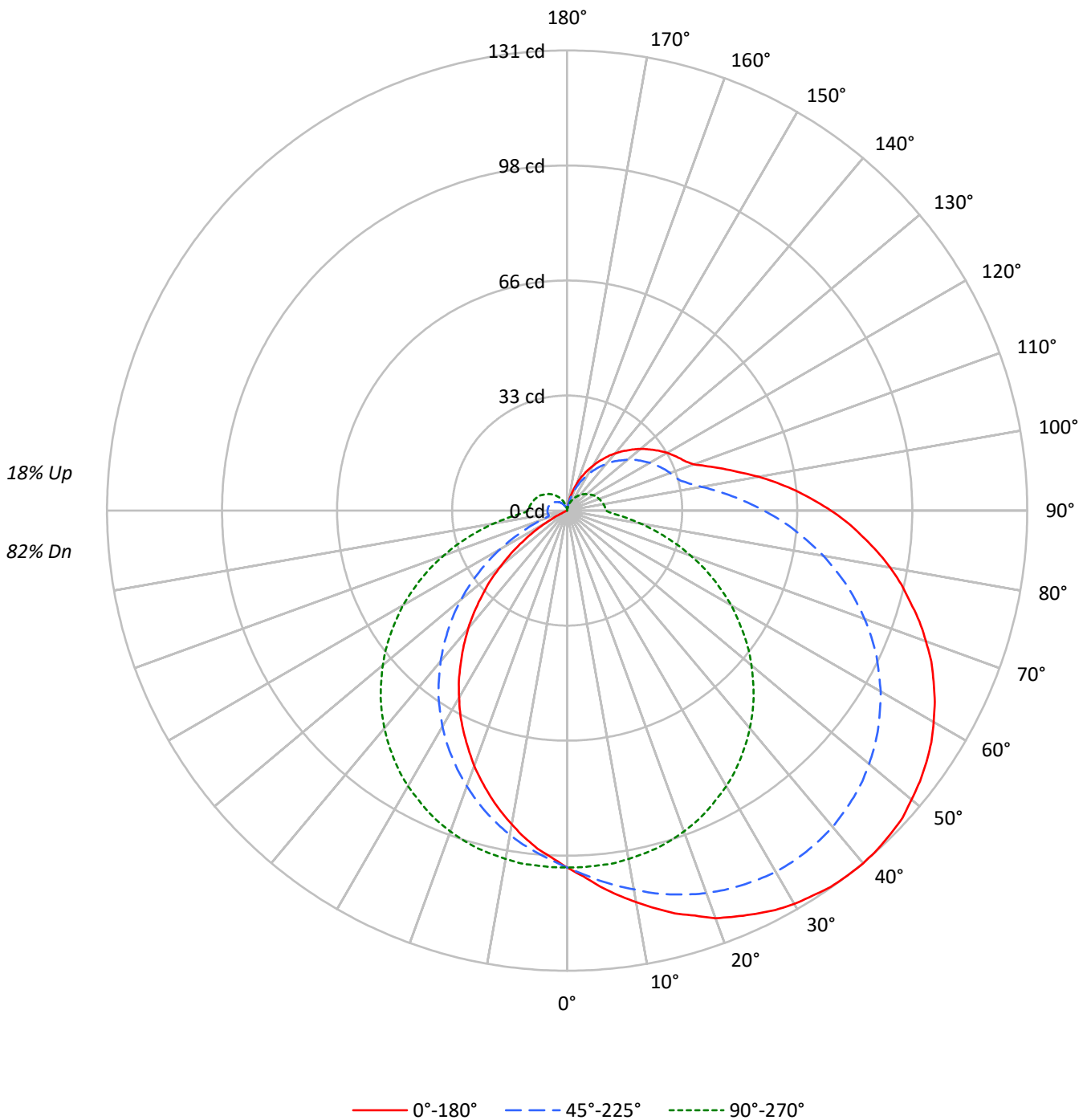
Lumens per Lamp: N/A
Luminaire Lumens: 485.1 lumens
Efficiency: N/A
Efficacy: 41.5 lumens/watt
Spacing Criteria (0/90/45): 1.39 / 1.32 / 1.52
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 0.29' x H: 0.35')
CIE Type: Semi-Direct

