

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: P311698

Luminaire Tested: **24FCZ2-60HE-UNV-L82765-S-CP250-W2A-U-3500K**

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: P311698
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1805-783-1)
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-S-CP250-W2A-U-3500K
Description: 2'X4' TROFFER LED MODULE, SMOOTH LENS, 0.250" POLYCARB SHEET
Light Source: (336) 3500K 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: 5252.0 lumens
Efficiency: N/A
Efficacy: 109.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.26 / 1.35
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')
CIE Type: Direct

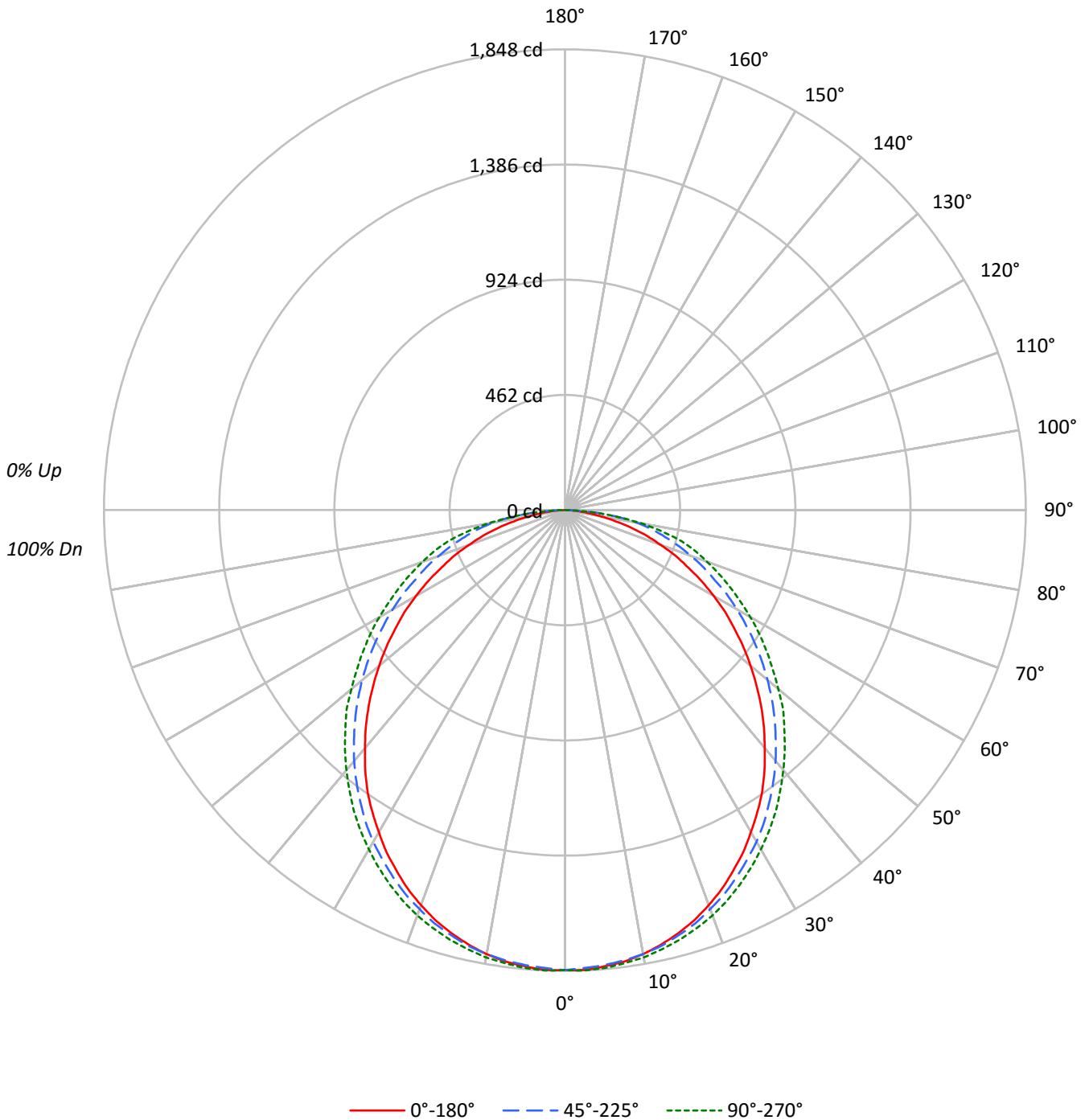
Input Watts (W): 47.8
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	108	103	99	95	106	101	97	93	97	93	90	93	90	88	89	87	85	83
2	98	90	83	77	96	88	81	76	84	79	74	81	76	72	78	74	71	69
3	89	79	70	64	87	77	69	63	74	67	62	71	66	61	69	64	60	58
4	82	70	61	54	80	68	60	54	66	59	53	63	57	52	61	56	51	49
5	75	62	53	46	73	61	53	46	59	51	46	57	50	45	55	49	45	42
6	70	56	47	40	68	55	47	40	53	46	40	52	45	40	50	44	39	37
7	64	51	42	36	63	50	42	36	48	41	35	47	40	35	46	39	35	33
8	60	46	38	32	58	46	37	32	44	37	32	43	36	31	42	36	31	29
9	56	43	34	29	55	42	34	29	41	34	28	40	33	28	39	33	28	26
10	53	39	31	26	51	39	31	26	38	31	26	37	30	26	36	30	26	24

