

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: P311682

Luminaire Tested: **24FCZ2-60HE-UNV-L82765-S-CP125-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: P311682
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-CP125-W2A-U-4500K
Description: 2'X4' TROFFER LED MODULE, SMOOTH LENS, 0.125" POLYCARB 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

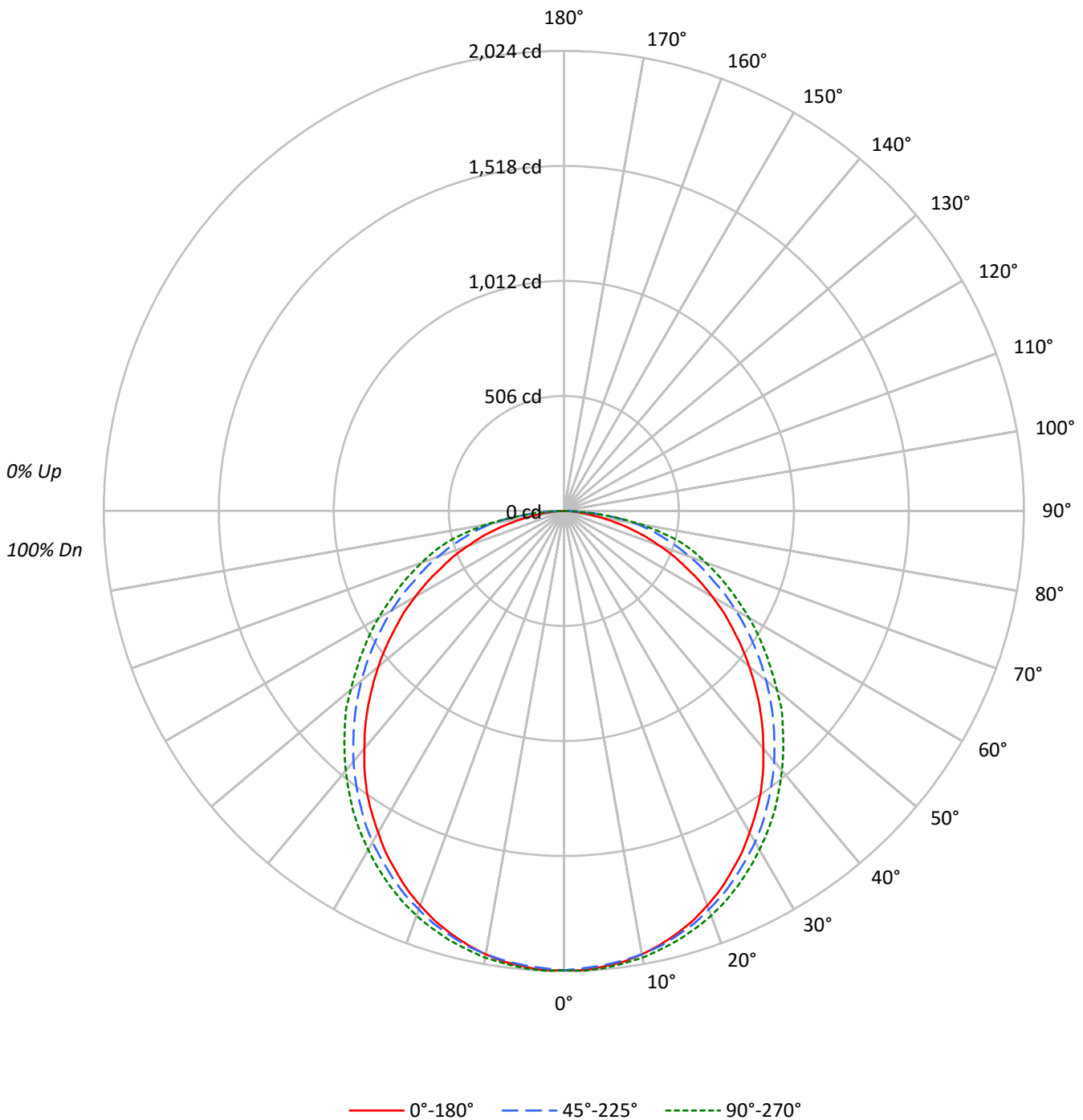
Lumens per Lamp: N/A
Luminaire Lumens: 5752.0 lumens
Efficiency: N/A
Efficacy: 118.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.26 / 1.35
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')
CIE Type: Direct

