

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: G1-1710-337-8

Luminaire Tested: **B95-HE-BLK-LD4-20W-40-CL-120-EDC1**

Test Date: 11/20/17



Test Information

Test Method: LM-79-08
Report Number: G1-1710-337-8
Test Lab: INNOVATION CENTER(G1)
Test Date: 11/20/17
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: B95-HE-BLK-LD4-20W-40-CL-120-EDC1
Description: VR 2000 BRICK LED WITH CLEAR LENS & HORIZONTAL EYELID FLAT BLACK.
Light Source: (56) NICHIA 4000K LEDS
1FS402256M8404
Ballast/Driver: (1) OSRAM ELECTRONIC DRIVER @ 400mA
OT25UNVDIM1F0400

Summary

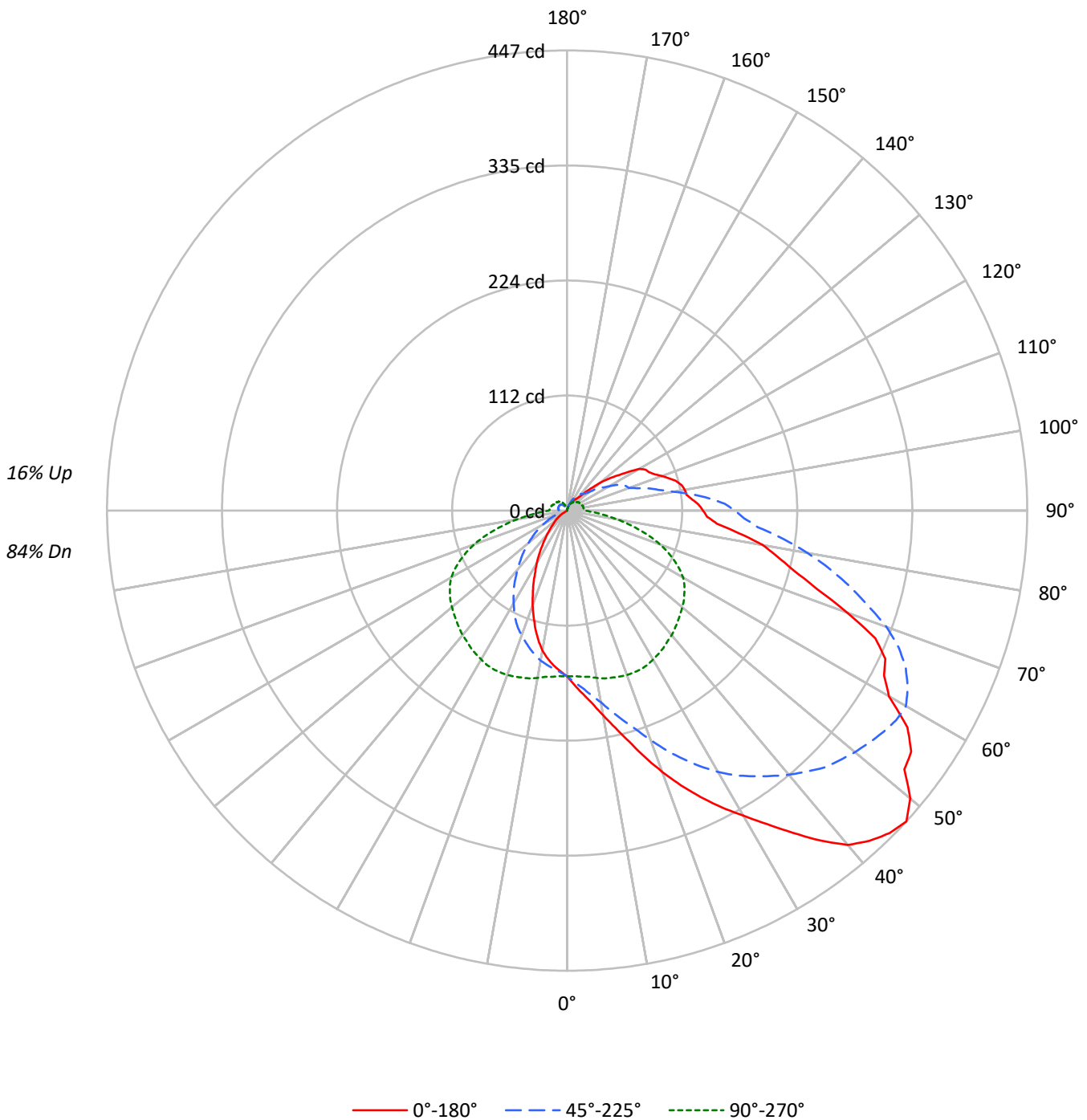
Lumens per Lamp: N/A
Luminaire Lumens: 1179.9 lumens
Efficiency: N/A
Efficacy: 61.8 lumens/watt
Spacing Criteria (0/90/45): 2.02 / 1.53 / 2.01
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 0.29' x H: 0.35')
CIE Type: Semi-Direct

