

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: G1-1710-337-16

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

Test Date: 11/08/17



Test Information

Test Method: LM-79-08
Report Number: G1-1710-337-16
Test Lab: INNOVATION CENTER(G1)
Test Date: 11/08/17
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: B95-PP-BLK-LD4-20W-40-OPL-120-EDC1
Description: VR 2000 BRICK LED WITH OPAL LENS & PAINTED PERIMETER FLAT BLACK.
Light Source: (56) NICHIA 4000K LEDS
1FS402256M8404
Ballast/Driver: (1) OSRAM ELECTRONIC DRIVER @ 400mA
OT25UNVDIM1F0400

Summary

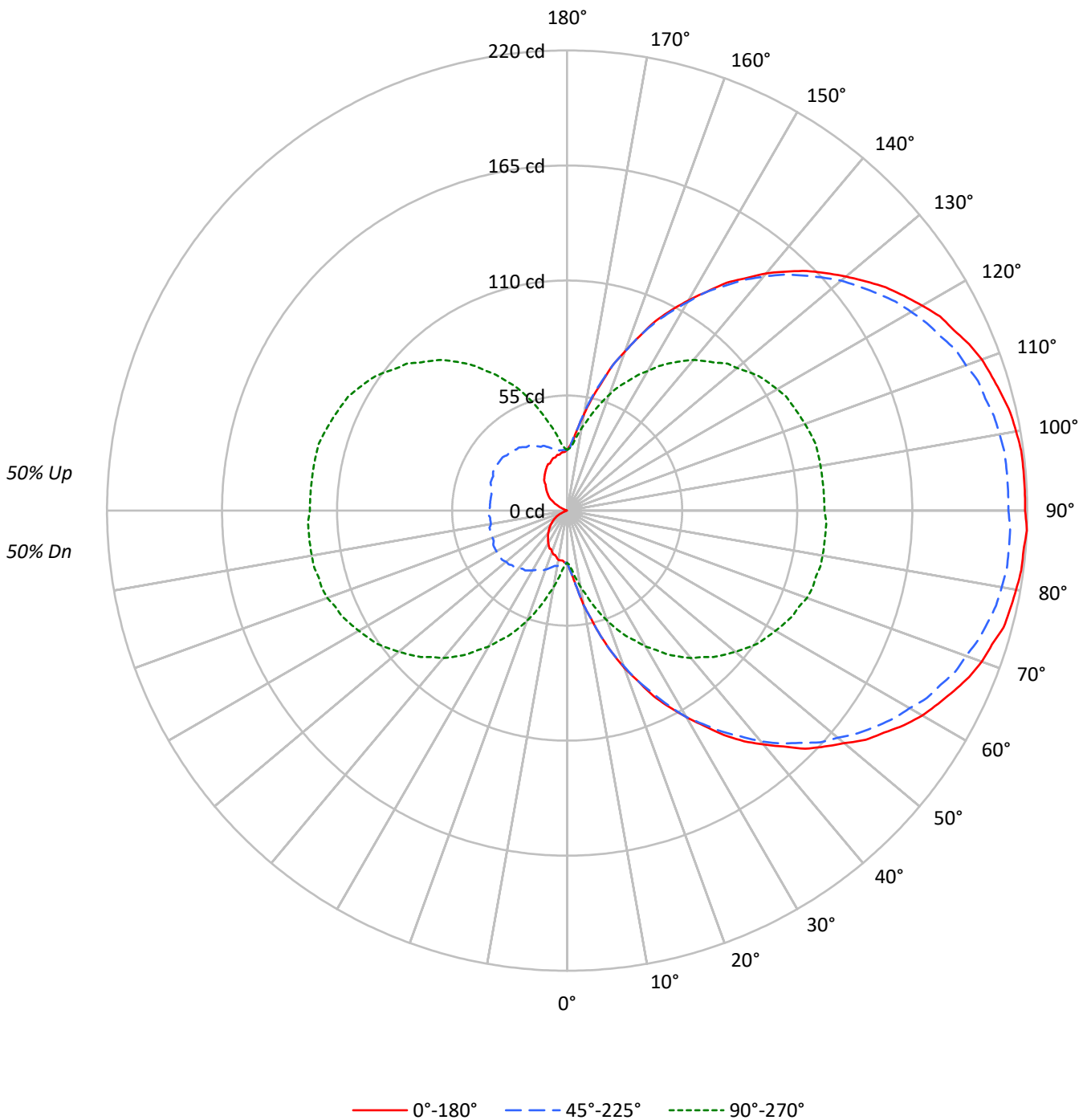
Lumens per Lamp: N/A
Luminaire Lumens: 1270.9 lumens
Efficiency: N/A
Efficacy: 66.9 lumens/watt
Spacing Criteria (0/90/45): 3.48 / 3.7 / 3.58
Luminous Opening: Rectangular w/ Sides (W: 0.35' x L: 0.29' x H: 0.67')
CIE Type: General Diffuse