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°	2719	2719	2719
5°	2717	2709	2727
10°	2706	2706	2726
15°	2680	2693	2721
20°	2645	2671	2713
25°	2596	2645	2696
30°	2538	2614	2674
35°	2482	2572	2653
40°	2397	2529	2622
45°	2319	2479	2594
50°	2230	2432	2562
55°	2130	2387	2537
60°	2031	2350	2532
65°	1902	2309	2548
70°	1761	2321	2616
75°	1577	2365	2764
80°	1274	2506	2704
85°	959	2200	2144



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	191.3	3.3
10°-20°	546.6	9.5
20°-30°	821.7	14.3
30°-40°	978.8	17.0
40°-50°	1001.7	17.4
50°-60°	901.8	15.7
60°-70°	708.2	12.3
70°-80°	459.7	8.0
80°-90°	142.2	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°	1559.6	27.1
0°-40°	2538.4	44.1
0°-60°	4442.0	77.2
0°-90°	5752.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5752.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2021	2021	2021	2021	2021	
5°	2012	2015	2006	2017	2019	191
15°	1924	1929	1933	1950	1953	542
25°	1748	1763	1781	1811	1816	805
35°	1511	1529	1566	1604	1615	943
45°	1219	1248	1303	1352	1363	940
55°	908	948	1018	1071	1082	814
65°	597	643	725	786	800	595
75°	303	362	455	517	532	321
85°	62	115	142	139	139	75
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2020.7	2020.7	2020.7	2020.7	2020.7
2.5°	2022.5	2022.5	2013.4	2022.5	2024.4
5°	2011.6	2015.2	2006.1	2017.1	2018.9
7.5°	2000.6	2000.6	1995.1	2006.1	2007.9
10°	1980.5	1982.3	1980.5	1993.3	1995.1
12.5°	1954.9	1958.6	1960.4	1973.2	1975.0
15°	1923.9	1929.4	1933.0	1949.5	1953.1
17.5°	1889.2	1894.6	1903.8	1922.1	1925.7
20°	1847.1	1854.5	1865.4	1889.2	1894.6
22.5°	1801.5	1808.8	1827.0	1849.0	1858.1
25°	1748.5	1763.1	1781.4	1810.6	1816.1
27.5°	1695.5	1708.3	1732.0	1763.1	1770.4
30°	1633.4	1653.5	1682.7	1713.8	1721.1
32.5°	1573.1	1593.2	1627.9	1660.8	1669.9
35°	1511.0	1529.2	1565.8	1604.1	1615.1
37.5°	1439.7	1463.5	1503.7	1542.0	1553.0
40°	1364.8	1394.0	1439.7	1479.9	1492.7
42.5°	1293.6	1324.6	1370.3	1414.1	1428.8
45°	1218.6	1247.9	1302.7	1352.0	1363.0
47.5°	1141.9	1174.8	1233.3	1282.6	1300.9
50°	1065.2	1099.9	1162.0	1213.2	1224.1
52.5°	988.4	1025.0	1090.7	1145.6	1151.0
55°	908.0	948.2	1017.7	1070.7	1081.6
57.5°	835.0	869.7	944.6	999.4	1012.2
60°	754.6	792.9	873.3	924.5	940.9
62.5°	677.8	718.0	802.1	853.2	867.8
65°	597.4	643.1	725.3	785.6	800.2
67.5°	528.0	571.9	659.6	718.0	732.6
70°	447.6	497.0	590.1	650.4	665.0
72.5°	378.2	429.4	522.5	581.0	602.9
75°	303.3	361.8	454.9	517.1	531.7
77.5°	230.2	297.8	392.8	440.3	440.3
80°	164.4	235.7	323.4	345.3	349.0
82.5°	107.8	177.2	239.3	237.5	237.5
85°	62.1	115.1	142.5	138.9	138.9
87.5°	23.8	47.5	51.2	51.2	49.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)