Input Watts (W): 11.7
Input Voltage (V): 120.1
Input Current (A_{in}): 0.0981
Voltage Rise (V): NR
Power Factor: 0.9942
Total Harmonic Distortion (THDi): 6.63%
Frequency (hertz): 60
Stabilization Time: 0.5 HR
Operation Time: 7.0 HR
Ambient Temperature (°C): 25.3
Test Distance: 25 FT

TEST NUMBER: G1-1710-337-18

CATALOG NUMBER: B95-HE-BLK-LD4-12W-40-OPL-120-EDC1

Luminous Intensity Polar Plot





TEST NUMBER: G1-1710-337-18

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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	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	82	84	80	76	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	44	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	40	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	47	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°	5624	5624	5624
5°	5395	5384	4852
10°	5241	5176	4199
15°	5133	4987	3645
20°	5045	4798	3162
25°	4941	4616	2718
30°	4859	4432	2311
35°	4777	4241	1925
40°	4693	4044	1571
45°	4603	3840	1213
50°	4505	3612	869
55°	4409	3369	547
60°	4299	3114	250
65°	4183	2804	25
70°	4057	2455	0
75°	3913	2080	0
80°	3775	1676	0
85°	3603	1293	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	9.7	2.0
10°-20°	28.5	5.9
20°-30°	44.8	9.2
30°-40°	56.5	11.6
40°-50°	62.0	12.8
50°-60°	60.7	12.5
60°-70°	53.7	11.1
70°-80°	44.7	9.2
80°-90°	35.3	7.3
90°-100°	26.5	5.5
100°-110°	19.5	4.0
110°-120°	15.3	3.2
120°-130°	11.8	2.4
130°-140°	8.2	1.7
140°-150°	4.9	1.0
150°-160°	2.3	0.5
160°-170°	0.6	0.1
170°-180°	0.0	0.0
0°-30°	83.0	17.1
0°-40°	139.5	28.8
0°-60°	262.2	54.1
0°-90°	395.9	81.6
90°-120°	61.3	12.6
90°-150°	86.2	17.8
90°-180°	89.0	18.3
0°-180°	485.1	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	102	102	102	102	102	
5°	107	106	101	98	97	10
15°	119	113	99	89	84	34
25°	127	118	94	78	70	59
35°	131	119	86	64	53	82
45°	130	115	75	48	34	101
55°	125	108	61	31	16	112
65°	115	97	46	14	1	114
75°	101	82	29	5	0	107
85°	84	65	14	6	0	71
90°	75	56	11	6	0	41
95°	65	47	11	6	0	51
105°	46	33	10	5	0	49
115°	35	29	9	5	0	35
125°	30	25	8	4	0	27
135°	24	20	7	3	0	19
145°	18	15	5	2	0	11
155°	12	9	3	2	0	5
165°	5	4	2	1	0	2
175°	0	0	0	0	0	0
180°	0	0	0	0	0	0



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CANDELA DISTRIBUTION (FULL):

