

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: P311670

Luminaire Tested: **24FCZ2-60HE-UNV-L82765-S-CA125-W2A-U-3000K**

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: P311670
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-CA125-W2A-U-3000K
Description: 2'X4' TROFFER LED MODULE, SMOOTH LENS, 0.125" ACRYLIC SHEET
Light Source: (336) 3000K 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: 5451.0 lumens
Efficiency: N/A
Efficacy: 115.2 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

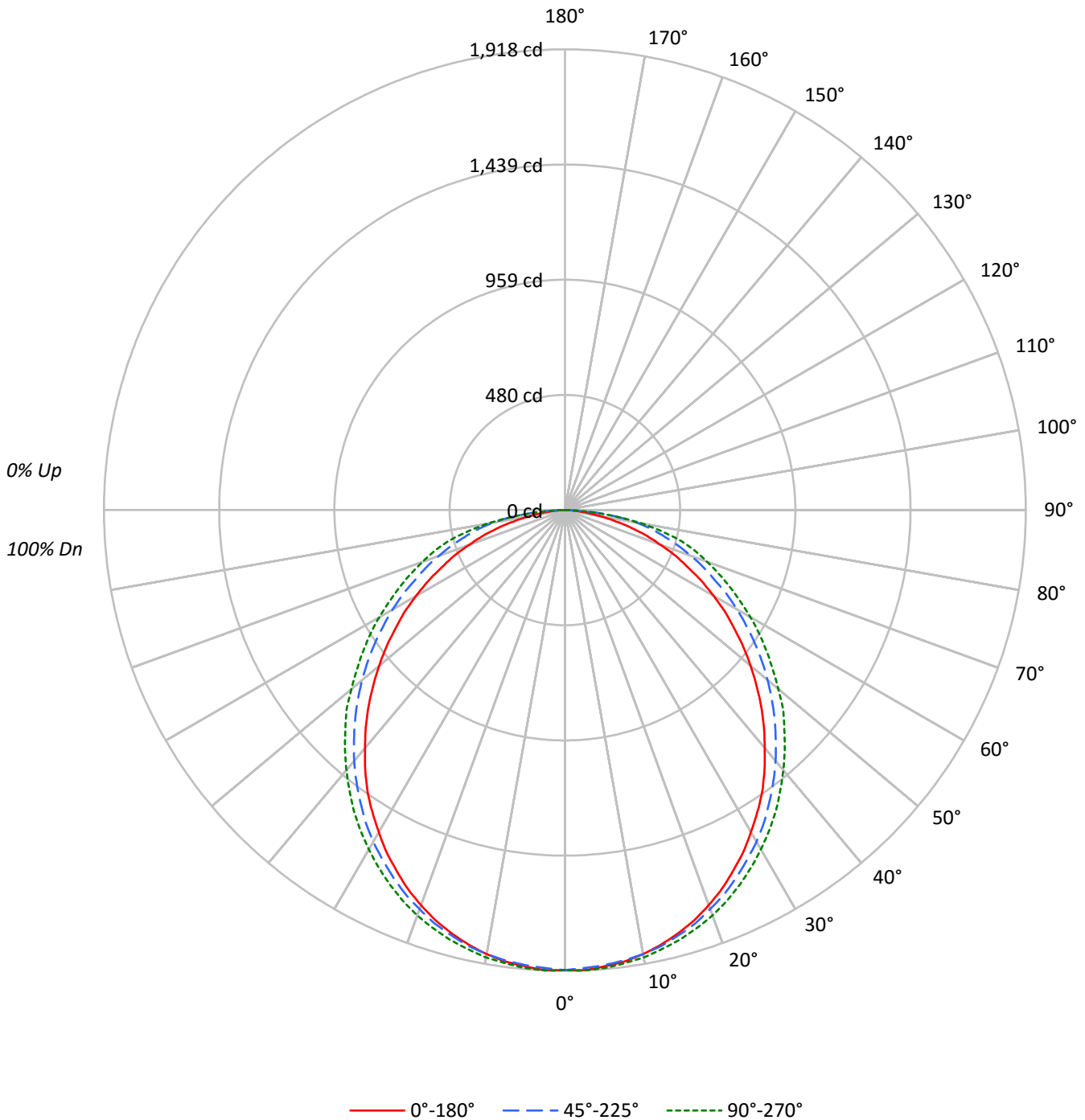
Input Watts (W): 47.3
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	2577	2577	2577
5°	2575	2568	2584
10°	2564	2564	2583
15°	2540	2552	2578
20°	2506	2531	2571
25°	2460	2506	2555
30°	2405	2478	2534
35°	2352	2437	2514
40°	2272	2396	2485
45°	2198	2349	2458
50°	2113	2305	2428
55°	2019	2262	2404
60°	1924	2227	2400
65°	1803	2188	2415
70°	1669	2200	2479
75°	1494	2241	2619
80°	1207	2375	2562
85°	909	2086	2032



