

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: H26118

Luminaire Tested: **FMW-1/113-277-81/85-EBT2**

Issue Date: 3/3/2020



Test Information

Test Method: LM-79-08
Report Number: H26118
Test Lab:
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: FMW-1/113-277-81/85-EBT2
Description: FAIL SAFE FLUORESCENT WALL MOUNT
WITH FACETED GLASS LENS
Light Source: TWO PL-C 13W/27/4P 13 WATTS 900 LUMENS
TWO 4 PIN DTT COMPACT FLUORESCENT LAMPS
Ballast/Driver: -

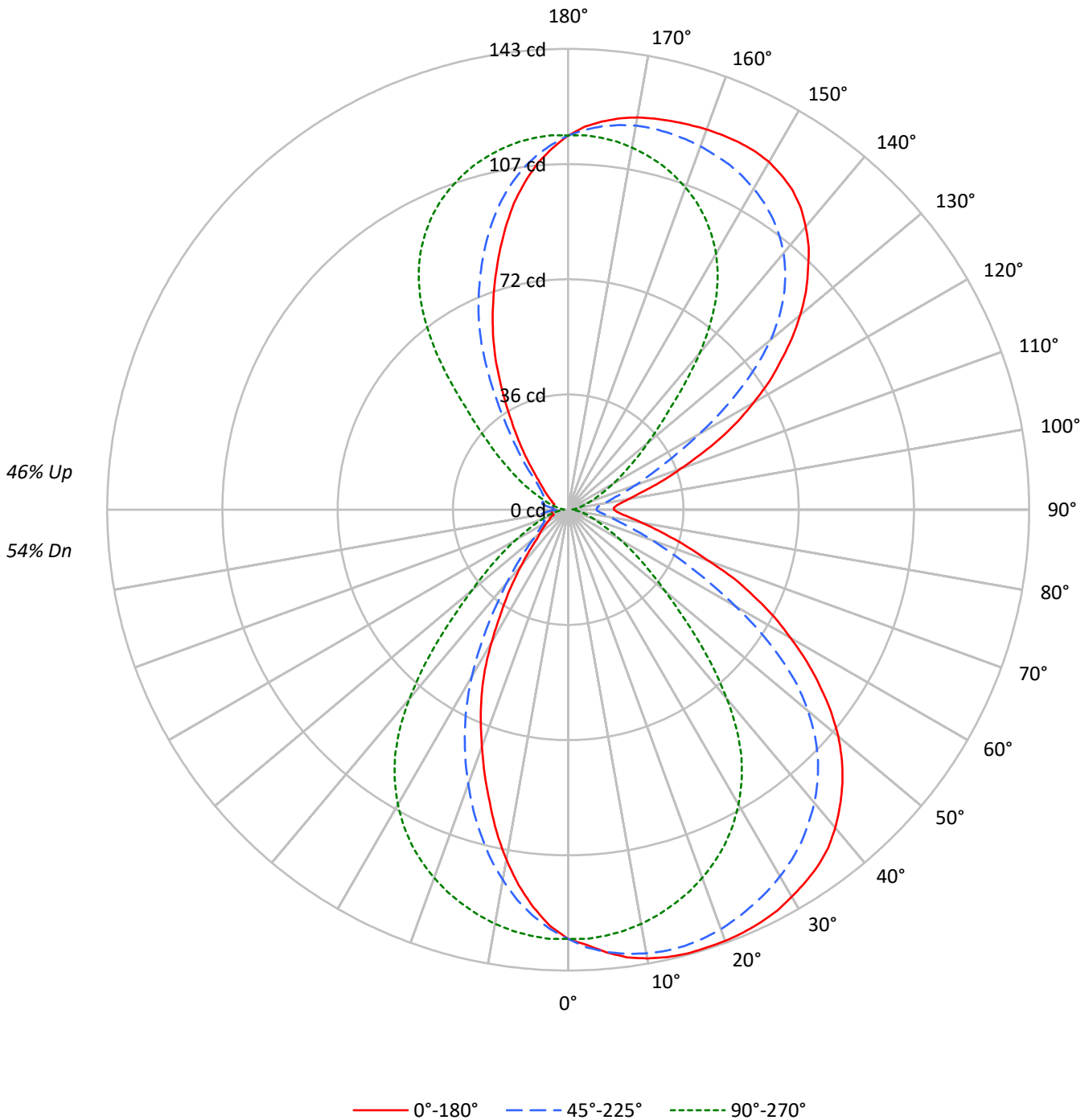
Summary

Lumens per Lamp: 900 (2 lamps)
Luminaire Lumens: 523.6 lumens
Efficiency: 29.1%
Efficacy: 17.5 lumens/watt
Spacing Criteria (0/90/45): 1.07 / 1.18 / 1.2
Luminous Opening: Rectangular (W 0.75' x L: 0.29' x H: 0')
CIE Type: General Diffuse

Input Watts (W): 30
Input Voltage (V): NR
Input Current (Ain): 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	31	31	31	31	29	29	29	29	25	25	25	21	21	21	17	17	17	16
1	29	28	26	25	27	26	25	24	22	21	21	19	18	18	15	15	15	13
2	26	24	22	21	24	23	21	20	19	18	17	16	16	15	14	13	13	11
3	24	21	19	18	22	20	18	17	17	16	15	15	14	13	12	12	11	10
4	22	19	17	15	20	18	16	14	15	14	13	13	12	11	11	10	10	9
5	20	17	15	13	19	16	14	12	14	12	11	12	11	10	10	9	8	8
6	19	15	13	11	17	14	12	11	13	11	10	11	10	9	9	8	8	7
7	17	14	12	10	16	13	11	10	11	10	9	10	9	8	8	7	7	6
8	16	13	10	9	15	12	10	9	10	9	8	9	8	7	8	7	6	5
9	15	12	9	8	14	11	9	8	10	8	7	8	7	6	7	6	6	5
10	14	11	9	7	13	10	8	7	9	7	6	8	7	6	7	6	5	4

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	6592	6592	6592
5°	6851	6592	6150
