

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: P29164

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

Test Date: 12/20/16



Test Information

Test Method: LM-79-08
Report Number: P29164
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-OPL-EDC1
Description: H12 LED FIXTURE WITH OPAL LENS
Light Source: (56) NICHIA 4000K LEDS
1FS402256M8404
Ballast/Driver: (1) OSRAM ELECTRONIC DRIVER (500mA)
OT40W-UNV-1250C

Summary

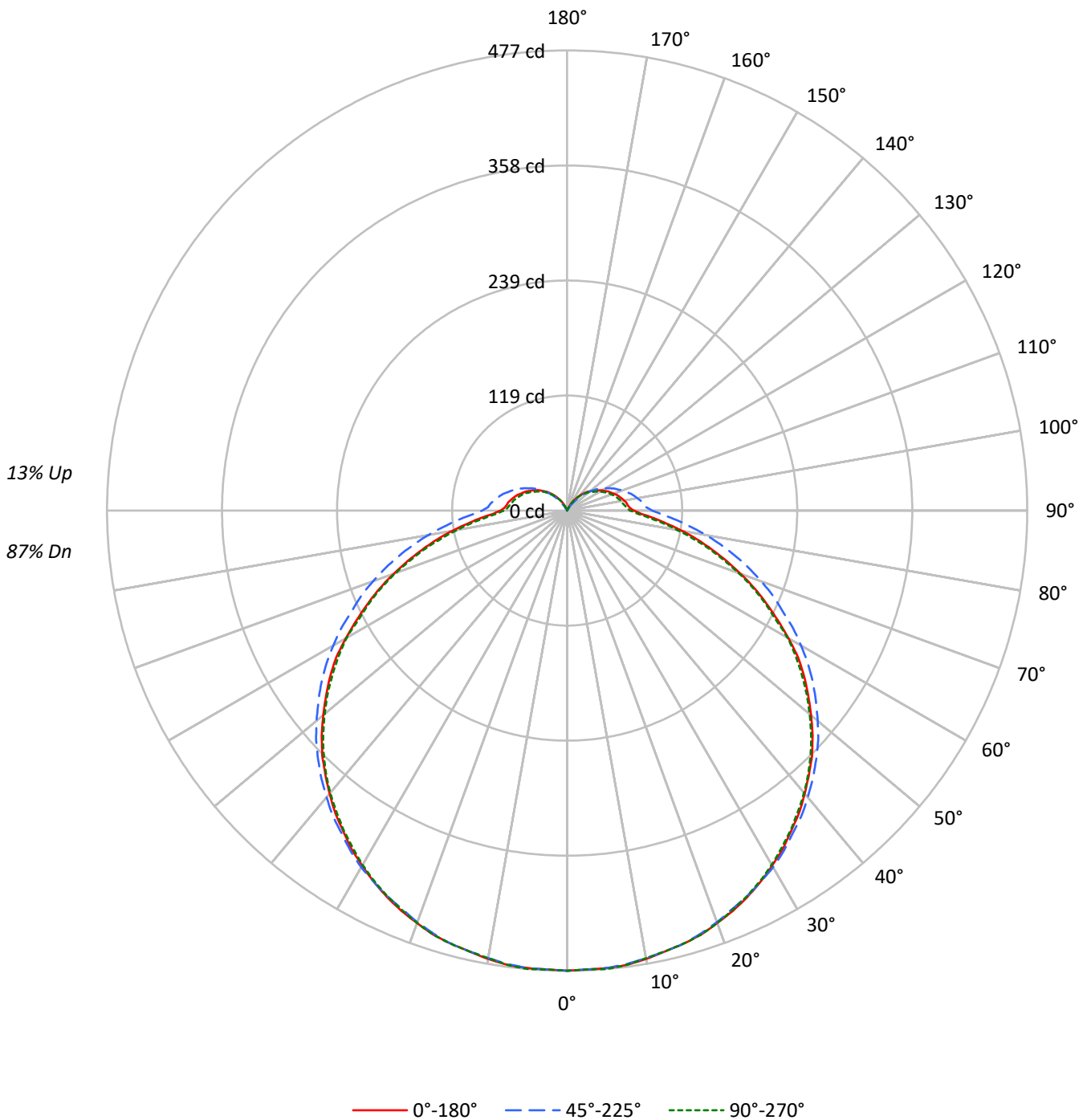
Lumens per Lamp: N/A
Luminaire Lumens: 1965.4 lumens
Efficiency: N/A
Efficacy: 81.9 lumens/watt
Spacing Criteria (0/90/45): 1.32 / 1.32 / 1.47
Luminous Opening: Rectangular w/ Sides (W: 0.83' x L: 0.83' x H: 0.42')
CIE Type: Semi-Direct