Input Watts (W): 19
Input Voltage (V): 120.0
Input Current (Ain): 0.159
Voltage Rise (V): NR
Power Factor: 0.9982
Total Harmonic Distortion (THDi): 5.00%
Frequency (hertz): 60
Stabilization Time: 0.5 HR
Operation Time: 7.0 HR
Ambient Temperature (°C): 25.4
Test Distance: 25 FT

TEST NUMBER: G1-1710-337-16

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

Luminous Intensity Polar Plot





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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	107	107	107	107	99	99	99	99	83	83	83	69	69	69	56	56	56	50
1	92	86	80	75	84	79	73	69	65	61	57	53	50	47	41	39	37	31
2	82	72	64	57	75	66	58	52	54	48	43	43	39	35	33	30	27	22
3	74	62	52	45	67	56	48	41	46	40	34	37	32	27	28	24	21	16
4	67	53	44	37	60	49	40	34	40	33	28	32	26	22	24	20	17	13
5	61	47	37	30	55	43	34	28	35	28	23	28	22	18	21	17	13	10
6	55	42	32	25	50	38	29	23	31	24	19	25	19	15	19	14	11	8
7	51	37	28	22	46	34	26	20	28	21	16	22	17	13	17	13	10	7
8	47	33	25	19	43	31	23	17	25	19	14	20	15	11	15	11	8	6
9	44	30	22	16	40	28	20	15	23	17	12	18	13	10	14	10	7	5
10	41	28	20	14	37	25	18	13	21	15	11	17	12	9	13	9	6	4

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	2605	2605	2605
5°	2789	2604	2092
10°	3469	2939	1810
15°	4148	3299	1472
20°	4843	3685	1271
25°	5454	4041	1113
30°	5913	4324	934
35°	6408	4610	783
40°	6806	4852	653
45°	7221	5061	538
50°	7531	5248	435
55°	7881	5467	341
60°	8237	5625	252
65°	8523	5825	167
70°	8830	6023	42
75°	9125	6171	0
80°	9369	6373	0
85°	9653	6584	0



TEST NUMBER: G1-1710-337-16

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	3.0	0.2
10°-20°	12.9	1.0
20°-30°	29.3	2.3
30°-40°	50.4	4.0
40°-50°	73.3	5.8
50°-60°	95.1	7.5
60°-70°	113.0	8.9
70°-80°	125.2	9.8
80°-90°	130.9	10.3
90°-100°	130.2	10.2
100°-110°	124.8	9.8
110°-120°	113.4	8.9
120°-130°	96.0	7.6
130°-140°	74.5	5.9
140°-150°	51.7	4.1
150°-160°	30.5	2.4
160°-170°	13.6	1.1
170°-180°	3.2	0.3
0°-30°	45.2	3.6
0°-40°	95.5	7.5
0°-60°	263.9	20.8
0°-90°	633.0	49.8
90°-120°	368.4	29.0
90°-150°	590.6	46.5
90°-180°	638.0	50.2
0°-180°	1270.9	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	25	25	25	25	25	
5°	32	32	29	25	24	3
15°	62	62	46	28	22	18
25°	98	96	66	31	20	45
35°	131	129	84	35	16	82
45°	161	157	99	37	12	124
55°	185	180	111	39	8	166
65°	204	197	119	39	4	202
75°	216	208	123	38	0	228
85°	219	212	124	37	0	179
90°	219	211	123	37	0	120
95°	219	211	123	37	0	179
105°	215	207	123	38	0	227
115°	204	197	119	39	4	203
125°	186	181	112	40	10	167
135°	162	159	100	39	14	125
145°	133	131	86	37	19	83
155°	100	99	68	34	23	46
165°	63	64	49	31	26	19
175°	34	35	32	29	28	4
180°	29	29	29	29	29	



