

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: P34260

Luminaire Tested: **MNAE-G-48-LD4-EXAM/LO-40**

Test Date: 07/29/15

This test was performed under the Supervised Manufacturer's Testing Program. The results of this test have not been influenced by sources from within Cooper Lighting Solutions or from external interests.



Test Information

Test Method: LM-79-08
Report Number: P34260
Test Lab: INNOVATION CENTER-P3
Test Date: 07/29/15
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: MNAE-G-48-LD4-EXAM/LO-40
Description: FAILSAFE MNAE 4' RECESSED LED FIXTURE WITH A LOW EXAM LIGHT LEVEL
Light Source: (84) COOPER LIGHTING 4000K LEDS
2UT217042A8404A
Ballast/Driver: (1) OSRAM ELECTRONIC DRIVER
OT50W

Luminaire Equipment:	<u>Sample No.</u>	<u>Condition</u>	<u>Description</u>
	AS-5443-1	Good	WHITE TWIN R-EVOLVE FLOOD
	AS-5443-2	Good	REFLECTOR
	AS-5443-3	Good	DRIVER
	AS-5443-4	Good	UPPER MODULE
	AS-5443-5	Good	LENS
	AS-5443-6	Good	DRIVER 2
	AS-5443-7	Good	TRIM RING

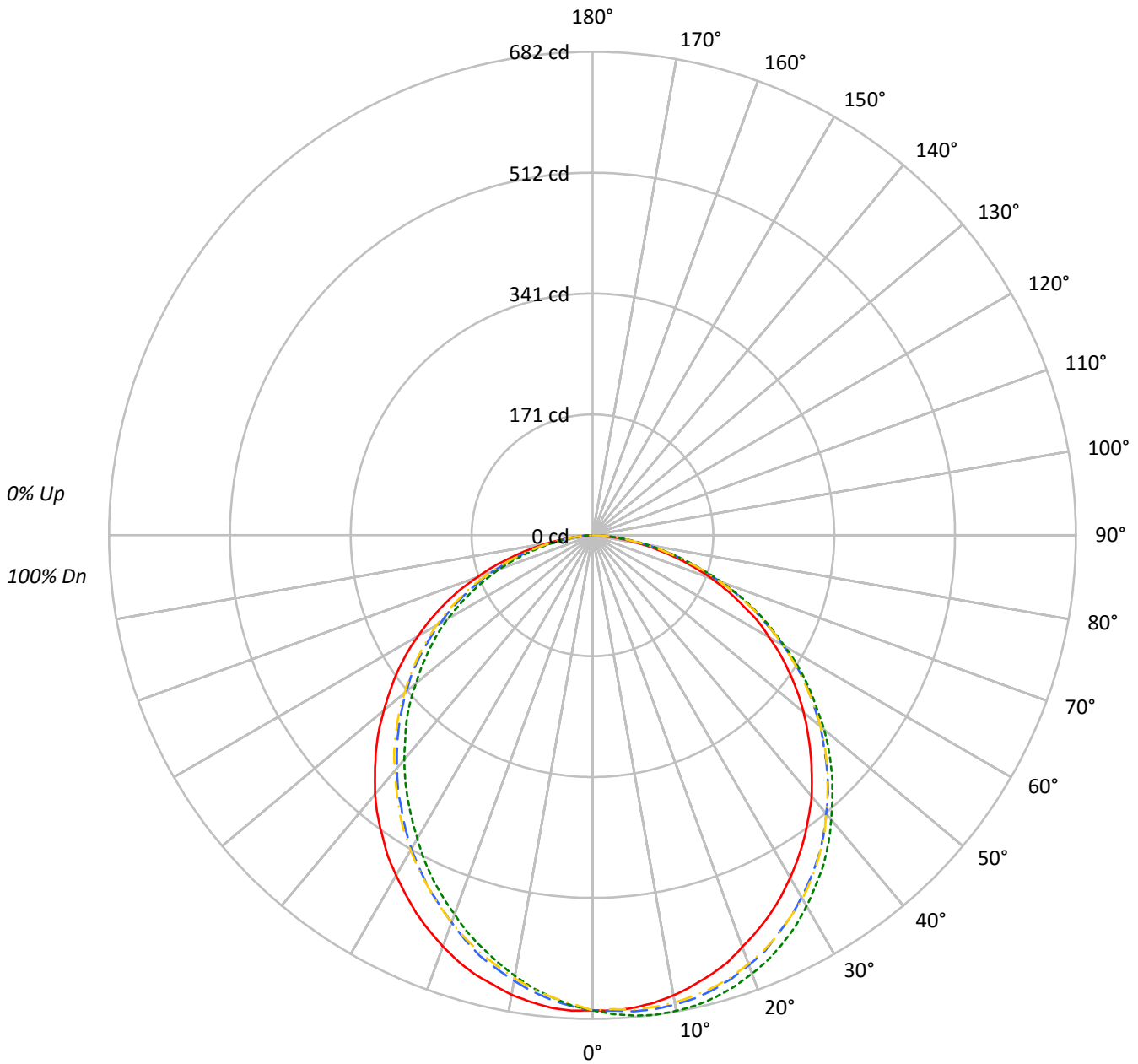
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1843.4 lumens
Efficiency: N/A
Efficacy: 76.8 lumens/watt
Spacing Criteria (0/90/45): 1.24 / 1.22 / 1.35
Luminous Opening: Rectangular (W 0.38' x L: 3.67' x H: 0')
CIE Type: Direct