10°	7106	6558	5543
15°	7306	6491	4816
20°	7500	6404	4118
25°	7716	6269	3473
30°	7926	6040	2714
35°	8156	5661	2018
40°	8327	4949	1454
45°	8420	3947	1071
50°	8423	3003	885
55°	8223	2364	785
60°	7889	1851	713
65°	7436	1475	714
70°	6671	1230	695
75°	6291	1147	956
80°	6583	1140	1425
85°	9539	1249	3009



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ZONAL LUMENS:

CANDELA DISTRIBUTION:

Zone	Lumens	% Fixture	% Lamp		0°	45°	90°	135°	180°	Flux
0°-10°	12.5	2.4	0.7	0°	133	133	133	133	133	
10°-20°	34.5	6.6	1.9	5°	138	138	133	126	124	13
20°-30°	49.2	9.4	2.7	15°	143	140	127	104	94	40
30°-40°	54.0	10.3	3.0	25°	141	135	115	76	64	65
40°-50°	49.2	9.4	2.7	35°	135	126	94	43	33	84
50°-60°	38.0	7.3	2.1	45°	120	110	56	20	15	93
60°-70°	24.0	4.6	1.3	55°	95	81	27	11	9	85
70°-80°	13.2	2.5	0.7	65°	64	41	13	8	6	63
80°-90°	7.8	1.5	0.4	75°	33	18	6	8	5	35
90°-100°	6.8	1.3	0.4	85°	17	10	2	6	5	15
100°-110°	11.1	2.1	0.6	90°	14	9	1	3	4	8
110°-120°	19.6	3.7	1.1	95°	15	9	2	4	5	13
120°-130°	31.5	6.0	1.8	105°	26	15	5	8	5	28
130°-140°	41.9	8.0	2.3	115°	52	32	11	9	6	51
140°-150°	46.6	8.9	2.6	125°	80	65	23	10	8	72
150°-160°	42.8	8.2	2.4	135°	105	95	45	17	13	81
160°-170°	30.1	5.7	1.7	145°	121	110	80	35	28	76
170°-180°	10.9	2.1	0.6	155°	126	118	100	66	54	58
0°-30°	96.2	18.4	5.3	165°	125	121	111	92	82	35
0°-40°	150.1	28.7	8.3	175°	121	119	116	110	108	12
0°-60°	237.3	45.3	13.2	180°	116	116	116	116	116	
0°-90°	282.3	53.9	15.7							
90°-120°	37.5	7.2	2.1							
90°-150°	157.5	30.1	8.8							
90°-180°	241.0	46.0	13.4							
0°-180°	523.6	100.0	29.1							



