

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: 168P164

Luminaire Tested: **MPWA-0/232-WHT-NRL**

Issue Date: 3/3/2020

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: 168P164
Test Lab:
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: MPWA-0/232-WHT-NRL
Description: Medical Patient Wall Bracket, Architectural style
angled and rounded front, upper and lower compartments.
Light Source: Two - FO32/35K - 2800 Lumens ea. - 32 Watts ea.
Ballast/Driver: One - Advance REL-2P32-SC

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

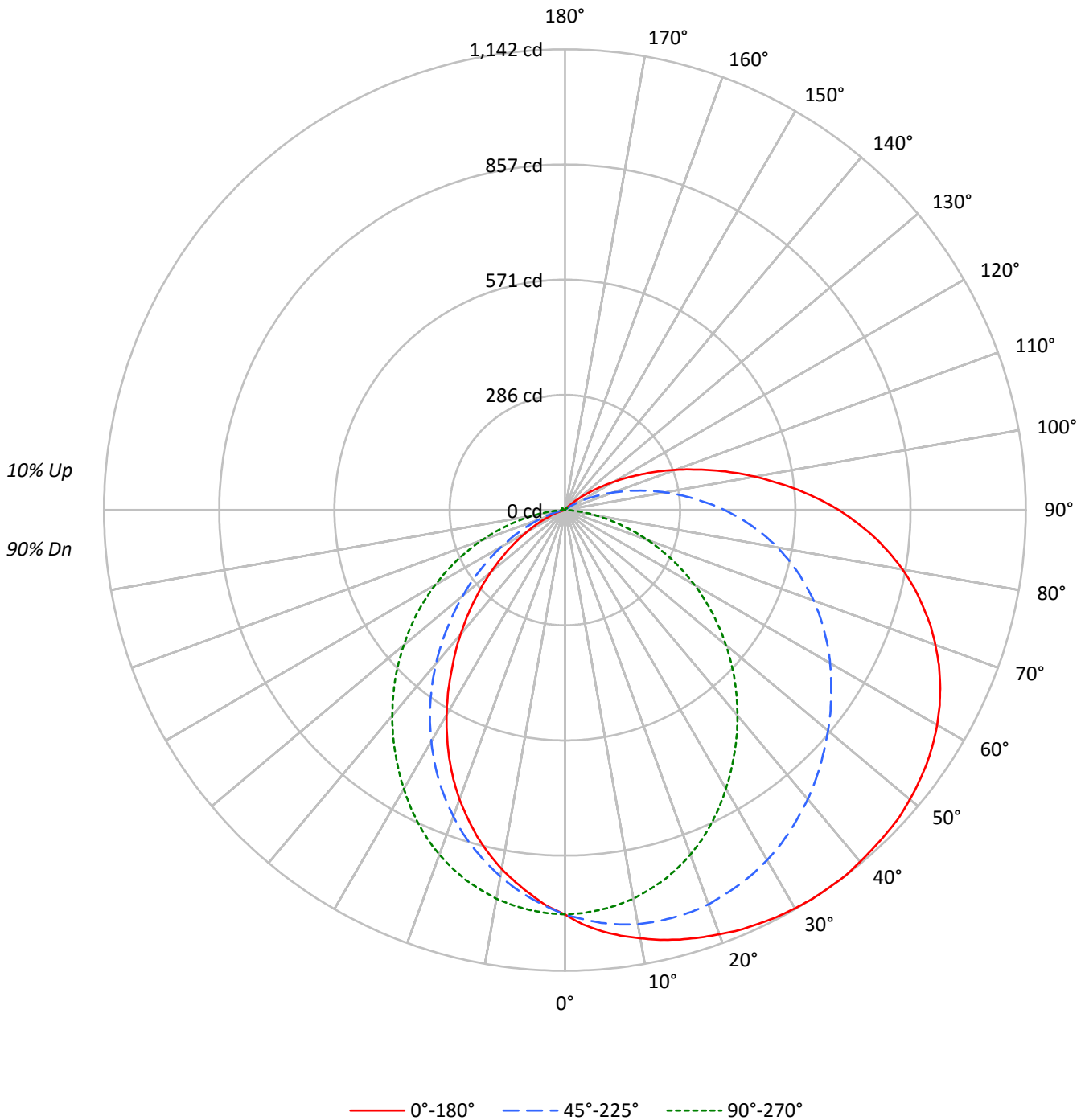
Lumens per Lamp: 2800 (2 lamps)
Luminaire Lumens: 3567.5 lumens
Efficiency: 63.7%
Efficacy: 63.7 lumens/watt
Spacing Criteria (0/90/45): 1.28 / 1.19 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 3.83' x L: 0.43' x H: 0.25')
CIE Type: Direct