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	181.3	3.3
10°-20°	518.0	9.5
20°-30°	778.7	14.3
30°-40°	927.5	17.0
40°-50°	949.3	17.4
50°-60°	854.6	15.7
60°-70°	671.2	12.3
70°-80°	435.6	8.0
80°-90°	134.7	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°	1478.0	27.1
0°-40°	2405.5	44.1
0°-60°	4209.5	77.2
0°-90°	5451.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5451.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1915	1915	1915	1915	1915	
5°	1906	1910	1901	1912	1913	181
15°	1823	1828	1832	1847	1851	514
25°	1657	1671	1688	1716	1721	763
35°	1432	1449	1484	1520	1531	893
45°	1155	1183	1234	1281	1292	890
55°	860	899	964	1015	1025	771
65°	566	610	687	744	758	564
75°	287	343	431	490	504	304
85°	59	109	135	132	132	71
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1915.0	1915.0	1915.0	1915.0	1915.0
2.5°	1916.7	1916.7	1908.0	1916.7	1918.4
5°	1906.3	1909.8	1901.1	1911.5	1913.2
7.5°	1895.9	1895.9	1890.7	1901.1	1902.9
10°	1876.9	1878.6	1876.9	1889.0	1890.7
12.5°	1852.6	1856.1	1857.8	1870.0	1871.7
15°	1823.2	1828.4	1831.9	1847.4	1850.9
17.5°	1790.3	1795.5	1804.2	1821.5	1824.9
20°	1750.5	1757.4	1767.8	1790.3	1795.5
22.5°	1707.2	1714.1	1731.4	1752.2	1760.9
25°	1657.0	1670.8	1688.2	1715.9	1721.1
27.5°	1606.8	1618.9	1641.4	1670.8	1677.8
30°	1547.9	1567.0	1594.7	1624.1	1631.0
32.5°	1490.8	1509.8	1542.7	1573.9	1582.5
35°	1431.9	1449.2	1483.8	1520.2	1530.6
37.5°	1364.4	1386.9	1425.0	1461.3	1471.7
40°	1293.4	1321.1	1364.4	1402.5	1414.6
42.5°	1225.9	1255.3	1298.6	1340.1	1354.0
45°	1154.9	1182.6	1234.5	1281.3	1291.7
47.5°	1082.1	1113.3	1168.7	1215.5	1232.8
50°	1009.4	1042.3	1101.2	1149.7	1160.1
52.5°	936.7	971.3	1033.7	1085.6	1090.8
55°	860.5	898.6	964.4	1014.6	1025.0
57.5°	791.3	824.2	895.2	947.1	959.2
60°	715.1	751.4	827.6	876.1	891.7
62.5°	642.4	680.5	760.1	808.6	822.4
65°	566.2	609.5	687.4	744.5	758.4
67.5°	500.4	541.9	625.0	680.5	694.3
70°	424.2	471.0	559.3	616.4	630.2
72.5°	358.4	406.9	495.2	550.6	571.4
75°	287.4	342.8	431.1	490.0	503.8
77.5°	218.2	282.2	372.3	417.3	417.3
80°	155.8	223.4	306.5	327.2	330.7
82.5°	102.2	167.9	226.8	225.1	225.1
85°	58.9	109.1	135.1	131.6	131.6
87.5°	22.5	45.0	48.5	48.5	46.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)