TEST NUMBER: G1-1710-337-16

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

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	25	25	25	25	25	25	25	25	25	25	25
2.5°	28	28	28	28	28	28	27	27	27	26	26
5°	32	32	32	32	32	32	32	31	30	30	29
7.5°	38	38	38	39	39	38	38	37	35	33	33
10°	46	46	46	46	46	46	44	42	40	38	37
12.5°	53	53	53	54	54	53	52	49	46	43	41
15°	62	62	62	62	63	62	60	56	52	48	46
17.5°	71	71	71	71	72	71	67	63	58	53	51
20°	80	80	79	80	81	79	75	71	64	58	56
22.5°	88	88	88	89	90	88	84	78	71	64	61
25°	98	97	97	98	99	96	92	85	77	69	66
27.5°	106	106	105	106	107	105	100	92	83	74	70
30°	114	114	114	115	116	114	107	99	89	79	75
32.5°	122	122	122	123	124	121	115	106	95	84	79
35°	131	131	129	130	132	129	123	113	101	88	84
37.5°	139	139	137	138	139	136	130	119	106	93	88
40°	146	145	144	145	146	144	136	125	111	97	92
42.5°	153	153	151	152	154	151	143	131	116	101	95
45°	161	160	158	159	160	157	149	137	121	105	99
47.5°	167	167	165	165	167	164	155	142	126	109	102
50°	173	173	171	171	173	169	161	147	130	112	105
52.5°	180	179	177	176	179	175	166	152	134	116	108
55°	185	185	182	182	184	180	171	156	138	118	111
57.5°	191	190	187	186	189	185	175	160	141	121	113
60°	196	195	191	191	193	189	179	164	144	123	115
62.5°	200	199	196	195	198	194	184	168	147	126	117
65°	204	204	200	199	201	197	187	171	150	127	119
67.5°	208	207	203	202	204	201	190	173	152	129	120
70°	211	210	206	205	207	203	193	176	154	130	122
72.5°	213	213	208	207	210	206	195	178	155	131	123
75°	216	215	210	209	212	208	197	179	157	132	123
77.5°	217	217	212	211	214	210	198	181	158	133	124
80°	218	217	213	212	215	211	199	181	158	134	124
82.5°	219	219	214	213	215	212	200	182	159	134	124
85°	219	218	214	213	215	212	200	182	159	134	124
87.5°	220	219	214	213	216	212	200	182	159	134	124
90°	219	218	213	212	215	211	199	181	157	132	123
92.5°	219	218	213	212	215	211	199	181	157	132	123
94°	219	218	213	212	215	211	199	181	157	132	123
95°	219	218	213	212	215	211	199	181	157	133	123
97.5°	219	218	213	212	215	211	199	181	157	133	123
100°	218	217	213	211	214	210	198	181	157	132	123
102.5°	217	216	211	211	213	209	197	180	156	132	123
105°	215	215	210	209	212	207	196	179	156	132	123
107.5°	213	213	208	207	210	206	195	177	155	131	122



TEST NUMBER: G1-1710-337-16

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

CANDELA DISTRIBUTION (continued):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
110°	211	210	206	205	207	203	192	175	153	130	121
112.5°	208	207	203	202	205	201	190	173	151	129	120
115°	204	203	200	199	201	197	187	171	149	127	119
117.5°	201	200	196	196	198	194	184	168	147	125	118
120°	196	196	192	192	194	190	180	165	144	124	116
122.5°	191	191	187	187	189	186	176	161	141	121	114
125°	186	186	183	183	185	181	172	157	138	119	112
127.5°	180	180	177	177	179	176	167	153	135	116	109
130°	174	174	172	172	174	171	162	148	131	113	106
132.5°	168	168	166	166	168	165	156	143	126	110	104
135°	162	161	160	160	162	159	151	138	122	106	100
137.5°	155	155	153	154	155	153	145	132	118	103	97
140°	148	148	146	147	149	146	138	127	113	99	94
142.5°	140	140	139	140	141	139	132	121	107	95	90
145°	133	132	132	133	134	131	124	114	102	90	86
147.5°	124	125	124	125	126	124	117	108	97	86	82
150°	116	116	116	117	118	115	110	101	91	81	77
152.5°	108	108	108	108	110	107	102	94	85	76	73
155°	100	99	99	100	101	99	94	87	79	71	68
157.5°	90	90	90	91	92	90	86	80	73	66	64
160°	81	82	81	82	83	81	78	72	67	61	59
162.5°	73	73	72	73	74	73	70	65	60	56	54
165°	63	64	64	64	65	64	61	58	54	50	49
167.5°	55	55	55	56	56	56	54	51	48	45	44
170°	47	47	48	48	48	48	46	45	42	41	40
172.5°	40	40	40	41	41	40	40	39	37	36	36
175°	34	34	35	35	35	35	34	34	33	32	32
177.5°	31	30	30	31	30	30	30	30	30	30	30
180°	29	29	29	29	29	29	29	29	29	29	29



