

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: P29171

Luminaire Tested: **H12-LD4-25W-40-CLR-EDC1**

Test Date: 12/20/16



**Test Information**

Test Method: LM-79-08  
Report Number: P29171  
Test Lab: INNOVATION CENTER-P2  
Test Date: 12/20/16  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: FAIL-SAFE  
Catalog Number: H12-LD4-25W-40-CLR-EDC1  
Description: H12 LED FIXTURE WITH CLEAR LENS  
Light Source: (56) NICHIA 4000K LEDS  
1FS402256M8404  
Ballast/Driver: (1) OSRAM ELECTRONIC DRIVER (500mA)  
OT40W-UNV-1250C

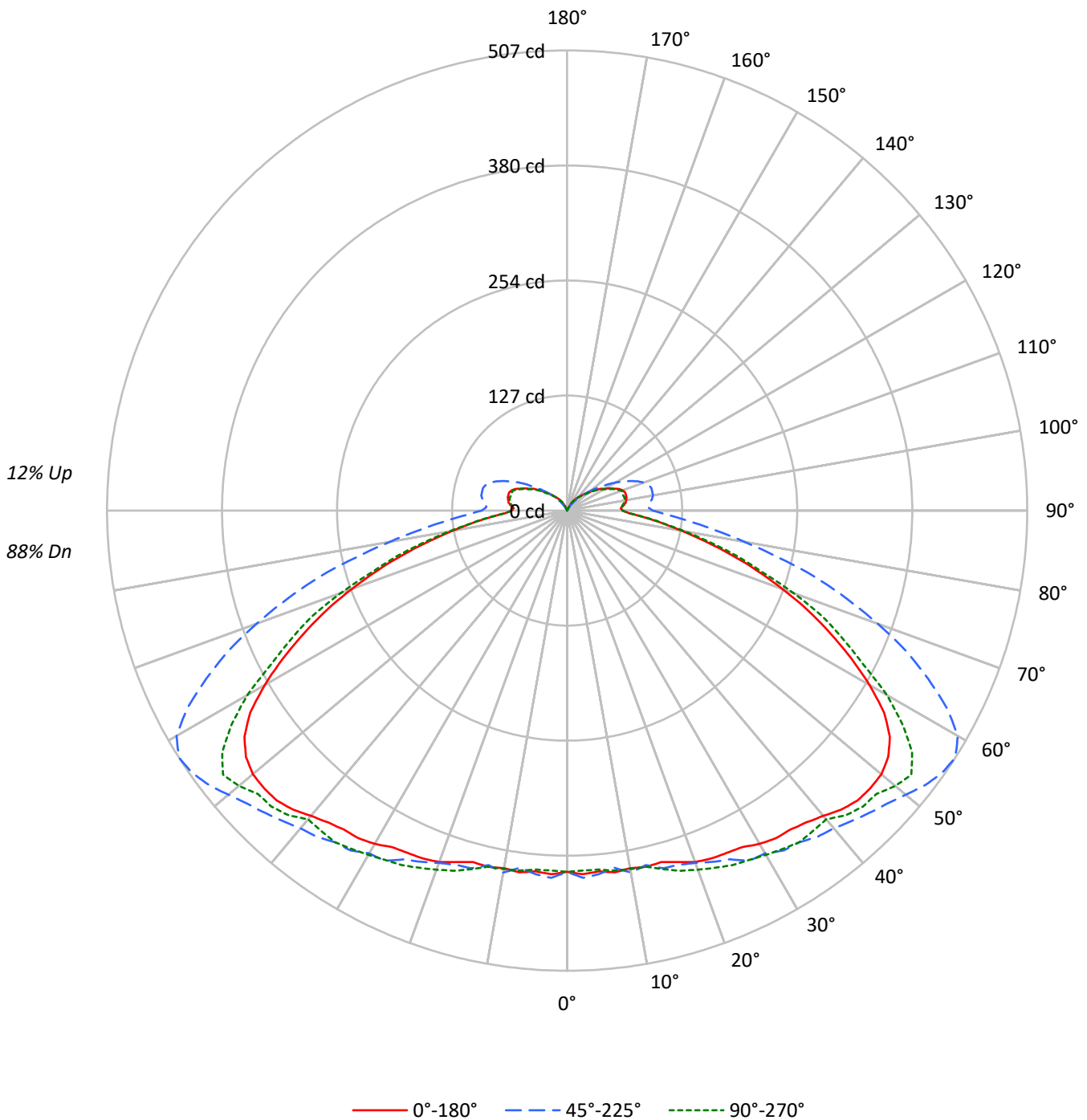
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2492.9 lumens  
Efficiency: N/A  
Efficacy: 103.9 lumens/watt  
Spacing Criteria (0/90/45): 1.67 / 1.68 / 1.98  
Luminous Opening: Rectangular w/ Sides (W: 0.83' x L: 0.83' x H: 0.83')  
CIE Type: Semi-Direct

