

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: P34259

Luminaire Tested: **MNAE-G-48-LD4-EXAM/STD-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: P34259
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/STD-40
Description: FAILSAFE MNAE 4' RECESSED LED FIXTURE WITH A STANDARD 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

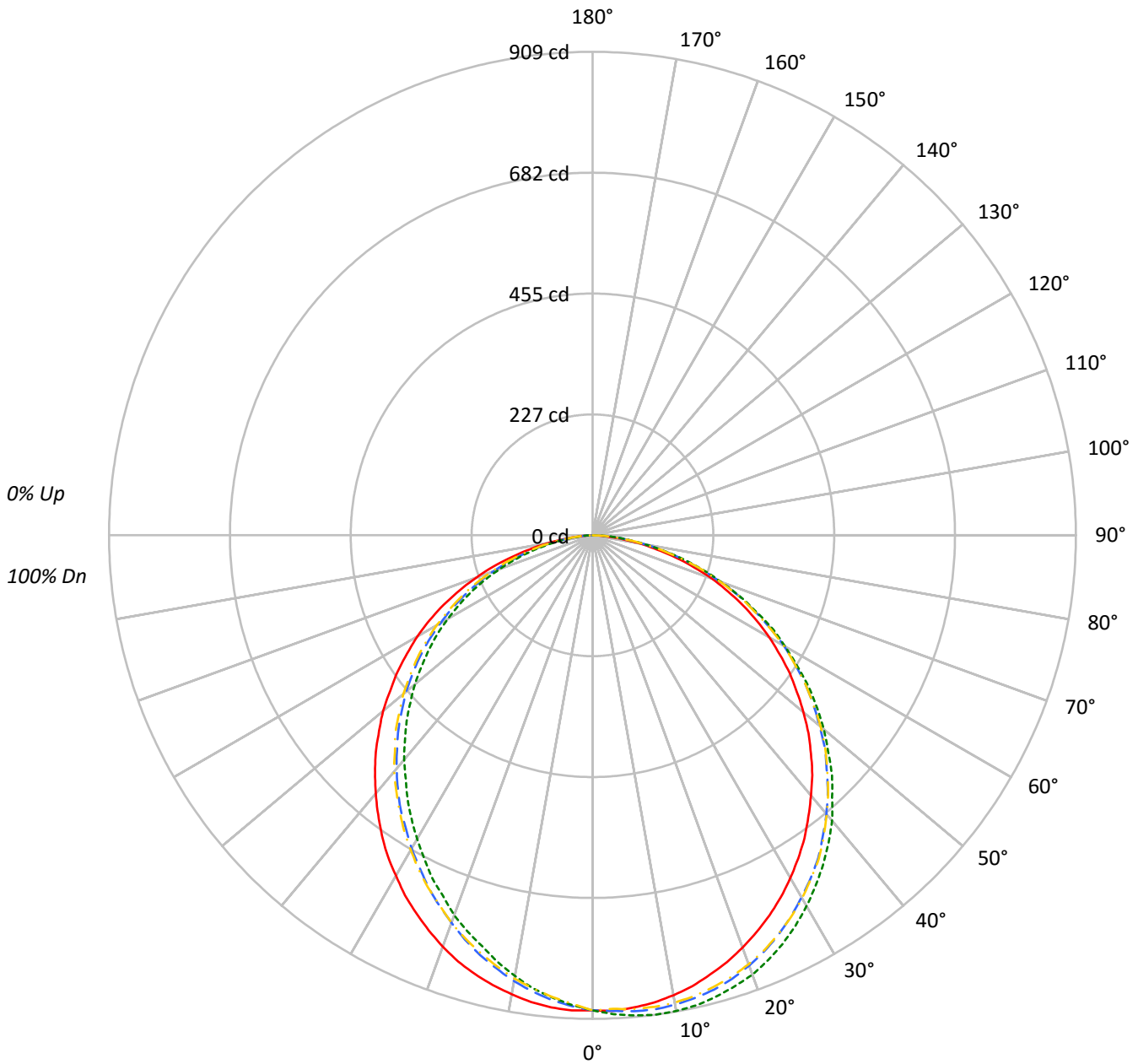
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2457.6 lumens
Efficiency: N/A
Efficacy: 71.6 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): 34.3
Input Voltage (V): 120.0
Input Current (Ain): 0.287
Voltage Rise (V): NR
Power Factor: 0.9983
Total Harmonic Distortion (THDi): 7.90%
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	36	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°	6991	6991	6991	6991
5°	7002	7120	7002	6852
10°	6979	7218	6963	6685
15°	6929	7278	6921	6484
20°	6873	7323	6856	6331
25°	6806	7316	6772	6150
30°	6725	7277	6680	5957
35°	6642	7225	6594	5791
40°	6530	7164	6479	5631
45°	6432	7052	6377	5469
50°	6309	6917	6260	5310
55°	6183	6770	6114	5118
60°	6012	6544	5950	4916
65°	5798	6279	5724	4649
70°	5493	5905	5310	4234
75°	4930	5444	4718	3751
80°	4193	4688	3877	3020
85°	2784	4132	2425	2066