Input Watts (W): 56
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
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	74	74	74	74	72	72	72	72	67	67	67	63	63	63	59	59	59	58
1	66	63	59	56	64	61	58	55	57	54	52	53	51	49	50	48	47	45
2	60	54	49	45	57	52	48	44	49	45	42	46	43	40	43	40	38	36
3	54	47	41	37	52	45	40	36	43	38	35	40	36	33	38	34	32	30
4	50	41	35	31	48	40	35	30	38	33	29	35	31	28	33	30	27	25
5	45	37	31	26	44	36	30	26	34	29	25	32	28	24	30	26	23	22
6	42	33	27	23	40	32	27	23	30	26	22	29	24	21	27	23	21	19
7	39	30	24	20	37	29	24	20	28	23	19	26	22	19	25	21	18	17
8	36	27	22	18	35	27	21	18	25	21	17	24	20	17	23	19	16	15
9	34	25	20	16	32	24	19	16	23	19	15	22	18	15	21	17	15	13
10	32	23	18	15	30	23	18	14	21	17	14	20	16	14	20	16	13	12

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	6549	6549	6549
5°	6543	6491	5975
10°	6489	6417	5436
15°	6452	6311	4906
20°	6424	6176	4380
25°	6422	6005	3847
30°	6441	5804	3311
35°	6476	5593	2784
40°	6526	5379	2305
45°	6605	5163	1853
50°	6703	4915	1442
55°	6817	4659	1058
60°	6936	4357	716
65°	7062	4002	434
70°	7188	3565	221
75°	7313	2965	72
80°	7445	2225	9
85°	7553	1331	0



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ZONAL LUMENS:

CANDELA DISTRIBUTION:

Zone	Lumens	% Fixture	% Lamp		0°	45°	90°	135°	180°	Flux
0°-10°	94.6	2.7	1.7	0°	1002	1002	1002	1002	1002	
10°-20°	270.0	7.6	4.8	5°	1048	1027	995	966	957	101
20°-30°	405.5	11.4	7.2	15°	1102	1045	949	869	838	313
30°-40°	484.6	13.6	8.7	25°	1132	1024	858	739	678	524
40°-50°	505.9	14.2	9.0	35°	1142	972	733	581	491	717
50°-60°	477.6	13.4	8.5	45°	1130	895	595	411	317	874
60°-70°	412.9	11.6	7.4	55°	1095	805	447	252	170	980
70°-80°	329.1	9.2	5.9	65°	1026	709	295	119	63	1016
80°-90°	245.3	6.9	4.4	75°	918	598	146	31	9	969
90°-100°	169.0	4.7	3.0	85°	770	467	31	3	0	645
100°-110°	100.5	2.8	1.8	90°	679	396	7	3	0	372
110°-120°	48.1	1.3	0.9	95°	579	322	6	3	0	452
120°-130°	17.2	0.5	0.3	105°	381	187	6	3	0	405
130°-140°	5.2	0.1	0.1	115°	210	78	6	3	0	212
140°-150°	2.0	0.1	0.0	125°	84	17	7	4	1	79
150°-160°	0.0	0.0	0.0	135°	15	4	8	5	2	14
160°-170°	0.0	0.0	0.0	145°	1	5	8	6	2	1
170°-180°	0.0	0.0	0.0	155°	0	0	0	0	0	0
0°-30°	770.1	21.6	13.8	165°	0	0	0	0	0	0
0°-40°	1254.7	35.2	22.4	175°	0	0	0	0	0	0
0°-60°	2238.2	62.7	40.0	180°	0	0	0	0	0	0
0°-90°	3225.5	90.4	57.6							
90°-120°	317.6	8.9	5.7							
90°-150°	342.0	9.6	6.1							
90°-180°	342.0	9.6	6.1							
0°-180°	3567.5	100.0	63.7							