Input Watts (W): 24  
Input Voltage (V): 120.1  
Input Current (A<sub>in</sub>): 0.201  
Voltage Rise (V): NR  
Power Factor: 0.9981  
Total Harmonic Distortion (THDi): 6.70%  
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	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		54	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°	6169	6169	6169
5°	5709	5566	5680
10°	5352	5102	5365
15°	5075	4748	5176
20°	4982	4497	5091
25°	4852	4370	5027
30°	4811	4296	4970
35°	4774	4240	4964
40°	4830	4229	4885
45°	4954	4277	5053
50°	4973	4373	5193
55°	4830	4510	5164
60°	4369	4466	4618
65°	3732	3992	3919
70°	3047	3377	3205
75°	2354	2700	2455
80°	1713	1959	1753
85°	1216	1399	1245



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	38.4	1.5
10°-20°	115.7	4.6
20°-30°	196.7	7.9
30°-40°	277.8	11.1
40°-50°	359.9	14.4
50°-60°	427.4	17.1
60°-70°	386.0	15.5
70°-80°	259.2	10.4
80°-90°	130.6	5.2
90°-100°	85.7	3.4
100°-110°	85.4	3.4
110°-120°	65.2	2.6
120°-130°	37.9	1.5
130°-140°	18.4	0.7
140°-150°	7.5	0.3
150°-160°	1.1	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	350.8	14.1
0°-40°	628.6	25.2
0°-60°	1415.9	56.8
0°-90°	2191.7	87.9
90°-120°	236.3	9.5
90°-150°	300.1	12.0
90°-180°	301.0	12.1
0°-180°	2492.9	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	398	398	398	398	398	
5°	399	401	402	403	397	38
15°	401	405	408	410	409	115
25°	416	421	424	429	431	193
35°	429	438	446	445	446	271
45°	452	465	471	466	461	348
55°	434	476	504	500	464	384
65°	320	392	439	400	336	316
75°	186	250	283	253	194	198
85°	85	121	135	121	87	78
90°	61	80	94	80	61	34
95°	62	80	91	78	61	52
105°	67	83	96	82	64	70
115°	57	66	77	65	56	57
125°	40	42	46	40	39	36
135°	25	22	24	22	24	19
145°	15	12	9	12	15	9
155°	4	1	0	0	3	2
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°	57°	65°	75°	85°
0°	398	398	398	398	398	398	398	398	398	398	398
2.5°	401	401	401	402	404	405	406	406	404	400	397
5°	399	399	399	402	404	402	399	399	402	405	399
7.5°	402	403	404	404	400	397	404	406	404	407	404
10°	400	400	400	396	398	405	401	400	404	402	406
12.5°	402	402	398	397	403	400	407	409	404	406	409
15°	401	401	399	407	404	408	405	408	410	412	415
17.5°	406	406	406	409	407	409	412	413	417	417	421
20°	412	412	411	411	415	413	415	419	418	421	425
22.5°	415	416	412	415	416	419	422	424	421	426	428
25°	416	417	417	422	422	424	428	434	429	429	433
27.5°	418	419	422	425	429	435	431	435	432	433	435
30°	424	425	426	428	434	436	438	442	433	441	439
32.5°	428	429	429	434	440	444	439	445	442	442	442
35°	429	430	433	439	446	446	448	452	446	441	445
37.5°	433	434	439	445	453	453	451	457	444	445	444
40°	439	440	444	451	459	457	454	460	449	448	444
42.5°	447	447	451	459	464	464	459	465	458	451	455
45°	452	451	459	467	470	471	468	477	468	462	459
47.5°	453	453	462	475	478	478	482	490	479	471	462
50°	452	453	464	481	486	487	492	501	489	478	472
52.5°	446	447	463	483	493	497	504	511	502	493	480
55°	434	437	457	482	496	504	513	522	505	487	468
57.5°	414	418	444	476	494	507	509	516	494	467	443
60°	385	390	420	457	482	497	494	499	475	442	411
62.5°	353	359	394	433	459	472	466	470	444	407	372
65°	320	327	365	401	427	439	434	438	409	373	343
67.5°	287	294	333	370	392	404	396	399	376	347	309
70°	252	260	301	334	354	364	359	364	341	309	271
72.5°	219	226	265	298	315	323	317	321	300	270	231
75°	186	192	227	257	274	283	276	280	260	233	200
77.5°	155	161	193	219	233	238	234	238	222	198	167
80°	128	133	163	185	195	198	195	199	185	167	136
82.5°	105	110	135	152	161	164	161	165	153	138	111
85°	85	90	111	124	133	135	133	135	124	112	91
87.5°	68	72	87	98	107	111	108	109	99	87	72
90°	61	63	73	83	91	94	91	93	83	73	63
92.5°	59	60	69	79	86	89	86	87	79	69	60
95°	62	63	72	82	88	91	89	90	81	71	62
97.5°	65	66	75	85	91	94	91	92	84	74	64
100°	66	67	77	86	93	96	92	93	85	75	65
102.5°	67	68	77	86	93	96	93	93	85	75	65
105°	67	67	76	85	92	96	92	91	84	74	65
107.5°	67	67	74	84	91	94	90	90	83	72	65
110°	65	65	71	80	87	90	86	86	79	69	64