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	84.4	3.4
10°-20°	240.1	9.8
20°-30°	360.1	14.7
30°-40°	429.4	17.5
40°-50°	441.5	18.0
50°-60°	396.3	16.1
60°-70°	299.4	12.2
70°-80°	165.7	6.7
80°-90°	40.8	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°	684.6	27.9
0°-40°	1114.0	45.3
0°-60°	1951.8	79.4
0°-90°	2457.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2457.6	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	893	893	893	893	893	
5°	891	906	891	872	891	85
15°	855	898	854	800	855	241
25°	788	847	784	712	788	363
35°	695	756	690	606	695	434
45°	581	637	576	494	581	448
55°	453	496	448	375	453	404
65°	313	339	309	251	313	309
75°	163	180	156	124	163	173
85°	31	46	27	23	31	40
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°	893	893	893	893	893	893	893	893	893	893	893
2.5°	895	899	895	900	901	899	891	892	894	897	886
5°	891	900	898	905	906	904	894	892	891	890	877
7.5°	886	898	899	907	909	906	894	890	885	882	865
10°	878	893	896	906	908	905	892	884	876	870	851
12.5°	868	886	891	903	905	900	887	877	866	857	834
15°	855	876	884	897	898	894	879	868	854	841	817
17.5°	841	863	874	888	889	884	870	855	840	824	797
20°	825	851	861	875	879	873	858	842	823	804	775
22.5°	807	834	846	861	864	859	844	824	804	783	753
25°	788	816	828	844	847	844	827	807	784	763	730
27.5°	767	796	808	824	827	823	809	787	763	739	704
30°	744	775	786	801	805	802	788	765	739	715	680
32.5°	720	751	764	777	781	777	765	741	716	690	653
35°	695	727	740	754	756	753	742	716	690	664	629
37.5°	667	699	712	725	729	725	714	691	662	637	601
40°	639	671	684	698	701	697	685	662	634	609	573
42.5°	612	642	655	667	667	667	656	635	605	578	544
45°	581	614	623	633	637	634	624	605	576	551	516
47.5°	551	581	593	601	601	603	594	572	544	520	486
50°	518	549	557	567	568	567	560	540	514	488	457
52.5°	485	514	524	530	532	531	524	506	479	457	426
55°	453	479	489	493	496	496	489	473	448	423	395
57.5°	418	443	452	457	456	458	451	439	413	389	363
60°	384	406	416	417	418	420	415	401	380	354	330
62.5°	349	369	376	379	383	381	375	365	345	321	297
65°	313	330	336	341	339	342	334	326	309	285	264
67.5°	276	294	298	301	300	300	297	288	270	252	231
70°	240	254	256	258	258	260	255	246	232	216	199
72.5°	201	212	217	219	220	221	217	210	196	180	164
75°	163	174	177	180	180	181	178	168	156	145	130
77.5°	125	135	141	143	141	142	139	132	120	112	101
80°	93	101	104	104	104	104	102	95	86	77	71
82.5°	59	68	70	73	71	70	69	61	53	50	46
85°	31	37	41	44	46	44	40	35	27	26	23
87.5°	11	18	24	24	25	25	21	15	9	9	11
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°	893	893	893	893	893	893
2.5°	888	884	887	881	883	895
5°	877	872	874	871	876	891
7.5°	863	859	861	859	867	886
10°	847	841	845	846	856	878
12.5°	828	822	827	830	844	868
15°	808	800	807	813	829	855
17.5°	787	781	786	795	813	841
20°	767	760	764	775	794	825
22.5°	743	734	742	752	774	807
25°	718	712	720	731	754	788
27.5°	691	685	693	708	731	767
30°	665	659	669	683	706	744
32.5°	639	633	642	659	683	720
35°	613	606	615	632	657	695
37.5°	586	577	587	606	632	667
40°	555	551	561	580	604	639
42.5°	529	522	532	550	576	612
45°	499	494	502	524	547	581
47.5°	469	464	473	492	518	551
50°	442	436	444	464	488	518
52.5°	412	405	415	432	457	485
55°	379	375	383	402	425	453
57.5°	350	346	355	370	393	418
60°	316	314	320	338	361	384
62.5°	285	282	290	304	326	349
65°	254	251	257	271	292	313
67.5°	221	218	224	239	255	276
70°	188	185	192	203	220	240
72.5°	156	154	161	172	186	201
75°	126	124	128	137	148	163
77.5°	95	94	99	106	117	125
80°	68	67	71	76	82	93
82.5°	43	44	45	48	53	59
85°	24	23	25	27	29	31
87.5°	11	12	13	12	11	11
90°	0	0	0	0	0	0

(END OF REPORT)