	0°	1°	5°	15°	25°	35°	45°	55°	65°	75°	85°
0°	101.6	101.6	101.6	101.6	101.6	101.6	101.6	101.6	101.6	101.6	101.6
2.5°	104.2	104.6	104.4	104.3	104.2	104.0	103.6	103.3	102.8	102.4	101.9
5°	107.4	107.3	107.3	107.2	106.8	106.4	105.7	104.8	103.9	102.9	102.0
7.5°	110.4	110.3	110.4	110.0	109.6	108.7	107.7	106.4	104.9	103.5	101.9
10°	113.2	113.4	113.2	112.9	112.1	111.0	109.5	107.8	105.9	103.9	101.8
12.5°	116.0	116.1	116.0	115.6	114.7	113.3	111.5	109.2	106.7	104.0	101.4
15°	118.7	118.8	118.8	118.2	117.1	115.4	113.1	110.3	107.3	104.1	100.9
17.5°	120.9	121.0	120.9	120.5	119.1	117.2	114.6	111.4	107.8	103.9	100.2
20°	123.5	123.5	123.5	122.8	121.3	119.1	115.9	112.2	108.0	103.5	99.2
22.5°	125.1	125.3	125.1	124.5	122.8	120.4	116.9	112.8	108.0	102.9	98.1
25°	126.7	127.0	126.7	126.0	124.4	121.5	117.7	113.1	107.8	102.2	96.7
27.5°	128.2	128.2	128.2	127.5	125.6	122.5	118.3	113.3	107.5	101.3	95.2
30°	129.3	129.5	129.3	128.6	126.4	123.3	118.8	113.2	106.8	100.1	93.5
32.5°	130.0	130.3	130.2	129.4	127.0	123.5	118.8	112.8	106.0	98.7	91.6
35°	130.8	130.9	130.8	129.9	127.7	123.8	118.6	112.3	105.1	97.2	89.4
37.5°	131.0	131.3	131.0	130.1	127.8	123.5	118.2	111.5	103.8	95.2	87.2
39°	131.1	131.3	131.1	130.1	127.7	123.4	117.8	110.8	102.9	94.1	85.6
40°	131.1	131.1	131.0	130.2	127.6	123.5	117.6	110.4	102.2	93.3	84.6
42.5°	130.8	130.9	130.9	129.7	127.1	122.5	116.5	109.0	100.4	91.0	82.0
45°	130.2	130.4	130.3	129.2	126.3	121.7	115.4	107.6	98.6	88.7	79.2
47.5°	129.5	129.4	129.4	128.3	125.4	120.5	114.0	105.7	96.5	86.1	76.1
50°	128.0	128.2	128.0	127.0	124.0	118.9	112.2	103.7	94.1	83.5	72.9
52.5°	126.6	126.6	126.4	125.4	122.5	117.2	110.3	101.5	91.5	80.4	69.5
55°	124.9	124.8	124.7	123.6	120.4	115.3	108.1	99.1	88.8	77.4	66.2
57.5°	122.9	123.1	122.8	121.7	118.4	113.0	105.6	96.5	86.0	74.2	62.5
60°	120.5	120.7	120.5	119.3	116.1	110.3	103.1	93.6	82.8	70.9	58.8
62.5°	118.0	117.9	117.9	116.6	113.4	107.7	100.0	90.5	79.6	67.1	54.8
65°	115.1	115.2	115.1	113.9	110.4	104.8	97.1	87.4	76.1	63.3	50.8
67.5°	112.2	112.1	112.2	111.0	107.4	101.5	93.7	83.8	72.5	59.4	46.8
70°	108.7	108.8	108.8	107.7	104.2	98.0	90.1	80.3	68.7	55.6	42.6
72.5°	105.2	105.3	105.2	104.1	100.4	94.3	86.3	76.5	64.6	51.3	38.3
75°	101.2	101.7	101.4	100.4	96.8	90.7	82.5	72.2	60.5	47.3	34.1
77.5°	97.5	97.6	97.5	96.4	92.8	86.5	78.2	68.1	56.4	42.7	29.9
80°	93.4	93.4	93.3	92.3	88.6	82.4	74.1	63.8	52.0	38.6	25.8
82.5°	89.0	89.2	89.1	87.8	84.2	78.1	69.5	59.3	47.8	34.4	21.9
85°	84.4	84.5	84.3	83.3	79.5	73.5	65.2	54.9	43.2	30.4	18.4
87.5°	80.0	79.9	79.6	78.7	75.0	68.8	60.6	50.3	39.0	26.6	15.3
90°	75.1	75.1	74.9	73.9	70.1	64.1	56.0	46.0	34.9	23.0	13.1
92.5°	70.1	70.2	70.2	69.0	65.5	59.6	51.5	41.9	31.2	20.2	12.2
95°	65.3	65.2	65.2	64.2	60.8	54.8	47.1	37.8	27.9	18.4	12.0
97.5°	60.3	60.2	60.2	59.2	55.8	50.3	42.9	34.2	25.3	17.7	11.9
100°	55.4	55.3	55.3	54.4	51.0	45.7	38.9	31.2	24.0	17.3	11.6
102.5°	50.2	50.7	50.6	49.6	46.7	41.7	35.6	29.1	23.3	16.8	11.4
105°	46.0	45.8	45.9	45.2	42.6	38.3	33.2	28.3	22.7	16.4	11.1
107.5°	41.9	41.8	41.8	41.3	39.2	35.7	32.1	27.5	22.0	15.9	10.9