Input Watts (W): 24
Input Voltage (V): 120.1
Input Current (A_{in}): 0.200
Voltage Rise (V): NR
Power Factor: 0.998
Total Harmonic Distortion (THDi): 6.72%
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	90	90	90	87
1	104	98	93	88	99	94	90	86	88	84	81	82	79	76	76	74	71	68
2	93	84	76	70	89	81	74	68	75	70	65	70	65	61	65	61	58	55
3	84	73	64	57	81	70	62	56	66	59	53	61	55	51	57	52	48	45
4	77	64	55	48	74	62	53	47	58	50	45	54	48	43	50	45	41	38
5	70	57	47	41	67	55	46	40	51	44	38	48	42	36	45	39	35	32
6	65	51	42	35	62	49	41	34	46	39	33	43	37	32	41	35	30	28
7	60	46	37	31	57	45	36	30	42	34	29	39	33	28	37	31	27	25
8	56	42	33	27	53	41	32	27	38	31	26	36	29	25	34	28	24	22
9	52	38	30	24	50	37	29	24	35	28	23	33	27	22	31	26	21	19
10	49	35	27	22	47	34	27	21	32	25	21	31	24	20	29	23	19	18

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	7394	7394	7394
5°	7096	6975	7111
10°	6827	6591	6813
15°	6580	6273	6580
20°	6350	5956	6350
25°	6130	5672	6116
30°	5903	5427	5889
35°	5676	5164	5662
40°	5459	4927	5445
45°	5246	4687	5217
50°	4986	4436	4956
55°	4730	4182	4682
60°	4402	3902	4386
65°	4035	3585	4000
70°	3647	3296	3608
75°	3239	2962	3176
80°	2816	2601	2699
85°	2384	2232	2251