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
0°	133.2	133.2	133.2	133.2	133.2	133.2	133.2	133.2	133.2
2.5°	135.2	136.5	136.0	134.8	133.3	131.7	130.2	129.2	129.3
5°	137.9	138.9	137.8	135.6	132.7	129.6	126.4	124.3	123.8
7.5°	140.1	140.8	139.0	136.0	131.8	126.9	122.0	118.3	117.5
10°	141.4	142.1	139.8	135.9	130.5	123.7	116.7	111.7	110.3
12.5°	142.2	142.8	140.2	135.4	128.8	120.1	111.0	104.5	102.5
15°	142.6	143.1	140.1	134.6	126.7	115.9	104.5	96.6	94.0
17.5°	142.5	142.7	139.5	133.5	124.4	111.3	97.8	88.7	86.1
20°	142.4	142.4	138.5	131.9	121.6	106.2	90.6	80.9	78.2
22.5°	142.0	141.7	137.1	130.1	118.4	100.7	83.4	73.2	70.9
25°	141.3	140.7	135.4	127.7	114.8	94.6	75.9	65.9	63.6
27.5°	140.3	139.5	133.6	124.9	110.5	87.6	68.1	58.1	55.9
30°	138.7	137.8	131.4	121.8	105.7	80.5	59.8	49.9	47.5
32.5°	137.0	135.8	128.9	118.2	100.1	72.3	51.2	41.3	39.6
35°	135.0	133.5	126.0	114.3	93.7	63.5	42.9	33.8	33.4
37.5°	132.4	130.8	122.5	109.5	85.9	53.5	35.5	27.7	27.5
40°	128.9	127.3	118.8	104.2	76.6	44.7	29.6	22.7	22.5
42.5°	124.8	123.3	114.5	98.1	66.7	37.5	24.5	18.7	18.6
45°	120.3	118.6	109.6	90.4	56.4	31.1	20.4	15.5	15.3
47.5°	115.2	113.4	103.8	81.6	46.7	25.7	16.8	12.9	12.8
50°	109.4	107.6	97.1	72.3	39.0	21.4	14.0	11.4	11.5
52.5°	102.7	100.9	89.7	62.1	32.7	17.7	12.5	9.9	10.3
55°	95.3	93.2	80.6	51.7	27.4	14.4	11.0	8.7	9.1
57.5°	87.8	85.1	70.6	42.7	22.8	12.1	10.0	7.6	8.0
60°	79.7	76.3	60.0	35.4	18.7	10.0	9.0	6.6	7.2
62.5°	72.0	67.6	50.1	29.4	15.2	8.1	8.5	5.7	6.5
65°	63.5	58.7	41.2	24.2	12.6	6.9	8.1	5.2	6.1
67.5°	55.5	49.4	33.8	19.7	10.3	6.1	8.3	4.9	5.8
70°	46.1	40.7	27.6	16.0	8.5	5.3	8.7	4.0	4.8
72.5°	39.2	33.2	22.6	13.1	7.1	4.3	8.9	3.8	4.9
75°	32.9	28.0	18.3	10.8	6.0	3.4	8.3	4.0	5.0
77.5°	27.5	23.4	15.3	8.7	4.9	2.9	8.4	4.2	5.0
80°	23.1	19.7	13.2	7.3	4.0	2.6	8.5	4.1	5.0
82.5°	19.6	16.9	11.5	6.0	3.0	2.1	7.7	4.1	5.1
85°	16.8	14.8	10.0	5.4	2.2	2.0	6.4	4.2	5.3
87.5°	15.1	13.4	9.1	4.9	1.7	1.9	4.8	4.1	5.2
90°	14.2	12.6	8.8	4.4	1.2	1.6	2.9	3.1	4.4
92.5°	14.2	12.7	8.9	4.4	1.3	1.6	3.2	3.2	4.5
95°	15.1	13.3	9.1	4.7	1.8	1.7	4.1	3.6	4.7
97.5°	16.7	14.6	9.9	5.2	2.4	1.8	5.5	3.7	4.8
100°	19.0	16.5	11.3	6.1	3.1	2.3	7.2	3.6	4.7
102.5°	22.1	19.2	13.1	7.2	3.9	2.9	8.2	3.6	4.7
105°	26.3	22.6	15.0	8.7	4.9	3.2	8.3	3.7	4.7
107.5°	31.6	26.7	18.3	10.8	6.0	3.9	8.2	3.7	4.7
110°	37.0	31.2	22.2	13.4	7.2	4.8	8.9	3.6	4.6



