

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: P311673

Luminaire Tested: **24FCZ2-60HE-UNV-L82765-S-CA125-W2A-U-4500K**

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: P311673
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-4500K
Description: 2'X4' TROFFER LED MODULE, SMOOTH LENS, 0.125" ACRYLIC SHEET
Light Source: (336) 4500K 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: 5866.0 lumens
Efficiency: N/A
Efficacy: 120.9 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

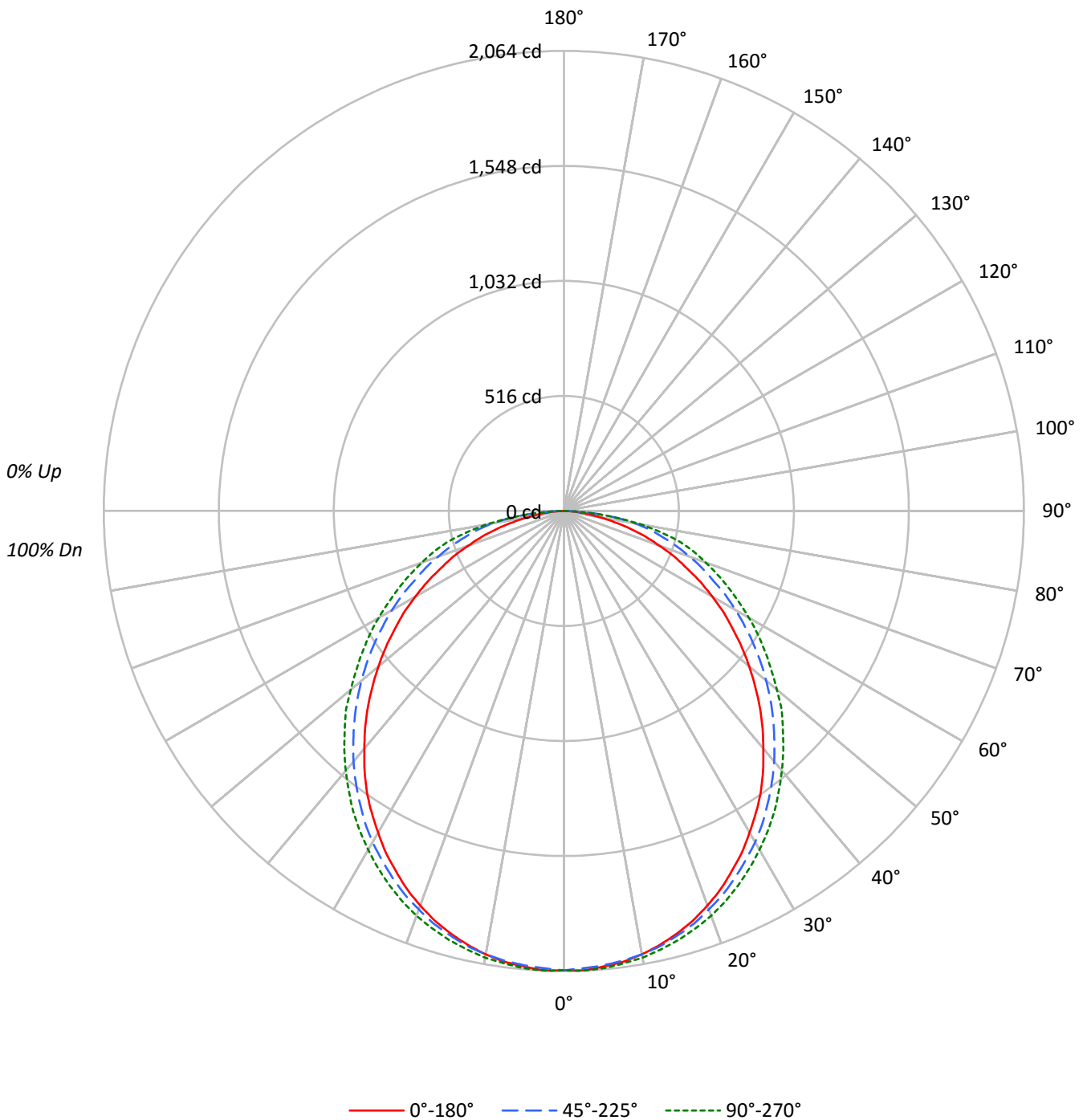
Input Watts (W): 48.5
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	2773	2773	2773
5°	2771	2763	2781
10°	2760	2760	2780
15°	2733	2746	2774
20°	2697	2724	2767
25°	2647	2697	2750
30°	2588	2666	2727
35°	2531	2623	2705
40°	2445	2579	2674
45°	2365	2528	2645
50°	2274	2480	2613
55°	2172	2434	2587
60°	2071	2397	2582
65°	1940	2355	2598
70°	1796	2367	2668
75°	1608	2412	2819
80°	1299	2555	2758
85°	979	2243	2186