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	45.3	2.3
10°-20°	131.3	6.7
20°-30°	203.5	10.4
30°-40°	254.4	12.9
40°-50°	278.9	14.2
50°-60°	273.0	13.9
60°-70°	236.2	12.0
70°-80°	178.7	9.1
80°-90°	113.9	5.8
90°-100°	78.4	4.0
100°-110°	64.7	3.3
110°-120°	48.7	2.5
120°-130°	32.5	1.7
130°-140°	18.0	0.9
140°-150°	6.9	0.4
150°-160°	0.8	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	380.2	19.3
0°-40°	634.5	32.3
0°-60°	1186.5	60.4
0°-90°	1715.3	87.3
90°-120°	191.8	9.8
90°-150°	249.3	12.7
90°-180°	250.0	12.7
0°-180°	1965.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	477	477	477	477	477	
5°	476	477	476	476	477	45
15°	465	465	465	465	465	131
25°	442	441	441	440	441	204
35°	405	406	408	405	404	254
45°	359	362	365	361	357	277
55°	300	307	311	305	297	268
65°	228	240	246	238	226	226
75°	155	172	180	170	152	164
85°	90	106	114	105	85	80
90°	69	80	88	79	65	38
95°	63	74	80	72	60	51
105°	56	63	68	60	53	59
115°	47	50	54	48	44	46
125°	37	36	39	34	34	33
135°	26	22	24	21	24	20
145°	14	12	7	10	14	9
155°	2	0	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°	65°	75°	85°	90°
0°	477	477	477	477	477	477	477	477	477	477	477
2.5°	476	477	477	476	477	476	476	476	476	476	476
5°	476	477	476	477	476	476	476	476	477	476	477
7.5°	475	475	475	475	475	474	475	475	475	475	475
10°	472	472	472	471	471	471	471	471	471	471	471
12.5°	468	468	468	468	468	468	468	468	468	468	468
15°	465	465	465	465	465	465	465	465	465	465	465
17.5°	461	461	461	461	461	460	460	460	461	461	461
20°	455	456	455	455	454	454	454	454	455	455	455
22.5°	449	449	448	448	448	447	447	447	447	448	448
25°	442	442	441	441	441	441	440	440	440	441	441
27.5°	434	434	434	434	434	434	433	433	433	433	433
30°	425	426	425	426	427	427	426	424	424	424	424
32.5°	416	415	416	416	418	418	417	415	415	414	414
35°	405	405	405	406	408	408	407	405	404	404	404
37.5°	395	394	395	397	399	399	398	395	393	393	393
40°	383	383	384	386	388	388	387	385	382	381	382
42.5°	371	372	373	375	377	377	377	374	370	369	370
45°	359	359	360	363	365	365	364	362	358	356	357
47.5°	345	345	347	350	352	353	352	349	345	343	343
50°	330	330	333	337	339	339	338	335	330	329	328
52.5°	315	316	318	322	325	325	324	321	317	314	313
55°	300	300	303	308	310	311	310	306	301	298	297
57.5°	284	285	288	293	296	296	295	292	286	282	281
60°	265	267	272	276	280	280	280	275	269	264	264
62.5°	246	247	254	259	263	264	263	257	250	244	243
65°	228	230	236	242	246	246	245	240	233	226	226
67.5°	210	212	218	225	229	231	229	223	216	208	208
70°	191	194	201	208	213	214	212	206	198	190	189
72.5°	173	176	183	191	196	197	195	189	180	172	170
75°	155	157	166	174	179	180	178	172	163	154	152
77.5°	138	139	148	157	162	163	161	156	146	136	133
80°	121	122	132	140	145	146	144	138	129	119	116
82.5°	104	106	116	124	128	129	127	122	113	102	100
85°	90	92	101	108	113	114	112	107	98	88	85
87.5°	77	79	87	94	98	99	96	92	83	75	73
90°	69	69	76	82	86	88	85	81	73	66	65
92.5°	65	66	72	78	81	82	80	76	69	62	62
95°	63	64	69	75	79	80	78	73	67	61	60
97.5°	62	62	67	72	76	77	75	71	64	59	58
100°	60	60	64	70	73	74	72	68	62	57	57
102.5°	58	58	62	67	70	71	69	65	59	55	55
105°	56	56	59	64	67	68	66	62	56	53	53
107.5°	54	53	56	61	64	64	63	59	54	51	51
110°	51	51	53	57	60	61	59	56	51	48	49



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CANDELA DISTRIBUTION (continued):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
112.5°	49	49	50	54	57	57	56	53	48	46	47
115°	47	47	47	51	53	54	52	49	45	44	44
117.5°	44	44	44	47	49	50	49	46	42	42	42
120°	42	42	40	44	46	46	45	42	38	39	39
122.5°	39	39	38	40	42	43	41	39	35	37	37
125°	37	36	35	36	38	39	38	35	33	34	34
127.5°	34	34	32	33	35	35	34	31	30	32	32
130°	31	31	30	29	31	31	30	27	28	29	30
132.5°	29	28	27	25	27	27	26	24	25	27	27
135°	26	26	24	22	23	24	22	20	23	24	24
137.5°	23	23	21	19	19	20	18	18	20	21	22
140°	20	20	19	16	15	15	14	15	18	19	19
142.5°	17	17	16	14	11	11	10	13	15	16	16
145°	14	14	13	11	8	7	7	10	12	13	14
147.5°	12	11	10	8	5	2	5	8	10	11	11
150°	9	9	8	6	3	0	3	5	7	8	8
152.5°	6	5	4	3	0	0	0	3	4	5	5
155°	2	2	2	0	0	0	0	0	2	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

(END OF REPORT)