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
0°	1002	1002	1002	1002	1002	1002	1002	1002	1002
2.5°	1028	1019	1015	1007	1000	991	985	978	983
5°	1048	1036	1027	1011	995	978	966	954	957
7.5°	1064	1051	1036	1012	988	963	945	930	931
10°	1078	1062	1042	1010	978	945	922	903	903
12.5°	1091	1072	1045	1005	964	926	896	874	872
15°	1102	1081	1045	997	949	904	869	842	838
17.5°	1111	1087	1044	986	930	879	840	809	801
20°	1119	1091	1040	972	909	853	808	772	763
22.5°	1127	1093	1032	956	885	823	774	733	722
25°	1132	1096	1024	936	858	792	739	692	678
27.5°	1137	1095	1014	914	829	759	701	650	632
30°	1140	1093	1002	890	798	724	662	606	586
32.5°	1142	1090	988	865	766	688	622	562	539
35°	1142	1085	972	838	733	651	581	516	491
37.5°	1142	1079	954	811	700	613	539	471	446
40°	1138	1070	936	782	665	575	497	427	402
42.5°	1134	1062	916	754	630	535	454	385	359
45°	1130	1052	895	725	595	494	411	343	317
47.5°	1125	1042	873	696	558	454	370	303	278
50°	1116	1030	851	665	521	413	330	265	240
52.5°	1106	1016	829	636	484	372	291	228	204
55°	1095	1001	805	605	447	330	252	193	170
57.5°	1081	986	782	574	409	289	216	160	139
60°	1065	970	759	542	371	249	181	130	110
62.5°	1047	951	735	511	333	210	149	103	86
65°	1026	931	709	479	295	174	119	78	63
67.5°	1003	908	683	447	257	140	91	57	44
70°	977	884	656	414	220	108	67	39	30
72.5°	950	857	627	380	182	80	47	25	18
75°	918	827	598	347	146	57	31	15	9
77.5°	886	795	567	313	113	37	18	7	4
80°	850	761	535	279	81	23	9	2	1
82.5°	811	726	502	245	54	13	5	1	0
85°	770	687	467	211	31	7	3	1	0
87.5°	725	648	432	178	15	6	3	1	0
90°	679	605	396	146	7	6	3	1	0
92.5°	629	561	359	117	6	6	3	1	0
95°	579	515	322	92	6	6	3	1	0
97.5°	527	469	287	71	6	6	3	1	0
100°	478	424	253	53	6	6	3	1	0
102.5°	429	378	219	39	6	6	3	1	0
105°	381	333	187	27	6	6	3	1	0
107.5°	335	290	156	18	6	6	3	1	0
110°	292	248	127	12	6	6	3	1	0



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
112.5°	250	209	101	8	6	6	3	1	0
115°	210	173	78	6	6	6	3	1	0
117.5°	174	140	58	6	6	6	4	1	0
120°	141	110	41	6	7	6	4	1	1
122.5°	110	84	27	6	7	6	4	1	1
125°	84	61	17	6	7	6	4	2	1
127.5°	61	42	10	6	7	6	4	2	1
130°	42	27	5	6	7	6	4	2	1
132.5°	27	16	4	6	7	7	5	2	2
135°	15	8	4	7	8	7	5	2	2
137.5°	7	4	4	7	8	7	5	3	2
140°	3	2	5	7	8	7	5	3	2
142.5°	1	2	5	7	8	8	5	3	2
145°	1	2	5	7	8	8	6	3	2
147.5°	0	0	0	0	0	0	0	0	0
150°	0	0	0	0	0	0	0	0	0
152.5°	0	0	0	0	0	0	0	0	0
155°	0	0	0	0	0	0	0	0	0
157.5°	0	0	0	0	0	0	0	0	0
160°	0	0	0	0	0	0	0	0	0
162.5°	0	0	0	0	0	0	0	0	0
165°	0	0	0	0	0	0	0	0	0
167.5°	0	0	0	0	0	0	0	0	0
170°	0	0	0	0	0	0	0	0	0
172.5°	0	0	0	0	0	0	0	0	0
175°	0	0	0	0	0	0	0	0	0
177.5°	0	0	0	0	0	0	0	0	0
180°	0	0	0	0	0	0	0	0	0

(END OF REPORT)