Input Watts (W): 19.1
Input Voltage (V): 120.0
Input Current (Ain): 0.159
Voltage Rise (V): NR
Power Factor: 0.9867
Total Harmonic Distortion (THDi): 10.3%
Frequency (hertz): 60
Stabilization Time: 0.5 HR
Operation Time: 7.0 HR
Ambient Temperature (°C): 25.2
Test Distance: 25 FT

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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	115	115	115	115	111	111	111	111	102	102	102	95	95	95	88	88	88	84
1	101	95	89	84	97	91	86	81	84	80	76	77	74	71	71	68	66	63
2	90	80	72	65	86	77	69	63	71	64	59	65	60	55	60	55	52	48
3	81	69	59	52	77	66	57	50	60	53	47	56	49	44	51	46	42	38
4	73	60	50	42	70	57	48	41	53	45	39	48	42	36	44	39	34	31
5	67	52	42	35	63	50	41	34	46	38	32	43	36	30	39	33	29	26
6	61	47	37	30	58	45	36	29	41	33	27	38	31	26	35	29	24	22
7	56	42	32	26	54	40	31	25	37	29	24	34	28	22	32	26	21	19
8	52	38	29	22	50	36	28	22	34	26	21	31	24	20	29	23	19	16
9	49	34	26	20	46	33	25	19	31	23	18	28	22	17	26	21	16	14
10	45	31	23	17	43	30	22	17	28	21	16	26	20	15	24	19	15	13

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	8913	8913	8913
5°	8992	8602	7585
10°	9352	8480	6389
15°	10032	8428	5146
20°	11031	8392	4004
25°	11972	8322	3003
30°	12851	8169	2217
35°	13952	8029	1571
40°	15176	7897	1074
45°	15662	7771	707
50°	15309	7699	493
55°	14402	7628	282
60°	12880	7496	71
65°	12393	7041	0
70°	10787	6317	0
75°	8854	5235	0
80°	7801	3972	0
85°	6232	2694	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	15.7	1.3
10°-20°	49.4	4.2
20°-30°	86.4	7.3
30°-40°	123.5	10.5
40°-50°	156.7	13.3
50°-60°	172.1	14.6
60°-70°	165.9	14.1
70°-80°	133.8	11.3
80°-90°	91.6	7.8
90°-100°	64.9	5.5
100°-110°	44.7	3.8
110°-120°	32.0	2.7
120°-130°	20.9	1.8
130°-140°	11.6	1.0
140°-150°	6.6	0.6
150°-160°	3.1	0.3
160°-170°	0.8	0.1
170°-180°	0.0	0.0
0°-30°	151.6	12.8
0°-40°	275.1	23.3
0°-60°	603.9	51.2
0°-90°	995.2	84.3
90°-120°	141.6	12.0
90°-150°	180.7	15.3
90°-180°	185.0	15.7
0°-180°	1179.9	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	161	161	161	161	161	
5°	179	173	162	154	151	18
15°	232	211	168	139	119	67
25°	307	266	170	118	77	143
35°	382	315	163	90	43	241
45°	443	353	152	62	20	340
55°	408	375	139	38	8	361
65°	341	363	115	18	0	331
75°	229	284	73	8	0	247
85°	146	186	30	8	0	130
90°	132	163	18	8	0	72
95°	122	138	17	8	0	98
105°	110	83	16	9	0	115
115°	88	60	14	9	0	88
125°	59	37	14	9	0	54
135°	25	23	12	8	0	21
145°	13	18	10	7	0	8
155°	8	11	7	4	0	4
165°	4	4	3	1	0	1
175°	1	0	0	0	0	0
180°	0	0	0	0	0	



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CATALOG NUMBER: B95-HE-BLK-LD4-20W-40-CL-120-EDC1

CANDELA DISTRIBUTION (FULL):

