

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: P29168

Luminaire Tested: **H12-LD4-10W-40-CLR-EDC1**

Test Date: 12/21/16



Test Information

Test Method: LM-79-08
Report Number: P29168
Test Lab: INNOVATION CENTER-P2
Test Date: 12/21/16
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: H12-LD4-10W-40-CLR-EDC1
Description: H12 LED FIXTURE WITH CLEAR LENS
Light Source: (56) NICHIA 4000K LEDS
1FS402256M8404
Ballast/Driver: (1) OSRAM ELECTRONIC DRIVER (200mA)
OT25W-UNV-1250C

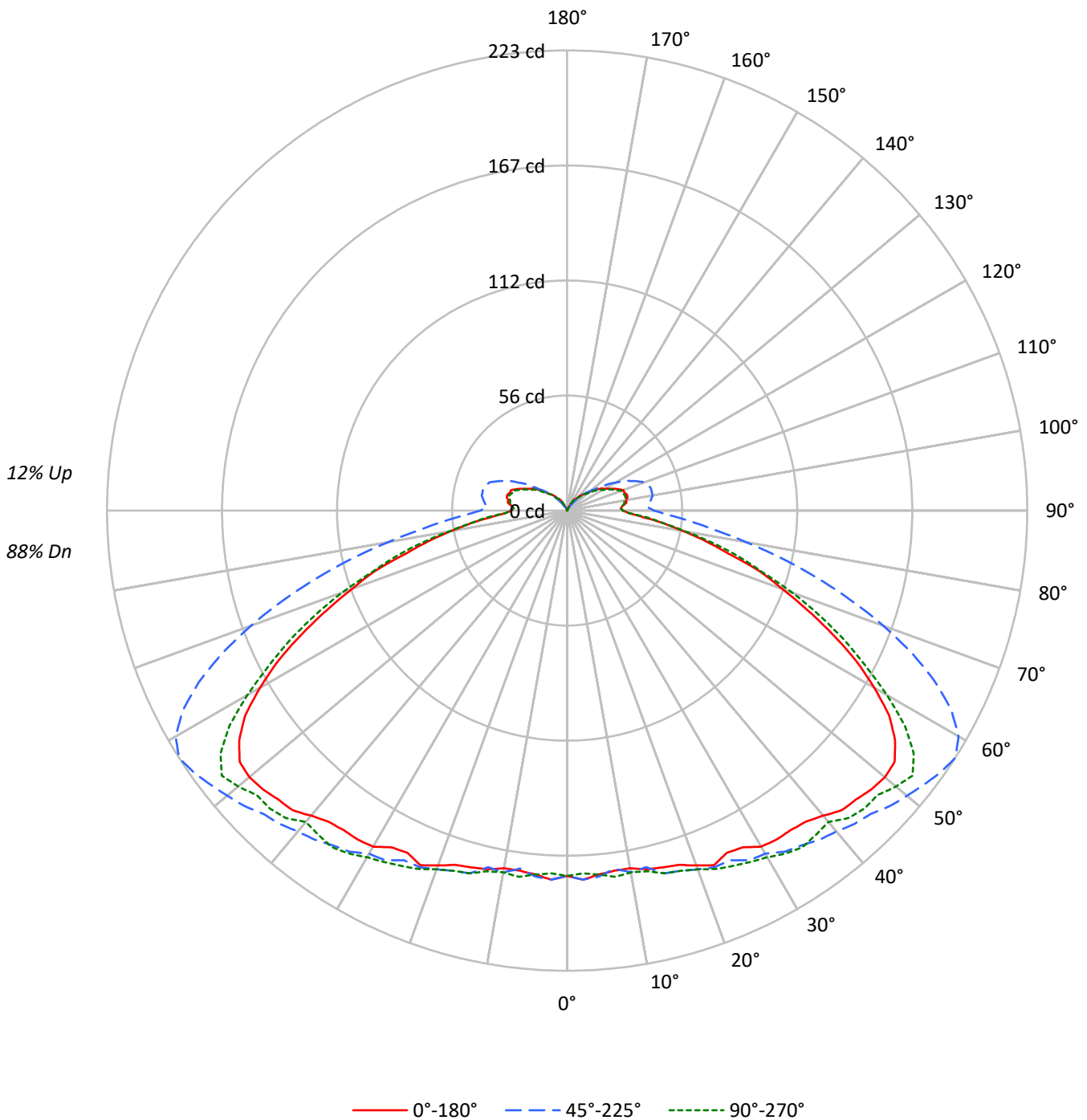
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1103.9 lumens
Efficiency: N/A
Efficacy: 109.3 lumens/watt
Spacing Criteria (0/90/45): 1.65 / 1.68 / 1.96
Luminous Opening: Rectangular w/ Sides (W: 0.83' x L: 0.83' x H: 0.42')
CIE Type: Semi-Direct

