

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: P309665

Luminaire Tested: **24FCZ2-60HE-UNV-L82765-HRP-CP187-W2A-U-4000K**

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: P309665
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1808-918-20)
Test Lab: INNOVATION CENTER(G3)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: 24FCZ2-60HE-UNV-L82765-HRP-CP187-W2A-U-4000K
Description: 2'X4' TROFFER LED MODULE, HIGH EFFICIENCY RND PERF. LENS, 0.187"
POLYCARB SHEET
Light Source: (336) 4000K TUNABLE CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER
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: 3907.0 lumens
Efficiency: N/A
Efficacy: 81.1 lumens/watt
Spacing Criteria (0/90/45): 1.24 / 1.3 / 1.4
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')
CIE Type: Direct

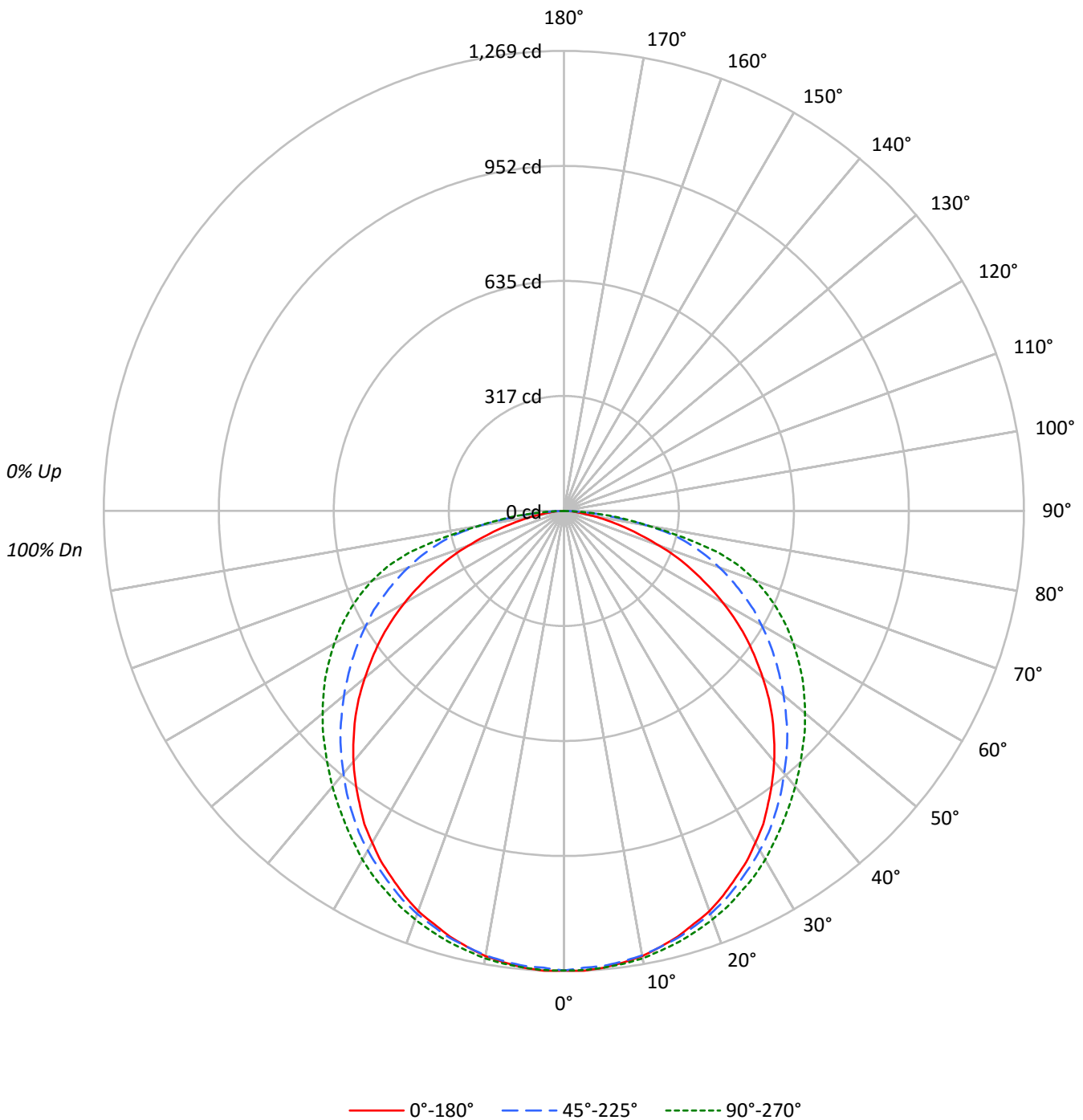
Input Watts (W): 48.2
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	108	103	98	94	105	101	96	93	96	93	90	92	90	87	89	86	84	82
2	98	89	82	76	95	87	80	75	83	78	73	80	75	71	77	73	70	67
3	89	78	69	62	86	76	68	62	73	66	61	70	64	59	68	63	58	56
4	81	68	59	52	79	67	59	52	65	57	51	62	56	50	60	54	50	48
5	74	61	52	45	72	60	51	45	58	50	44	56	49	44	54	48	43	41
6	69	55	46	39	67	54	45	39	52	44	38	50	43	38	49	42	38	36
7	63	50	41	34	62	49	40	34	47	39	34	46	39	34	44	38	33	31
8	59	45	36	30	57	44	36	30	43	36	30	42	35	30	41	34	30	28
9	55	41	33	27	54	41	33	27	40	32	27	39	32	27	38	31	27	25
10	52	38	30	25	50	38	30	25	37	30	25	36	29	24	35	29	24	23