Input Watts (W): 24
Input Voltage (V): 120.0
Input Current (A_{in}): 0.202
Voltage Rise (V): NR
Power Factor: 0.9959
Total Harmonic Distortion (THDi): 7.69%
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: 13 HR
Ambient Temperature (°C): 25.0
Test Distance: 25 FT

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Luminous Intensity Polar Plot



— 0°-180° - - 45°-225° - - - 90°-270° - · - 135°-315°



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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	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	109	104	100	96	106	102	98	94	98	94	91	94	91	89	90	88	86	84
2	99	91	84	78	96	89	83	77	85	80	76	82	78	74	79	75	72	70
3	90	80	72	65	88	78	71	64	75	69	63	72	67	62	70	65	61	59
4	83	71	62	55	80	69	61	55	67	60	54	64	58	53	62	57	53	50
5	76	63	54	48	74	62	54	47	60	52	47	58	51	46	56	50	46	44
6	70	57	48	41	68	56	47	41	54	47	41	52	46	41	51	45	40	38
7	65	52	43	37	63	51	42	37	49	42	36	48	41	36	46	40	36	34
8	61	47	39	33	59	46	38	33	45	38	32	44	37	32	43	37	32	30
9	57	43	35	29	55	43	35	29	41	34	29	40	34	29	39	33	29	27
10	53	40	32	27	52	39	32	27	38	31	27	37	31	26	37	31	26	25

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	5245	5245	5245	5245
5°	5257	5344	5257	5139
10°	5238	5413	5230	5016
15°	5203	5462	5195	4879
20°	5148	5482	5140	4740
25°	5105	5485	5079	4612
30°	5044	5460	5008	4465
35°	4979	5428	4941	4339
40°	4915	5355	4875	4220
45°	4816	5292	4783	4107
50°	4738	5200	4677	3958
55°	4640	5077	4586	3835
60°	4509	4901	4446	3695
65°	4334	4742	4279	3464
70°	4120	4463	3960	3204
75°	3690	4053	3539	2783
80°	3111	3607	2885	2254
85°	2066	3054	1796	1617