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CANDELA DISTRIBUTION (continued):

	0°	1°	5°	15°	25°	35°	45°	55°	65°	75°	85°
110°	38.4	38.5	38.5	38.4	37.0	34.6	31.2	26.7	21.4	15.4	10.6
112.5°	36.5	36.6	36.8	36.9	35.8	33.5	30.3	25.9	20.7	14.9	10.3
115°	35.3	35.4	35.5	35.7	34.7	32.5	29.3	25.0	20.0	14.4	10.0
117.5°	34.1	34.2	34.2	34.4	33.5	31.4	28.2	24.1	19.2	13.9	9.7
120°	32.9	32.9	33.0	33.1	32.2	30.2	27.2	23.1	18.4	13.3	9.3
122.5°	31.5	31.5	31.7	31.7	30.9	29.0	26.0	22.2	17.7	12.7	8.9
125°	30.1	30.2	30.3	30.4	29.6	27.7	24.9	21.2	16.8	12.1	8.5
127.5°	28.7	28.8	28.9	29.1	28.2	26.4	23.8	20.1	16.0	11.5	8.2
130°	27.3	27.4	27.4	27.5	26.8	25.1	22.5	19.1	15.1	10.9	7.7
132.5°	25.8	25.8	26.0	26.1	25.3	23.7	21.2	18.0	14.2	10.2	7.4
135°	24.2	24.3	24.4	24.5	23.9	22.3	20.0	16.9	13.3	9.6	6.9
137.5°	22.8	22.8	22.9	23.0	22.3	20.9	18.7	15.7	12.3	8.9	6.5
140°	21.2	21.2	21.3	21.4	20.8	19.4	17.3	14.6	11.4	8.2	6.1
142.5°	19.7	19.6	19.8	19.8	19.2	17.9	16.0	13.4	10.4	7.5	5.6
145°	18.0	18.1	18.1	18.1	17.6	16.5	14.6	12.2	9.5	6.9	5.2
147.5°	16.5	16.5	16.5	16.5	16.0	14.9	13.2	11.0	8.5	6.2	4.7
150°	14.8	14.9	14.9	14.8	14.4	13.4	11.8	9.8	7.6	5.5	4.3
152.5°	13.2	13.2	13.2	13.2	12.7	11.8	10.4	8.6	6.6	4.8	3.8
155°	11.5	11.6	11.6	11.5	11.1	10.3	9.0	7.4	5.7	4.2	3.4
157.5°	10.0	9.9	9.9	9.8	9.4	8.7	7.6	6.2	4.8	3.5	2.9
160°	8.3	8.3	8.3	8.2	7.8	7.2	6.3	5.1	3.9	2.9	2.4
162.5°	6.7	6.7	6.7	6.6	6.3	5.7	4.9	4.0	3.1	2.3	2.0
165°	5.0	5.1	5.1	5.0	4.8	4.3	3.7	3.0	2.3	1.8	1.6
167.5°	3.6	3.7	3.6	3.6	3.4	3.0	2.6	2.1	1.6	1.3	1.2
170°	2.3	2.3	2.3	2.2	2.1	1.9	1.6	1.3	1.0	0.8	0.8
172.5°	1.2	1.2	1.2	1.2	1.1	0.9	0.8	0.6	0.5	0.5	0.5
175°	0.4	0.4	0.4	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2
177.5°	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	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