	0°	3°	5°	15°	25°	35°	45°	55°	65°	75°	85°
0°	161	161	161	161	161	161	161	161	161	161	161
2.5°	170	168	169	169	168	168	167	166	164	164	162
5°	179	177	177	177	176	174	173	171	168	166	163
7.5°	189	187	189	188	186	184	181	177	173	169	165
10°	202	200	200	200	197	194	189	184	179	173	167
12.5°	216	215	215	214	211	206	200	192	185	177	170
15°	232	231	232	230	226	218	211	201	191	181	172
17.5°	251	248	249	249	243	234	223	211	198	185	174
20°	270	267	268	266	260	251	237	221	205	189	176
22.5°	289	286	287	284	276	267	252	233	213	193	177
25°	307	304	304	302	295	283	266	245	221	197	178
27.5°	325	321	323	318	311	300	280	257	229	201	178
30°	342	340	340	336	326	311	293	268	236	204	177
32.5°	361	359	360	353	343	325	305	277	243	207	176
35°	382	378	379	372	360	339	315	286	249	210	176
37.5°	404	398	400	391	376	353	325	295	255	212	174
40°	424	421	422	412	394	367	335	300	262	215	173
42.5°	435	433	435	427	410	378	344	308	267	217	172
45°	443	440	442	434	420	391	353	314	273	221	171
47.5°	447	445	446	441	425	397	359	319	276	222	169
50°	435	431	433	439	427	400	365	323	277	224	167
52.5°	413	408	411	416	426	402	370	327	279	225	165
55°	408	405	407	403	407	405	375	333	280	226	163
57.5°	392	392	395	400	391	401	379	339	285	227	161
60°	361	361	366	381	385	382	380	342	288	227	157
62.5°	347	345	346	349	370	366	373	339	287	223	151
65°	341	337	339	339	348	361	363	338	285	216	144
67.5°	324	322	325	328	333	349	349	337	283	209	135
70°	289	290	294	309	316	324	330	329	277	202	124
72.5°	255	255	256	276	292	294	306	311	267	190	113
75°	229	229	230	248	274	271	284	288	251	176	101
77.5°	210	209	211	225	250	255	261	266	234	161	87
80°	193	192	195	208	222	237	237	242	218	146	74
82.5°	168	169	171	188	198	214	212	217	199	131	61
85°	146	144	147	168	177	188	186	192	175	112	49
87.5°	136	135	137	152	168	172	172	172	152	94	38
90°	132	132	133	146	164	165	163	158	136	80	29
92.5°	128	128	130	142	157	157	153	144	119	69	26
95°	122	122	124	136	145	145	138	125	101	59	25
97.5°	117	117	119	127	130	129	122	108	86	55	24
100°	116	115	116	118	117	113	105	93	78	52	23
102.5°	114	113	113	111	108	101	92	82	71	48	22
105°	110	109	108	104	98	90	83	76	65	45	21
107.5°	104	103	102	93	86	77	72	68	59	41	20
110°	98	96	96	86	76	68	64	61	54	37	19



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CATALOG NUMBER: B95-HE-BLK-LD4-20W-40-CL-120-EDC1

CANDELA DISTRIBUTION (continued):

	0°	3°	5°	15°	25°	35°	45°	55°	65°	75°	85°
112.5°	92	90	90	83	72	64	62	58	50	35	18
115°	88	87	87	82	70	62	60	56	48	33	18
117.5°	86	86	85	79	65	56	54	50	43	30	17
120°	81	80	80	72	58	50	47	44	38	27	16
122.5°	69	69	69	65	53	44	42	40	35	25	16
125°	59	58	59	57	49	40	37	35	31	23	15
127.5°	51	50	50	49	44	36	33	31	28	21	14
130°	42	42	42	41	38	32	28	27	25	19	14
132.5°	33	33	33	33	32	28	25	24	22	18	13
135°	25	25	25	26	26	25	23	23	21	17	13
137.5°	19	19	20	21	22	23	22	22	20	16	12
140°	16	16	16	17	19	20	21	20	18	15	12
142.5°	14	14	14	15	17	18	20	19	17	14	11
145°	13	13	13	14	16	17	18	18	16	13	10
147.5°	11	11	12	13	14	16	17	16	14	12	10
150°	10	10	10	12	13	14	15	14	13	10	9
152.5°	9	9	9	10	12	13	13	12	11	9	8
155°	8	8	8	9	10	11	11	11	9	8	7
157.5°	7	7	7	8	9	9	9	9	8	7	6
160°	6	6	6	7	7	7	7	7	6	5	5
162.5°	5	5	5	6	6	6	6	5	5	4	4
165°	4	4	4	4	5	4	4	4	4	3	3
167.5°	3	3	3	3	3	3	3	3	3	2	2
170°	2	2	2	2	2	2	2	2	2	1	1
172.5°	1	1	1	1	1	1	1	1	1	1	1
175°	1	1	1	1	0	0	0	0	0	0	0
177.5°	0	0	0	0	0	0	0	0	0	0	0
180°	0	0	0	0	0	0	0	0	0	0	0



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CATALOG NUMBER: B95-HE-BLK-LD4-20W-40-CL-120-EDC1