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	195.1	3.3
10°-20°	557.5	9.5
20°-30°	838.0	14.3
30°-40°	998.2	17.0
40°-50°	1021.6	17.4
50°-60°	919.7	15.7
60°-70°	722.3	12.3
70°-80°	468.8	8.0
80°-90°	145.0	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°	1590.5	27.1
0°-40°	2588.7	44.1
0°-60°	4530.0	77.2
0°-90°	5866.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5866.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2061	2061	2061	2061	2061	
5°	2051	2055	2046	2057	2059	195
15°	1962	1968	1971	1988	1992	553
25°	1783	1798	1817	1846	1852	821
35°	1541	1560	1597	1636	1647	961
45°	1243	1273	1328	1379	1390	958
55°	926	967	1038	1092	1103	830
65°	609	656	740	801	816	607
75°	309	369	464	527	542	327
85°	63	117	145	142	142	77
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2060.8	2060.8	2060.8	2060.8	2060.8
2.5°	2062.6	2062.6	2053.3	2062.6	2064.5
5°	2051.4	2055.2	2045.9	2057.0	2058.9
7.5°	2040.3	2040.3	2034.7	2045.9	2047.7
10°	2019.8	2021.6	2019.8	2032.8	2034.7
12.5°	1993.7	1997.4	1999.3	2012.3	2014.2
15°	1962.0	1967.6	1971.3	1988.1	1991.8
17.5°	1926.6	1932.2	1941.5	1960.1	1963.9
20°	1883.8	1891.2	1902.4	1926.6	1932.2
22.5°	1837.2	1844.6	1863.3	1885.6	1894.9
25°	1783.1	1798.0	1816.7	1846.5	1852.1
27.5°	1729.1	1742.1	1766.4	1798.0	1805.5
30°	1665.8	1686.2	1716.1	1747.7	1755.2
32.5°	1604.3	1624.8	1660.2	1693.7	1703.0
35°	1540.9	1559.5	1596.8	1635.9	1647.1
37.5°	1468.2	1492.5	1533.5	1572.6	1583.8
40°	1391.9	1421.7	1468.2	1509.2	1522.3
42.5°	1319.2	1350.9	1397.4	1442.2	1457.1
45°	1242.8	1272.6	1328.5	1378.8	1390.0
47.5°	1164.5	1198.1	1257.7	1308.0	1326.6
50°	1086.3	1121.7	1185.0	1237.2	1248.4
52.5°	1008.0	1045.3	1112.4	1168.3	1173.9
55°	926.0	967.0	1037.8	1091.9	1103.0
57.5°	851.5	886.9	963.3	1019.2	1032.2
60°	769.5	808.7	890.6	942.8	959.6
62.5°	691.3	732.3	818.0	870.1	885.0
65°	609.3	655.9	739.7	801.2	816.1
67.5°	538.5	583.2	672.6	732.3	747.2
70°	456.5	506.8	601.8	663.3	678.2
72.5°	385.7	437.9	532.9	592.5	614.9
75°	309.3	368.9	464.0	527.3	542.2
77.5°	234.8	303.7	400.6	449.0	449.0
80°	167.7	240.4	329.8	352.2	355.9
82.5°	109.9	180.7	244.1	242.2	242.2
85°	63.4	117.4	145.3	141.6	141.6
87.5°	24.2	48.4	52.2	52.2	50.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)