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CANDELA DISTRIBUTION (continued):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	101.6	101.6	101.6	101.6	101.6	101.6	101.6	101.6	101.6	101.6	101.6
2.5°	101.6	101.4	100.9	100.5	100.0	99.7	99.4	99.2	99.0	99.0	98.9
5°	101.4	101.0	100.0	99.2	98.5	97.8	97.3	96.9	96.6	96.4	96.6
7.5°	101.3	100.4	99.1	98.0	96.9	95.9	95.1	94.3	93.8	93.8	93.8
10°	100.7	99.8	98.1	96.4	95.1	93.8	92.6	91.7	91.1	90.8	90.7
12.5°	100.1	99.1	96.9	94.9	93.1	91.4	90.0	88.7	87.9	87.7	87.6
15°	99.4	97.9	95.5	93.3	91.0	89.0	87.2	85.7	84.9	84.5	84.3
17.5°	98.4	96.8	94.1	91.2	88.6	86.3	84.2	82.7	81.4	81.0	80.8
20°	97.2	95.4	92.2	89.2	86.2	83.5	81.2	79.4	78.0	77.4	77.4
22.5°	95.9	94.0	90.3	87.0	83.7	80.6	78.1	75.9	74.3	73.8	73.4
25°	94.3	92.1	88.3	84.6	80.9	77.5	74.6	72.3	70.7	69.7	69.7
27.5°	92.4	90.3	86.0	82.0	78.0	74.4	71.1	68.5	66.5	65.6	65.8
30°	90.6	88.1	83.6	79.2	74.8	71.0	67.5	64.5	62.5	61.5	61.5
32.5°	88.5	85.8	81.0	76.2	71.6	67.4	63.5	60.5	58.3	57.2	57.4
35°	86.1	83.4	78.2	73.2	68.2	63.9	59.8	56.4	54.2	52.9	52.7
37.5°	83.6	80.6	75.2	69.9	64.7	59.9	55.6	52.0	49.7	48.4	48.3
39°	82.0	79.0	73.3	67.9	62.6	57.6	53.2	49.6	47.0	45.7	45.5
40°	80.9	77.9	72.1	66.5	61.2	56.0	51.5	48.0	45.2	43.8	43.9
42.5°	78.1	74.9	68.9	63.1	57.3	52.0	47.3	43.3	40.6	39.3	39.1
45°	75.1	71.8	65.6	59.3	53.4	47.8	43.0	38.8	35.9	34.6	34.3
47.5°	71.8	68.6	61.9	55.7	49.5	43.8	38.7	34.4	31.1	29.7	29.8
50°	68.5	65.1	58.4	51.7	45.4	39.4	34.0	29.8	26.5	25.1	24.7
52.5°	65.1	61.3	54.6	47.8	41.0	35.1	29.7	25.3	21.8	20.2	20.2
55°	61.4	57.7	50.8	43.7	36.9	30.7	25.2	20.5	17.1	15.8	15.5
57.5°	57.6	53.9	46.8	39.4	32.7	26.3	20.9	16.1	12.7	11.3	11.2
60°	54.0	50.0	42.5	35.3	28.5	22.1	16.6	12.0	8.3	7.1	7.0
62.5°	49.8	45.9	38.5	31.1	24.2	17.9	12.6	8.1	4.6	3.6	3.4
65°	45.8	41.9	34.3	27.0	20.1	14.1	8.9	4.8	1.6	0.7	0.7
67.5°	41.7	37.6	30.2	23.0	16.2	10.6	5.9	2.1	0.0	0.0	0.0
70°	37.3	33.4	26.1	19.1	12.6	7.6	3.8	1.5	0.0	0.0	0.0
72.5°	33.3	29.4	22.0	15.4	9.8	5.6	3.6	1.5	0.0	0.0	0.0
75°	29.0	25.3	18.5	12.3	7.6	5.4	3.6	1.5	0.0	0.0	0.0
77.5°	25.0	21.4	15.1	9.9	7.2	5.5	3.7	1.6	0.0	0.0	0.0
80°	21.1	17.7	12.3	8.8	7.2	5.5	3.7	1.6	0.0	0.0	0.0
82.5°	17.6	14.7	10.5	8.7	7.2	5.6	3.7	1.7	0.0	0.0	0.0
85°	14.4	12.2	9.9	8.7	7.2	5.6	3.8	1.7	0.0	0.0	0.0
87.5°	12.1	10.8	9.9	8.7	7.3	5.6	3.8	1.7	0.0	0.0	0.0
90°	11.0	10.6	9.9	8.7	7.2	5.6	3.8	1.8	0.0	0.0	0.0
92.5°	10.8	10.6	9.8	8.7	7.2	5.6	3.8	1.8	0.0	0.0	0.0
95°	10.8	10.5	9.8	8.6	7.2	5.5	3.8	1.8	0.0	0.0	0.0
97.5°	10.7	10.4	9.7	8.6	7.1	5.5	3.8	1.8	0.0	0.0	0.0
100°	10.5	10.3	9.6	8.4	7.0	5.5	3.7	1.8	0.0	0.0	0.0
102.5°	10.3	10.1	9.4	8.3	6.9	5.4	3.7	1.7	0.0	0.0	0.0
105°	10.1	9.9	9.2	8.2	6.8	5.3	3.6	1.7	0.0	0.0	0.0
107.5°	9.9	9.7	9.0	8.0	6.7	5.2	3.6	1.6	0.0	0.0	0.0



