

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: P34258

Luminaire Tested: **MNAE-G-48-LD4-EXAM/HI-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: P34258
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/HI-40
Description: FAILSAFE MNAE 4' RECESSED LED FIXTURE WITH A HIGH 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

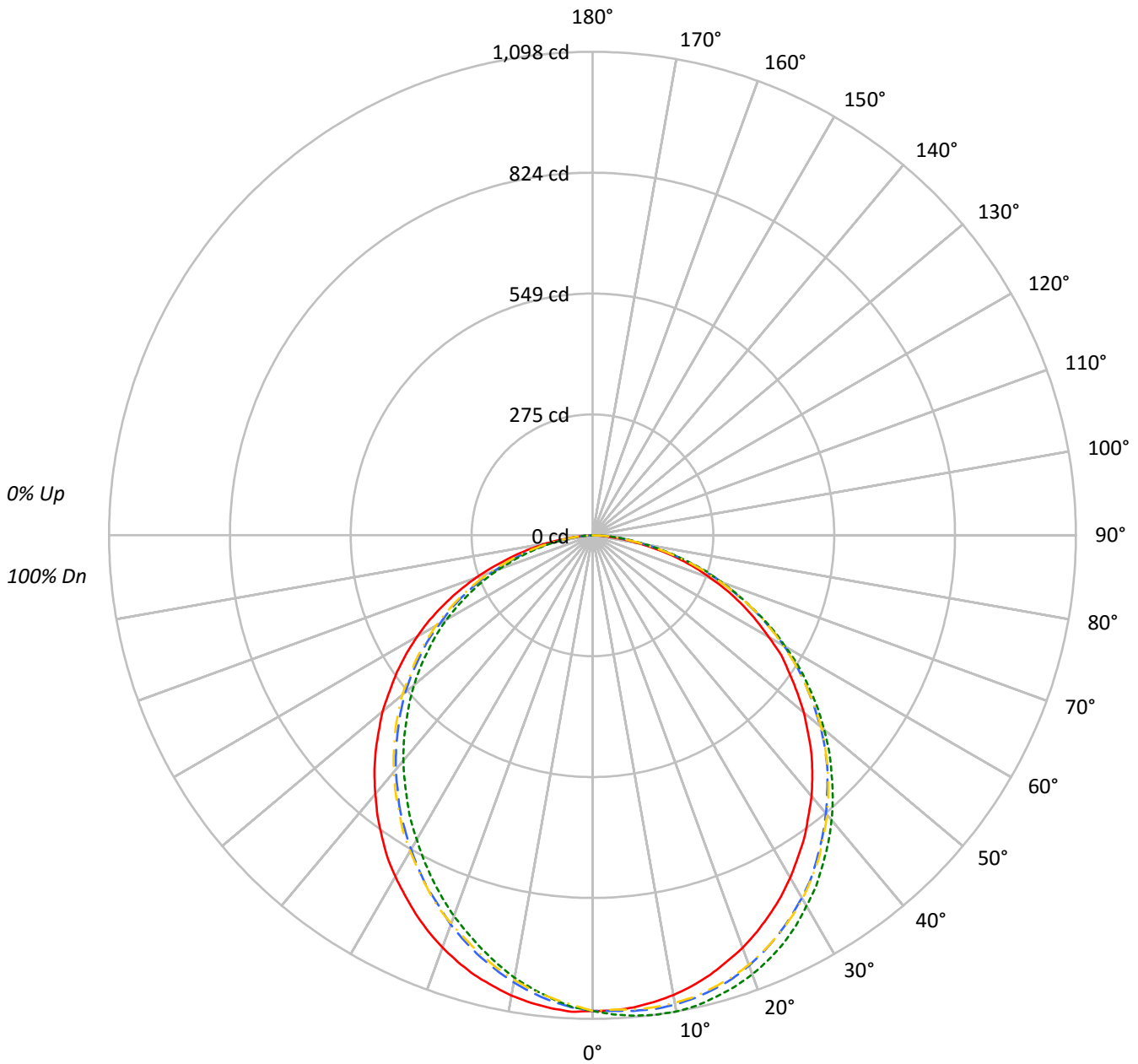
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2974.2 lumens
Efficiency: N/A
Efficacy: 65.7 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): 45.3
Input Voltage (V): 120.0
Input Current (A_{in}): 0.378
Voltage Rise (V): NR
Power Factor: 0.9993
Total Harmonic Distortion (THDi): 8.10%
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: 13 HR
Ambient Temperature (°C): 25.0
Test Distance: 25 FT

TEST NUMBER: P34258
CATALOG NUMBER: MNAE-G-48-LD4-EXAM/HI-40

Luminous Intensity Polar Plot



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



TEST NUMBER: P34258

CATALOG NUMBER: MNAE-G-48-LD4-EXAM/HI-40

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	47	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	26	37	31	26	37	31	26	24

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	8455	8455	8455	8455
5°	8455	8605	8471	8298
10°	8426	8728	8434	8108
15°	8372	8793	8380	7878
20°	8306	8839	8297	7664
25°	8214	8845	8197	7437
30°	8117	8786	8090	7213
35°	8018	8716	7970	7015
40°	7910	8635	7838	6826
45°	7794	8502	7716	6620
50°	7636	8367	7575	6443
55°	7452	8189	7397	6210
60°	7249	7922	7202	5996
65°	7002	7576	6891	5631
70°	6569	7141	6432	5196
75°	6049	6594	5717	4537
80°	4914	5770	4779	3697
85°	3234	4940	2874	2605