Input Watts (W): 10.1
Input Voltage (V): 120.1
Input Current (A_{in}): 0.0850
Voltage Rise (V): NR
Power Factor: 0.9931
Total Harmonic Distortion (THDi): 7.29%
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): 25.1
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	50	30	10	0	
RCR																						
0	116	116	116	116	112	112	112	112	104	104	104	97	97	97	91	91	91	88				
1	103	97	92	87	99	94	89	85	87	83	80	81	78	75	76	73	71	68				
2	92	82	74	67	88	79	72	66	74	68	62	68	63	59	64	60	56	53				
3	83	71	61	54	79	68	59	52	63	56	50	59	53	47	55	49	45	42				
4	75	61	51	44	71	59	50	43	55	47	41	51	44	39	47	42	37	34				
5	68	54	44	36	65	52	43	36	48	40	34	45	38	33	42	36	31	29				
6	62	48	38	31	59	46	37	30	43	35	29	40	33	28	37	31	27	24				
7	57	43	33	27	55	41	32	26	39	31	25	36	29	24	34	28	23	21				
8	53	39	29	23	51	37	29	23	35	27	22	33	26	21	31	25	20	18				
9	49	35	26	20	47	34	26	20	32	24	19	30	23	18	28	22	18	16				
10	46	32	24	18	44	31	23	18	29	22	17	27	21	16	26	20	16	14				

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2744	2744	2744
5°	2639	2608	2639
10°	2546	2491	2575
15°	2533	2455	2575
20°	2554	2427	2582
25°	2538	2405	2635
30°	2611	2440	2694
35°	2649	2506	2789
40°	2751	2578	2808
45°	2893	2671	2981
50°	3037	2814	3143
55°	3059	2971	3232
60°	2857	3052	2974
65°	2513	2871	2619
70°	2119	2510	2215
75°	1693	2057	1797
80°	1326	1568	1350
85°	980	1175	1033



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	17.0	1.5
10°-20°	51.3	4.6
20°-30°	87.0	7.9
30°-40°	123.0	11.1
40°-50°	159.1	14.4
50°-60°	189.1	17.1
60°-70°	171.5	15.5
70°-80°	115.1	10.4
80°-90°	58.0	5.3
90°-100°	37.7	3.4
100°-110°	37.7	3.4
110°-120°	28.7	2.6
120°-130°	16.7	1.5
130°-140°	8.1	0.7
140°-150°	3.3	0.3
150°-160°	0.5	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	155.3	14.1
0°-40°	278.3	25.2
0°-60°	626.5	56.8
0°-90°	971.2	88.0
90°-120°	104.2	9.4
90°-150°	132.2	12.0
90°-180°	133.0	12.0
0°-180°	1103.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	177	177	177	177	177	
5°	177	178	178	179	177	17
15°	179	181	182	182	182	51
25°	183	187	187	189	190	85
35°	189	194	198	196	199	119
45°	198	206	208	206	204	153
55°	194	212	221	221	205	171
65°	142	173	197	179	148	140
75°	81	110	125	113	86	88
85°	37	54	60	54	39	35
90°	27	36	42	36	27	15
95°	27	35	40	35	27	23
105°	30	37	42	36	29	31
115°	25	29	34	28	24	25
125°	18	18	20	18	17	16
135°	11	9	11	9	11	9
145°	7	5	4	5	7	4
155°	2	0	0	0	2	1
165°	0	0	0	0	0	0
175°	0	0	0	0	0	0
180°	0	0	0	0	0	0



