

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: P311661

Luminaire Tested: **24FCZ2-60HE-UNV-L82765-S-CA08-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: P311661  
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-CA08-W2A-U-3000K  
Description: 2'X4' TROFFER LED MODULE, SMOOTH LENS, 0.08" 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**

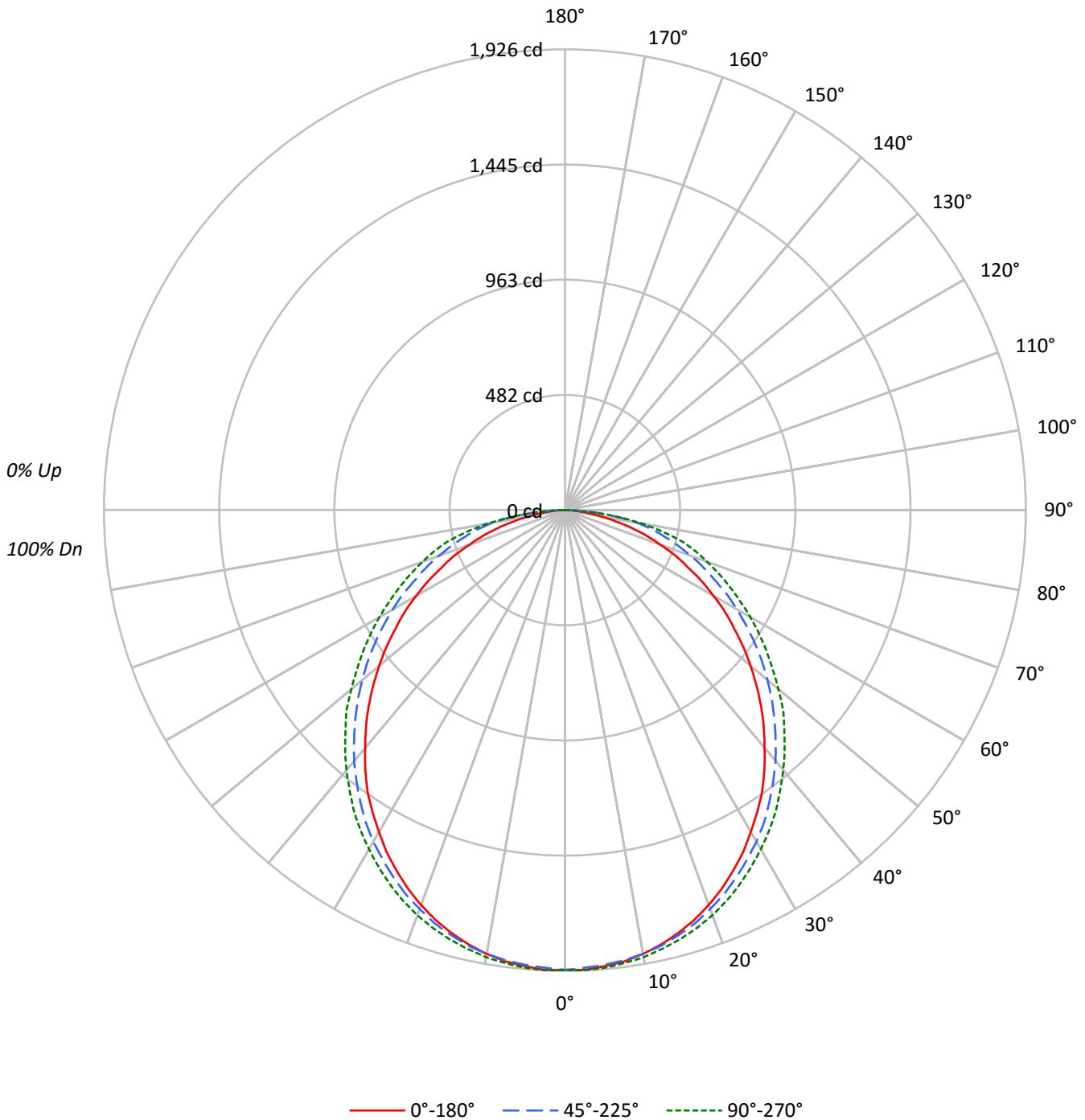
Lumens per Lamp: N/A  
Luminaire Lumens: 5471.0 lumens  
Efficiency: N/A  
Efficacy: 115.7 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.26 / 1.35  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 47.3  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): 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°	2586	2586	2586
5°	2584	2577	2594
10°	2574	2574	2593
15°	2549	2561	2588
20°	2516	2541	2580
25°	2469	2515	2564
30°	2414	2487	2543
35°	2361	2446	2523
40°	2280	2405	2494
45°	2206	2358	2467
50°	2121	2313	2437
55°	2026	2271	2413
60°	1931	2235	2408
65°	1809	2196	2423
70°	1675	2208	2489
75°	1500	2249	2629
80°	1212	2383	2572
85°	912	2092	2039