TEST NUMBER: G1-1710-337-18

CATALOG NUMBER: B95-HE-BLK-LD4-12W-40-OPL-120-EDC1

CANDELA DISTRIBUTION (continued):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
110°	9.7	9.5	8.9	7.8	6.6	5.1	3.5	1.6	0.0	0.0	0.0
112.5°	9.5	9.3	8.6	7.6	6.4	5.0	3.4	1.5	0.0	0.0	0.0
115°	9.2	9.0	8.4	7.5	6.2	4.8	3.3	1.4	0.0	0.0	0.0
117.5°	9.0	8.8	8.1	7.2	6.1	4.7	3.2	1.4	0.0	0.0	0.0
120°	8.7	8.5	7.9	7.0	5.8	4.5	3.1	1.3	0.0	0.0	0.0
122.5°	8.3	8.2	7.6	6.7	5.6	4.4	3.0	1.2	0.0	0.0	0.0
125°	8.0	7.9	7.3	6.5	5.4	4.2	2.8	1.1	0.0	0.0	0.0
127.5°	7.7	7.5	7.0	6.2	5.2	4.0	2.7	1.0	0.0	0.0	0.0
130°	7.3	7.2	6.7	5.9	4.9	3.8	2.5	0.9	0.0	0.0	0.0
132.5°	7.0	6.8	6.3	5.6	4.7	3.6	2.4	0.8	0.0	0.0	0.0
135°	6.6	6.5	6.0	5.3	4.4	3.4	2.2	0.8	0.0	0.0	0.0
137.5°	6.2	6.1	5.6	5.0	4.2	3.2	2.1	0.7	0.0	0.0	0.0
140°	5.8	5.7	5.3	4.7	3.9	3.0	1.9	0.7	0.0	0.0	0.0
142.5°	5.4	5.3	4.9	4.3	3.6	2.7	1.7	0.7	0.0	0.0	0.0
145°	5.0	4.9	4.5	4.0	3.3	2.5	1.6	0.6	0.0	0.0	0.0
147.5°	4.6	4.5	4.2	3.7	3.0	2.3	1.4	0.6	0.0	0.0	0.0
150°	4.2	4.1	3.8	3.3	2.7	2.0	1.2	0.5	0.0	0.0	0.0
152.5°	3.8	3.7	3.4	2.9	2.4	1.8	1.1	0.4	0.0	0.0	0.0
155°	3.3	3.2	3.0	2.6	2.1	1.5	0.9	0.3	0.0	0.0	0.0
157.5°	2.8	2.8	2.6	2.2	1.8	1.3	0.8	0.2	0.0	0.0	0.0
160°	2.4	2.4	2.2	1.8	1.5	1.0	0.6	0.2	0.0	0.0	0.0
162.5°	2.0	1.9	1.8	1.5	1.2	0.8	0.4	0.1	0.0	0.0	0.0
165°	1.6	1.5	1.4	1.1	0.9	0.6	0.3	0.1	0.0	0.0	0.0
167.5°	1.1	1.1	1.0	0.8	0.6	0.4	0.2	0.0	0.0	0.0	0.0
170°	0.8	0.7	0.6	0.5	0.4	0.2	0.1	0.0	0.0	0.0	0.0
172.5°	0.4	0.4	0.3	0.3	0.2	0.1	0.0	0.0	0.0	0.0	0.0
175°	0.2	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
177.5°	0.1	0.1	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)