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1706	1706	1706
5°	1708	1701	1708
10°	1703	1701	1712
15°	1693	1697	1713
20°	1682	1693	1717
25°	1661	1685	1719
30°	1642	1680	1725
35°	1615	1671	1727
40°	1586	1661	1744
45°	1550	1659	1771
50°	1500	1657	1818
55°	1446	1669	1884
60°	1365	1695	1967
65°	1260	1734	2078
70°	1100	1795	2214
75°	893	1888	2287
80°	659	1850	1850
85°	505	1363	1541



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	120.1	3.1
10°-20°	344.8	8.8
20°-30°	525.0	13.4
30°-40°	637.4	16.3
40°-50°	673.4	17.2
50°-60°	635.5	16.3
60°-70°	528.4	13.5
70°-80°	347.6	8.9
80°-90°	94.8	2.4
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°	989.9	25.3
0°-40°	1627.3	41.7
0°-60°	2936.2	75.2
0°-90°	3907.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3907.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1268	1268	1268	1268	1268	
5°	1264	1264	1260	1264	1264	120
15°	1215	1217	1219	1230	1230	343
25°	1119	1125	1135	1155	1158	516
35°	983	994	1017	1044	1052	615
45°	815	831	872	914	931	627
55°	617	643	712	779	803	549
65°	396	442	545	625	653	391
75°	172	250	363	430	440	185
85°	33	72	88	98	100	40
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1267.6	1267.6	1267.6	1267.6	1267.6
2.5°	1269.3	1267.6	1261.1	1267.6	1267.6
5°	1264.4	1264.4	1259.5	1264.4	1264.4
7.5°	1256.2	1256.2	1252.9	1259.5	1259.5
10°	1246.4	1246.4	1244.7	1252.9	1252.9
12.5°	1231.6	1233.3	1231.6	1241.5	1241.5
15°	1215.3	1216.9	1218.6	1230.0	1230.0
17.5°	1194.0	1197.3	1200.6	1213.7	1215.3
20°	1174.4	1176.0	1182.6	1197.3	1198.9
22.5°	1148.2	1153.1	1161.3	1176.0	1180.9
25°	1118.8	1125.3	1135.1	1154.8	1158.0
27.5°	1091.0	1095.9	1109.0	1130.2	1136.8
30°	1056.6	1064.8	1081.2	1102.4	1110.6
32.5°	1023.9	1032.1	1051.7	1074.6	1081.2
35°	983.0	994.5	1017.4	1043.5	1051.7
37.5°	943.8	955.2	983.0	1012.5	1022.3
40°	902.9	916.0	945.4	979.8	992.8
42.5°	858.7	876.7	909.4	947.0	961.8
45°	814.6	830.9	871.8	914.3	930.7
47.5°	767.1	786.7	830.9	881.6	901.2
50°	716.4	740.9	791.7	847.3	868.5
52.5°	665.7	693.5	750.8	812.9	835.8
55°	616.6	642.8	711.5	778.6	803.1
57.5°	562.7	595.4	670.6	742.6	767.1
60°	507.1	543.0	629.7	705.0	731.1
62.5°	451.4	492.3	590.5	665.7	693.5
65°	395.8	441.6	544.7	624.8	652.6
67.5°	341.9	392.6	502.1	582.3	610.1
70°	279.7	343.5	456.3	534.9	562.7
72.5°	222.4	296.1	412.2	485.8	510.3
75°	171.7	250.3	363.1	430.2	440.0
77.5°	125.9	204.5	312.4	335.3	336.9
80°	85.1	163.6	238.8	235.5	238.8
82.5°	55.6	122.7	150.5	168.5	170.1
85°	32.7	72.0	88.3	98.1	99.8
87.5°	16.4	24.5	31.1	32.7	36.0
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)