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	182.0	3.3
10°-20°	519.9	9.5
20°-30°	781.5	14.3
30°-40°	931.0	17.0
40°-50°	952.8	17.4
50°-60°	857.8	15.7
60°-70°	673.6	12.3
70°-80°	437.2	8.0
80°-90°	135.2	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°	1483.4	27.1
0°-40°	2414.4	44.1
0°-60°	4224.9	77.2
0°-90°	5471.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5471.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1922	1922	1922	1922	1922	
5°	1913	1917	1908	1918	1920	182
15°	1830	1835	1839	1854	1858	516
25°	1663	1677	1694	1722	1727	766
35°	1437	1454	1489	1526	1536	897
45°	1159	1187	1239	1286	1296	894
55°	864	902	968	1018	1029	774
65°	568	612	690	747	761	566
75°	288	344	433	492	506	305
85°	59	110	136	132	132	71
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1922.0	1922.0	1922.0	1922.0	1922.0
2.5°	1923.7	1923.7	1915.0	1923.7	1925.5
5°	1913.3	1916.8	1908.1	1918.5	1920.3
7.5°	1902.9	1902.9	1897.7	1908.1	1909.8
10°	1883.8	1885.5	1883.8	1895.9	1897.7
12.5°	1859.4	1862.9	1864.7	1876.8	1878.6
15°	1829.9	1835.1	1838.6	1854.2	1857.7
17.5°	1796.9	1802.1	1810.8	1828.2	1831.6
20°	1756.9	1763.9	1774.3	1796.9	1802.1
22.5°	1713.5	1720.4	1737.8	1758.6	1767.3
25°	1663.1	1677.0	1694.3	1722.2	1727.4
27.5°	1612.7	1624.8	1647.4	1677.0	1683.9
30°	1553.6	1572.7	1600.5	1630.0	1637.0
32.5°	1496.2	1515.4	1548.4	1579.7	1588.3
35°	1437.2	1454.5	1489.3	1525.8	1536.2
37.5°	1369.4	1392.0	1430.2	1466.7	1477.1
40°	1298.1	1325.9	1369.4	1407.6	1419.8
42.5°	1230.4	1259.9	1303.3	1345.1	1359.0
45°	1159.1	1186.9	1239.0	1286.0	1296.4
47.5°	1086.1	1117.4	1173.0	1219.9	1237.3
50°	1013.1	1046.2	1105.2	1153.9	1164.3
52.5°	940.1	974.9	1037.5	1089.6	1094.8
55°	863.7	901.9	968.0	1018.3	1028.8
57.5°	794.2	827.2	898.4	950.6	962.7
60°	717.7	754.2	830.7	879.3	895.0
62.5°	644.7	683.0	762.9	811.5	825.5
65°	568.3	611.7	689.9	747.3	761.2
67.5°	502.2	543.9	627.3	683.0	696.9
70°	425.8	472.7	561.3	618.7	632.6
72.5°	359.7	408.4	497.0	552.6	573.5
75°	288.5	344.1	432.7	491.8	505.7
77.5°	219.0	283.3	373.6	418.8	418.8
80°	156.4	224.2	307.6	328.4	331.9
82.5°	102.5	168.6	227.7	225.9	225.9
85°	59.1	109.5	135.5	132.1	132.1
87.5°	22.6	45.2	48.7	48.7	46.9
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)