TEST NUMBER: G1-1710-337-16

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CANDELA DISTRIBUTION (continued):

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	25	25	25	25	25	25	25	25	25	25
2.5°	26	26	26	25	25	25	25	25	25	25
5°	29	28	27	26	25	25	25	24	24	24
7.5°	32	31	29	27	26	25	24	24	24	24
10°	36	34	31	29	27	25	24	24	24	24
12.5°	40	37	34	31	27	25	23	23	23	23
15°	44	41	37	32	28	24	23	22	22	22
17.5°	49	45	39	34	29	24	22	22	22	22
20°	54	49	42	36	30	24	22	21	21	21
22.5°	58	52	45	38	31	24	21	21	20	20
25°	63	56	49	40	31	24	20	20	20	20
27.5°	67	60	51	42	32	24	19	19	19	19
30°	72	63	54	44	33	24	18	18	18	18
32.5°	76	67	57	46	34	24	18	17	17	17
35°	80	70	60	47	35	23	17	16	16	16
37.5°	83	74	62	49	35	23	16	15	15	15
40°	87	77	64	51	36	23	15	14	14	14
42.5°	90	80	67	52	37	22	14	13	13	13
45°	94	83	69	54	37	22	13	12	12	12
47.5°	97	85	71	55	38	22	12	11	11	11
50°	100	88	73	56	38	21	11	10	10	10
52.5°	102	90	74	57	39	21	10	9	9	9
55°	105	92	76	58	39	20	9	8	8	8
57.5°	107	94	77	59	39	20	7	7	7	7
60°	109	95	79	59	39	19	6	6	6	6
62.5°	111	97	80	60	39	18	5	5	5	5
65°	113	98	80	60	39	17	3	3	4	4
67.5°	114	99	81	61	38	16	2	2	2	2
70°	115	100	82	61	38	16	1	1	1	1
72.5°	116	100	82	61	38	15	0	0	0	0
75°	117	101	82	61	38	15	0	0	0	0
77.5°	117	101	82	61	38	14	0	0	0	0
80°	117	101	82	61	37	14	0	0	0	0
82.5°	118	102	82	61	37	14	0	0	0	0
85°	117	102	82	61	37	14	0	0	0	0
87.5°	118	102	83	61	38	14	0	0	0	0
90°	116	101	82	61	37	14	0	0	0	0
92.5°	116	101	82	61	37	14	0	0	0	0
94°	116	101	82	61	37	14	0	0	0	0
95°	116	101	82	60	37	14	0	0	0	0
97.5°	116	101	82	60	37	14	0	0	0	0
100°	116	101	82	60	37	14	0	0	0	0
102.5°	116	101	82	60	37	14	0	0	0	0
105°	116	100	82	61	38	15	0	0	0	0
107.5°	115	100	82	61	38	15	0	0	0	0



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CANDELA DISTRIBUTION (continued):

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
110°	115	100	81	61	39	16	2	1	1	1
112.5°	114	99	81	61	39	18	3	2	2	2
115°	113	98	81	61	39	19	5	4	4	4
117.5°	111	97	80	61	40	19	6	6	6	5
120°	110	96	79	60	40	20	8	7	7	7
122.5°	108	94	78	60	40	21	9	8	8	8
125°	106	93	77	59	40	22	10	10	9	10
127.5°	104	91	76	58	40	22	11	11	11	11
130°	101	89	74	57	40	23	12	12	12	12
132.5°	98	87	72	56	39	23	14	13	13	13
135°	96	84	71	55	39	24	15	14	14	14
137.5°	92	82	69	54	39	24	16	16	15	15
140°	89	79	66	53	38	25	17	17	16	16
142.5°	86	76	64	51	38	25	18	18	18	18
145°	82	73	62	50	37	26	19	19	19	19
147.5°	78	70	59	48	36	26	20	20	20	20
150°	74	66	57	46	36	26	21	21	21	21
152.5°	70	63	54	44	35	27	22	22	22	22
155°	65	59	51	43	34	27	23	23	23	23
157.5°	61	55	48	41	33	27	24	24	23	24
160°	56	51	45	39	33	27	25	24	24	24
162.5°	52	47	42	37	32	27	25	25	25	25
165°	47	44	39	35	31	28	26	26	26	26
167.5°	43	40	37	33	30	28	27	26	26	26
170°	39	37	34	32	30	28	27	27	27	27
172.5°	35	34	32	30	29	28	28	27	27	27
175°	32	31	30	29	29	28	28	28	28	28
177.5°	30	29	29	29	29	28	28	28	28	28
180°	29	29	29	29	29	29	29	29	29	29

(END OF REPORT)