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2483	2483	2483
5°	2481	2474	2490
10°	2471	2471	2489
15°	2447	2459	2484
20°	2415	2439	2477
25°	2370	2415	2462
30°	2317	2387	2442
35°	2266	2348	2422
40°	2189	2309	2394
45°	2117	2263	2368
50°	2036	2221	2340
55°	1945	2180	2317
60°	1854	2146	2312
65°	1737	2109	2326
70°	1608	2120	2389
75°	1439	2159	2524
80°	1163	2288	2469
85°	875	2008	1958



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	174.7	3.3
10°-20°	499.1	9.5
20°-30°	750.3	14.3
30°-40°	893.7	17.0
40°-50°	914.7	17.4
50°-60°	823.5	15.7
60°-70°	646.7	12.3
70°-80°	419.7	8.0
80°-90°	129.8	2.5
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°	1424.0	27.1
0°-40°	2317.7	44.1
0°-60°	4055.8	77.2
0°-90°	5252.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5252.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1845	1845	1845	1845	1845	
5°	1837	1840	1832	1842	1843	175
15°	1757	1762	1765	1780	1783	495
25°	1596	1610	1626	1653	1658	735
35°	1380	1396	1430	1465	1475	861
45°	1113	1139	1189	1234	1244	858
55°	829	866	929	978	988	743
65°	546	587	662	717	731	543
75°	277	330	415	472	486	293
85°	57	105	130	127	127	68
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1845.1	1845.1	1845.1	1845.1	1845.1
2.5°	1846.7	1846.7	1838.4	1846.7	1848.4
5°	1836.7	1840.1	1831.7	1841.7	1843.4
7.5°	1826.7	1826.7	1821.7	1831.7	1833.4
10°	1808.4	1810.0	1808.4	1820.0	1821.7
12.5°	1785.0	1788.3	1790.0	1801.7	1803.4
15°	1756.6	1761.7	1765.0	1780.0	1783.3
17.5°	1724.9	1730.0	1738.3	1755.0	1758.3
20°	1686.6	1693.3	1703.3	1724.9	1730.0
22.5°	1644.9	1651.5	1668.2	1688.2	1696.6
25°	1596.5	1609.8	1626.5	1653.2	1658.2
27.5°	1548.1	1559.8	1581.5	1609.8	1616.5
30°	1491.4	1509.7	1536.4	1564.8	1571.5
32.5°	1436.3	1454.7	1486.4	1516.4	1524.8
35°	1379.6	1396.3	1429.7	1464.7	1474.7
37.5°	1314.6	1336.3	1373.0	1408.0	1418.0
40°	1246.2	1272.9	1314.6	1351.3	1362.9
42.5°	1181.1	1209.5	1251.2	1291.2	1304.6
45°	1112.7	1139.4	1189.4	1234.5	1244.5
47.5°	1042.6	1072.7	1126.1	1171.1	1187.8
50°	972.6	1004.3	1061.0	1107.7	1117.7
52.5°	902.5	935.9	995.9	1046.0	1051.0
55°	829.1	865.8	929.2	977.6	987.6
57.5°	762.4	794.1	862.5	912.5	924.2
60°	689.0	724.0	797.4	844.1	859.1
62.5°	618.9	655.6	732.4	779.1	792.4
65°	545.5	587.2	662.3	717.3	730.7
67.5°	482.1	522.2	602.2	655.6	669.0
70°	408.7	453.8	538.8	593.9	607.2
72.5°	345.3	392.0	477.1	530.5	550.5
75°	276.9	330.3	415.4	472.1	485.5
77.5°	210.2	271.9	358.7	402.0	402.0
80°	150.1	215.2	295.3	315.3	318.6
82.5°	98.4	161.8	218.5	216.9	216.9
85°	56.7	105.1	130.1	126.8	126.8
87.5°	21.7	43.4	46.7	46.7	45.0
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)