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	15°	25°	35°	45°	55°	57°	65°	75°	85°
112.5°	62	62	66	74	81	84	81	81	73	64	60
115°	57	58	60	68	74	77	73	74	67	59	56
117.5°	53	53	54	61	67	69	66	67	60	52	51
120°	48	49	49	55	60	62	59	60	54	47	47
122.5°	45	45	44	48	53	54	52	53	47	42	43
125°	40	40	40	42	45	46	45	46	41	38	39
127.5°	36	36	35	36	39	40	38	39	35	33	34
130°	31	31	30	31	33	34	32	33	29	29	30
132.5°	28	28	27	26	28	29	27	28	25	25	27
135°	25	25	24	21	23	24	23	23	21	23	24
137.5°	22	22	21	18	20	20	19	19	18	20	21
140°	19	19	18	16	16	17	15	15	16	18	19
142.5°	17	17	16	14	12	13	11	12	14	16	17
145°	15	15	14	12	8	9	9	9	12	14	15
147.5°	12	12	11	9	6	4	6	7	9	11	12
150°	10	9	9	7	4	0	4	4	7	9	9
152.5°	7	7	6	4	0	0	0	1	4	6	7
155°	4	4	3	0	0	0	0	0	0	2	3
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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**CANDELA DISTRIBUTION (continued):**

	90°
0°	398
2.5°	397
5°	397
7.5°	400
10°	401
12.5°	402
15°	409
17.5°	416
20°	421
22.5°	426
25°	431
27.5°	434
30°	438
32.5°	442
35°	446
37.5°	445
40°	444
42.5°	455
45°	461
47.5°	462
50°	472
52.5°	478
55°	464
57.5°	438
60°	407
62.5°	368
65°	336
67.5°	304
70°	265
72.5°	225
75°	194
77.5°	161
80°	131
82.5°	106
85°	87
87.5°	68
90°	61
92.5°	59
95°	61
97.5°	63
100°	64
102.5°	65
105°	64
107.5°	64
110°	64





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**CANDELA DISTRIBUTION (continued):**

	90°
112.5°	60
115°	56
117.5°	51
120°	47
122.5°	43
125°	39
127.5°	34
130°	30
132.5°	27
135°	24
137.5°	21
140°	19
142.5°	17
145°	15
147.5°	12
150°	10
152.5°	7
155°	3
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)