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	63.3	3.4
10°-20°	180.2	9.8
20°-30°	270.1	14.7
30°-40°	322.1	17.5
40°-50°	331.2	18.0
50°-60°	297.5	16.1
60°-70°	224.5	12.2
70°-80°	124.1	6.7
80°-90°	30.5	1.7
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	513.6	27.9
0°-40°	835.6	45.3
0°-60°	1464.3	79.4
0°-90°	1843.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1843.4	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	670	670	670	670	670	
5°	669	680	669	654	669	64
15°	642	674	641	602	642	181
25°	591	635	588	534	591	272
35°	521	568	517	454	521	326
45°	435	478	432	371	435	336
55°	340	372	336	281	340	304
65°	234	256	231	187	234	232
75°	122	134	117	92	122	130
85°	23	34	20	18	23	31
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	670	670	670	670	670	670	670	670	670	670	670
2.5°	671	675	671	676	676	675	669	670	671	674	665
5°	669	675	674	679	680	679	671	669	669	669	658
7.5°	665	674	674	681	682	680	671	668	664	661	649
10°	659	670	672	681	681	679	669	663	658	652	638
12.5°	651	664	669	678	679	675	665	658	649	642	626
15°	642	658	663	673	674	671	660	651	641	631	614
17.5°	632	649	655	666	667	664	653	641	630	618	598
20°	618	637	645	658	658	655	643	631	617	603	581
22.5°	605	625	635	646	648	645	633	619	603	588	564
25°	591	613	620	633	635	632	621	606	588	571	548
27.5°	575	598	606	618	621	618	606	590	571	554	529
30°	558	581	590	602	604	602	592	574	554	536	511
32.5°	540	563	573	584	586	583	575	555	537	516	491
35°	521	546	555	565	568	565	556	538	517	496	470
37.5°	501	524	535	544	547	544	536	517	498	477	451
40°	481	505	513	523	524	522	513	496	477	455	429
42.5°	458	482	492	500	501	499	491	475	454	434	408
45°	435	459	468	477	478	475	469	453	432	413	387
47.5°	412	436	443	451	453	451	445	430	409	390	365
50°	389	412	420	425	427	425	420	405	384	365	343
52.5°	365	385	393	398	398	399	394	380	360	342	321
55°	340	361	368	372	372	372	366	354	336	318	297
57.5°	315	333	340	342	344	343	339	327	311	292	273
60°	288	304	311	315	313	316	310	300	284	268	248
62.5°	264	277	281	284	285	286	282	273	258	242	224
65°	234	247	253	255	256	255	253	242	231	215	199
67.5°	207	217	224	224	226	226	221	215	203	187	174
70°	180	189	192	195	195	195	192	186	173	160	150
72.5°	151	159	163	165	164	163	163	155	146	135	124
75°	122	131	134	136	134	135	131	125	117	109	100
77.5°	94	102	104	107	106	106	104	98	90	82	76
80°	69	75	78	80	80	79	76	70	64	58	54
82.5°	46	49	52	54	54	53	53	46	40	36	34
85°	23	28	31	33	34	32	31	26	20	19	18
87.5°	9	13	17	19	19	18	16	11	6	7	8
90°	0	0	0	0	0	0	0	0	0	0	0



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CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	670	670	670	670	670	670
2.5°	666	664	665	661	662	671
5°	657	654	656	654	657	669
7.5°	647	644	646	645	650	665
10°	635	631	635	634	642	659
12.5°	621	617	619	622	632	651
15°	607	602	606	610	622	642
17.5°	592	587	590	596	610	632
20°	574	569	574	581	596	618
22.5°	556	552	557	565	580	605
25°	537	534	539	548	564	591
27.5°	520	515	520	531	549	575
30°	500	494	501	513	531	558
32.5°	479	474	481	495	512	540
35°	459	454	460	475	493	521
37.5°	439	434	442	454	474	501
40°	418	413	420	434	453	481
42.5°	396	391	400	414	433	458
45°	375	371	377	392	411	435
47.5°	352	349	356	370	389	412
50°	331	325	332	346	368	389
52.5°	309	303	311	324	344	365
55°	285	281	288	301	321	340
57.5°	262	259	266	277	295	315
60°	239	236	240	254	270	288
62.5°	213	211	218	229	244	264
65°	191	187	194	204	218	234
67.5°	166	163	168	180	192	207
70°	142	140	143	152	165	180
72.5°	118	116	121	128	139	151
75°	94	92	96	102	113	122
77.5°	72	71	74	79	88	94
80°	50	50	52	56	62	69
82.5°	32	33	34	36	40	46
85°	17	18	18	20	21	23
87.5°	8	9	9	9	8	9
90°	0	0	0	0	0	0

(END OF REPORT)