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
112.5°	43.9	38.1	26.5	16.3	8.7	5.8	9.2	4.4	4.7
115°	51.6	45.8	31.7	19.8	10.6	6.5	8.9	4.6	5.5
117.5°	59.2	54.3	38.5	23.6	13.2	7.2	8.7	5.1	5.6
120°	66.3	62.3	46.9	28.5	16.0	8.3	8.9	5.7	6.4
122.5°	73.9	70.1	55.9	34.1	19.4	10.2	9.5	6.5	7.1
125°	80.5	77.6	65.1	40.7	22.8	12.5	10.2	7.4	7.9
127.5°	87.5	84.7	73.9	48.9	27.3	15.3	11.2	8.5	8.9
130°	94.0	91.4	82.0	58.2	32.2	18.3	12.5	9.7	10.0
132.5°	100.0	97.5	88.9	67.4	38.1	21.9	14.5	11.3	11.4
135°	105.2	103.0	94.7	75.5	45.0	25.7	17.3	13.3	13.2
137.5°	110.5	108.0	99.7	82.8	54.2	30.4	20.8	16.0	15.7
140°	114.6	112.2	104.0	89.2	63.6	36.5	24.5	19.3	18.9
142.5°	118.4	115.7	107.5	94.3	72.2	43.5	29.3	23.4	22.9
145°	121.2	118.4	110.5	98.9	80.0	52.0	35.1	28.0	27.5
147.5°	123.1	120.4	113.0	102.6	86.3	60.7	42.3	34.0	32.8
150°	124.6	121.9	115.1	105.8	91.8	68.5	50.1	41.1	39.2
152.5°	125.4	122.8	116.8	108.7	96.3	75.4	58.3	48.6	46.5
155°	125.7	123.4	118.2	111.1	100.2	81.9	65.7	56.2	54.0
157.5°	125.7	123.9	119.1	113.0	103.6	87.7	72.4	63.5	61.1
160°	125.6	124.0	120.0	114.6	106.4	92.9	79.1	70.7	68.1
162.5°	125.2	123.9	120.6	116.0	108.9	97.5	85.6	77.5	75.3
165°	124.8	123.7	121.0	117.1	111.0	101.6	91.8	84.9	82.4
167.5°	124.3	123.3	121.2	117.8	112.7	105.3	97.5	91.8	89.7
170°	123.6	122.7	121.0	118.2	114.1	108.4	102.5	98.1	96.6
172.5°	122.5	121.8	120.4	118.3	115.2	111.0	106.8	103.9	102.6
175°	120.9	120.4	119.4	118.0	115.9	113.1	110.5	108.7	108.0
177.5°	119.0	118.7	118.0	117.4	116.3	114.8	113.5	112.7	112.3
180°	116.1	116.1	116.1	116.1	116.1	116.1	116.1	116.1	116.1

(END OF REPORT)