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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	58°	65°	75°	85°
0°	177	177	177	177	177	177	177	177	177	177	177
2.5°	179	177	179	178	181	179	180	179	179	177	175
5°	177	176	179	178	180	178	177	177	179	178	176
7.5°	176	178	180	179	177	175	179	178	179	179	179
10°	176	176	178	176	175	178	178	176	179	178	181
12.5°	178	177	177	177	177	177	180	180	180	179	181
15°	179	177	177	182	180	182	179	179	182	182	183
17.5°	180	179	180	183	181	183	183	181	185	185	186
20°	183	183	182	184	184	185	185	185	185	186	187
22.5°	186	185	183	185	184	187	189	186	186	188	190
25°	183	185	183	188	186	187	190	189	189	189	192
27.5°	184	184	185	190	190	191	192	191	190	191	193
30°	188	188	188	191	191	192	194	192	192	194	196
32.5°	189	190	189	195	194	196	193	195	196	196	197
35°	189	190	190	196	197	198	198	198	197	195	198
37.5°	190	192	193	199	200	201	201	201	197	197	196
40°	193	194	196	201	204	203	202	204	199	197	197
42.5°	197	197	199	205	206	206	205	206	202	200	200
45°	198	198	201	208	208	208	208	208	207	204	203
47.5°	200	199	204	211	211	212	213	214	211	208	205
50°	201	200	206	213	214	215	218	222	215	212	210
52.5°	200	197	207	214	217	218	222	227	222	218	213
55°	194	193	205	214	219	221	225	234	223	215	207
57.5°	185	185	198	210	219	223	224	231	219	206	196
60°	172	173	186	201	213	219	217	223	211	195	181
62.5°	158	160	175	191	204	210	206	211	200	180	166
65°	142	145	162	177	190	197	193	196	183	167	152
67.5°	126	130	148	163	175	181	177	177	168	154	137
70°	111	115	132	147	157	163	161	162	151	136	119
72.5°	98	101	118	131	140	144	141	141	132	120	103
75°	81	86	102	113	122	125	122	123	116	103	88
77.5°	69	71	87	98	104	106	104	105	99	88	74
80°	57	59	73	82	88	88	86	88	83	74	61
82.5°	47	49	61	68	72	72	71	74	68	61	50
85°	37	40	49	55	59	60	58	60	56	49	40
87.5°	30	32	38	44	47	49	47	49	44	38	32
90°	27	28	32	37	40	42	40	41	37	32	28
92.5°	26	26	30	35	37	39	38	38	35	30	26
95°	27	28	32	36	39	40	39	39	36	31	27
97.5°	29	29	33	38	40	41	40	40	37	32	28
100°	29	30	34	38	41	42	41	40	38	33	29
102.5°	30	30	34	38	41	42	41	40	38	33	29
105°	30	30	34	38	41	42	41	40	37	33	29
107.5°	29	29	33	37	40	41	40	39	36	32	29
110°	29	29	31	35	38	40	38	38	35	31	28



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CANDELA DISTRIBUTION (continued):

	0°	5°	15°	25°	35°	45°	55°	58°	65°	75°	85°
112.5°	27	27	29	33	36	37	36	35	32	28	27
115°	25	25	27	30	33	34	32	32	29	26	25
117.5°	23	23	24	27	30	31	29	29	26	23	22
120°	21	21	22	24	26	27	26	26	24	21	21
122.5°	20	19	19	21	23	24	23	23	21	19	19
125°	18	18	17	19	20	20	20	20	18	17	17
127.5°	16	16	15	16	17	17	17	17	15	15	15
130°	14	14	13	13	14	15	14	14	13	13	13
132.5°	12	12	12	11	12	13	12	12	11	11	12
135°	11	11	10	9	11	11	10	10	9	10	11
137.5°	10	10	9	8	9	9	9	8	8	9	10
140°	9	9	8	7	7	7	7	7	7	8	8
142.5°	7	7	7	6	5	5	5	5	6	7	7
145°	7	7	6	5	4	4	4	4	5	6	6
147.5°	6	5	5	4	3	2	3	3	4	5	5
150°	4	4	4	3	2	0	2	2	3	4	4
152.5°	3	3	3	2	0	0	0	1	2	3	3
155°	2	2	1	0	0	0	0	0	0	1	2
157.5°	0	0	0	0	0	0	0	0	0	0	0
160°	0	0	0	0	0	0	0	0	0	0	0
162.5°	0	0	0	0	0	0	0	0	0	0	0
165°	0	0	0	0	0	0	0	0	0	0	0
167.5°	0	0	0	0	0	0	0	0	0	0	0
170°	0	0	0	0	0	0	0	0	0	0	0
172.5°	0	0	0	0	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



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CATALOG NUMBER: H12-LD4-10W-40-CLR-EDC1

CANDELA DISTRIBUTION (continued):

	90°
0°	177
2.5°	176
5°	177
7.5°	179
10°	178
12.5°	179
15°	182
17.5°	183
20°	185
22.5°	188
25°	190
27.5°	192
30°	194
32.5°	197
35°	199
37.5°	198
40°	197
42.5°	202
45°	204
47.5°	204
50°	208
52.5°	211
55°	205
57.5°	194
60°	179
62.5°	163
65°	148
67.5°	132
70°	116
72.5°	99
75°	86
77.5°	72
80°	58
82.5°	47
85°	39
87.5°	30
90°	27
92.5°	26
95°	27
97.5°	28
100°	28
102.5°	29
105°	29
107.5°	28
110°	28



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CANDELA DISTRIBUTION (continued):

	90°
112.5°	26
115°	24
117.5°	22
120°	20
122.5°	19
125°	17
127.5°	15
130°	13
132.5°	12
135°	11
137.5°	9
140°	8
142.5°	7
145°	7
147.5°	6
150°	5
152.5°	3
155°	2
157.5°	0
160°	0
162.5°	0
165°	0
167.5°	0
170°	0
172.5°	0
175°	0
177.5°	0
180°	0

(END OF REPORT)