TEST NUMBER: P34258

CATALOG NUMBER: MNAE-G-48-LD4-EXAM/HI-40

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	102.1	3.4
10°-20°	290.5	9.8
20°-30°	435.7	14.6
30°-40°	519.4	17.5
40°-50°	534.4	18.0
50°-60°	480.0	16.1
60°-70°	362.1	12.2
70°-80°	200.6	6.7
80°-90°	49.4	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°	828.3	27.8
0°-40°	1347.7	45.3
0°-60°	2362.1	79.4
0°-90°	2974.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2974.2	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1080	1080	1080	1080	1080	
5°	1076	1095	1078	1056	1076	102
15°	1033	1085	1034	972	1033	291
25°	951	1024	949	861	951	438
35°	839	912	834	734	839	524
45°	704	768	697	598	704	542
55°	546	600	542	455	546	489
65°	378	409	372	304	378	373
75°	200	218	189	150	200	210
85°	36	55	32	29	36	47
90°	0	0	0	0	0	



TEST NUMBER: P34258

CATALOG NUMBER: MNAE-G-48-LD4-EXAM/HI-40

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1080	1080	1080	1080	1080	1080	1080	1080	1080	1080	1080
2.5°	1080	1087	1081	1088	1089	1087	1078	1080	1083	1086	1073
5°	1076	1087	1084	1094	1095	1093	1081	1079	1078	1078	1062
7.5°	1069	1083	1085	1096	1098	1095	1081	1075	1071	1067	1048
10°	1060	1079	1082	1096	1098	1094	1078	1070	1061	1052	1031
12.5°	1048	1069	1076	1091	1094	1089	1073	1061	1048	1036	1011
15°	1033	1058	1067	1083	1085	1080	1063	1050	1034	1017	990
17.5°	1015	1044	1056	1072	1075	1070	1052	1035	1016	997	966
20°	997	1027	1040	1058	1061	1056	1038	1018	996	973	941
22.5°	975	1007	1021	1041	1044	1038	1020	999	974	949	911
25°	951	984	1000	1020	1024	1019	1000	977	949	923	885
27.5°	926	961	976	995	1000	994	978	952	922	895	855
30°	898	935	951	968	972	970	954	926	895	866	824
32.5°	868	907	924	941	945	941	925	898	867	836	793
35°	839	877	891	910	912	911	896	866	834	802	762
37.5°	805	844	859	876	880	875	862	834	802	770	727
40°	774	812	825	841	845	843	829	800	767	736	695
42.5°	739	777	789	806	808	805	793	766	733	700	660
45°	704	740	755	766	768	767	756	729	697	664	625
47.5°	664	703	716	727	730	728	717	694	658	629	590
50°	627	661	676	686	687	684	678	654	622	593	555
52.5°	586	622	633	641	645	643	634	614	580	553	516
55°	546	578	591	597	600	597	590	573	542	511	478
57.5°	509	534	548	552	556	554	546	531	501	471	442
60°	463	492	503	505	506	507	500	485	460	430	399
62.5°	420	444	455	458	461	460	454	438	417	388	363
65°	378	398	406	409	409	411	408	393	372	344	322
67.5°	334	353	359	363	361	362	358	347	326	302	282
70°	287	307	313	313	312	317	308	300	281	259	238
72.5°	245	260	265	264	269	268	262	250	234	219	198
75°	200	207	214	218	218	215	214	205	189	175	161
77.5°	154	165	169	172	170	171	166	161	147	134	121
80°	109	121	125	129	128	127	120	114	106	93	85
82.5°	70	79	87	88	88	85	82	73	66	61	54
85°	36	46	53	54	55	53	49	42	32	31	29
87.5°	13	22	28	31	30	28	26	19	10	11	13
90°	0	0	0	0	0	0	0	0	0	0	0



TEST NUMBER: P34258

CATALOG NUMBER: MNAE-G-48-LD4-EXAM/HI-40

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1080	1080	1080	1080	1080	1080
2.5°	1075	1072	1074	1067	1070	1080
5°	1061	1056	1059	1055	1062	1076
7.5°	1045	1039	1043	1042	1051	1069
10°	1026	1020	1023	1025	1038	1060
12.5°	1005	997	1002	1006	1023	1048
15°	979	972	979	984	1004	1033
17.5°	953	946	956	961	984	1015
20°	927	920	928	938	962	997
22.5°	900	891	900	915	940	975
25°	868	861	872	886	913	951
27.5°	838	830	840	857	885	926
30°	806	798	810	828	857	898
32.5°	775	768	778	800	827	868
35°	741	734	746	766	800	839
37.5°	710	701	712	735	765	805
40°	674	668	679	702	733	774
42.5°	639	634	644	668	700	739
45°	605	598	610	634	666	704
47.5°	569	564	575	599	629	664
50°	534	529	541	564	594	627
52.5°	497	493	502	523	554	586
55°	459	455	466	487	519	546
57.5°	422	420	430	449	476	509
60°	388	383	391	410	437	463
62.5°	347	343	351	370	394	420
65°	305	304	313	329	355	378
67.5°	268	266	271	290	311	334
70°	227	227	233	249	269	287
72.5°	189	187	195	206	223	245
75°	153	150	154	169	182	200
77.5°	116	114	120	128	142	154
80°	82	82	85	93	99	109
82.5°	53	52	54	58	66	70
85°	29	29	31	32	35	36
87.5°	13	15	15	15	14	13
90°	0	0	0	0	0	0

(END OF REPORT)