CANDELA DISTRIBUTION (continued):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	161	161	161	161	161	161	161	161	161	161	161
2.5°	161	161	160	159	158	157	156	156	156	156	156
5°	162	161	159	157	155	154	153	152	151	150	151
7.5°	163	162	159	156	154	151	149	147	146	145	145
10°	165	163	159	155	151	148	144	141	139	137	138
12.5°	167	164	159	154	149	144	139	134	130	129	129
15°	168	164	159	153	147	139	132	126	122	119	119
17.5°	169	165	158	152	144	134	126	118	112	109	108
20°	170	165	158	150	141	129	119	109	101	98	98
22.5°	170	165	157	148	137	124	111	99	91	88	87
25°	170	164	156	146	133	118	103	90	81	78	77
27.5°	169	162	153	143	129	111	94	81	72	68	67
30°	167	160	151	140	123	104	86	72	63	59	59
32.5°	165	157	148	136	118	97	78	64	55	52	51
35°	163	154	144	131	111	90	71	57	48	44	43
37.5°	160	151	140	127	105	82	64	50	41	37	36
40°	158	148	137	121	98	75	57	43	34	30	30
42.5°	155	144	132	116	92	68	50	37	28	25	25
45°	152	140	128	110	85	62	44	31	23	21	20
47.5°	149	137	122	104	78	55	38	26	19	17	17
50°	146	132	117	98	71	49	33	21	16	14	14
52.5°	143	129	112	92	65	43	28	17	13	11	11
55°	139	124	106	85	59	38	23	14	9	8	8
57.5°	135	118	99	78	53	32	19	10	6	5	4
60°	130	113	92	71	46	27	15	7	3	2	2
62.5°	123	106	85	64	40	22	11	4	1	0	0
65°	115	98	76	56	33	18	8	2	0	0	0
67.5°	106	89	67	48	26	14	6	1	0	0	0
70°	96	80	58	40	21	10	4	1	0	0	0
72.5°	85	69	49	31	16	9	4	1	0	0	0
75°	73	59	40	24	13	8	4	1	0	0	0
77.5°	61	48	32	19	13	8	4	1	0	0	0
80°	50	39	25	17	13	8	4	1	0	0	0
82.5°	39	30	20	16	13	8	4	1	0	0	0
85°	30	23	19	16	12	8	4	1	0	0	0
87.5°	22	19	18	16	12	8	4	1	0	0	0
90°	18	18	18	16	12	8	4	1	0	0	0
92.5°	17	17	17	15	12	8	4	1	0	0	0
95°	17	17	17	15	13	8	4	2	0	0	0
97.5°	16	17	17	15	13	9	4	1	0	0	0
100°	16	17	17	15	13	9	4	1	0	0	0
102.5°	16	16	17	15	13	9	4	2	0	0	0
105°	16	16	16	15	13	9	4	2	0	0	0
107.5°	16	16	16	15	12	9	5	1	0	0	0
110°	15	16	16	15	12	9	5	2	0	0	0



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CATALOG NUMBER: B95-HE-BLK-LD4-20W-40-CL-120-EDC1

CANDELA DISTRIBUTION (continued):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
112.5°	15	15	16	15	12	9	5	2	0	0	0
115°	14	15	16	15	12	9	5	2	0	0	0
117.5°	14	15	15	15	12	9	5	2	0	0	0
120°	14	15	15	14	12	9	5	2	0	0	0
122.5°	14	14	15	14	12	9	5	2	0	0	0
125°	14	14	15	14	12	9	5	2	0	0	0
127.5°	13	14	15	14	11	9	5	2	0	0	0
130°	13	14	14	14	11	9	5	2	0	0	0
132.5°	12	13	14	13	11	8	5	2	0	0	0
135°	12	13	14	13	11	8	5	2	0	0	0
137.5°	12	12	13	12	11	8	5	2	0	0	0
140°	11	12	13	12	10	7	5	2	0	0	0
142.5°	11	11	12	12	10	7	4	1	0	0	0
145°	10	10	11	11	9	7	4	1	0	0	0
147.5°	9	10	10	10	8	6	4	1	0	0	0
150°	9	9	9	9	7	5	3	1	0	0	0
152.5°	8	8	8	8	7	5	3	1	0	0	0
155°	7	7	7	7	6	4	3	1	0	0	0
157.5°	6	6	6	6	5	4	2	1	0	0	0
160°	5	5	5	5	4	3	2	0	0	0	0
162.5°	4	4	4	4	3	2	1	0	0	0	0
165°	3	3	3	3	2	1	1	0	0	0	0
167.5°	2	2	2	2	1	1	0	0	0	0	0
170°	1	1	1	1	1	0	0	0	0	0	0
172.5°	1	1	1	1	0	0	0	0	0	0	0
175°	0	0	0	0	0	0	0	0	0	0	0
177.5°	0	0	0	0	0	0	0	0	0	0	0
180°	0	0	0	0	0	0	0	0	0	0	0

(END OF REPORT)