

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: P310989

Luminaire Tested: **24FCZ2-60HE-UNV-L82765-CA08-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: P310989
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1805-783-15)
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-CA08-W2A-U-4500K
Description: 2'X4' TROFFER LED MODULE, RIBBED LENS, 0.08" 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: 5603.0 lumens
Efficiency: N/A
Efficacy: 115.5 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.29 / 1.38
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')
CIE Type: Direct

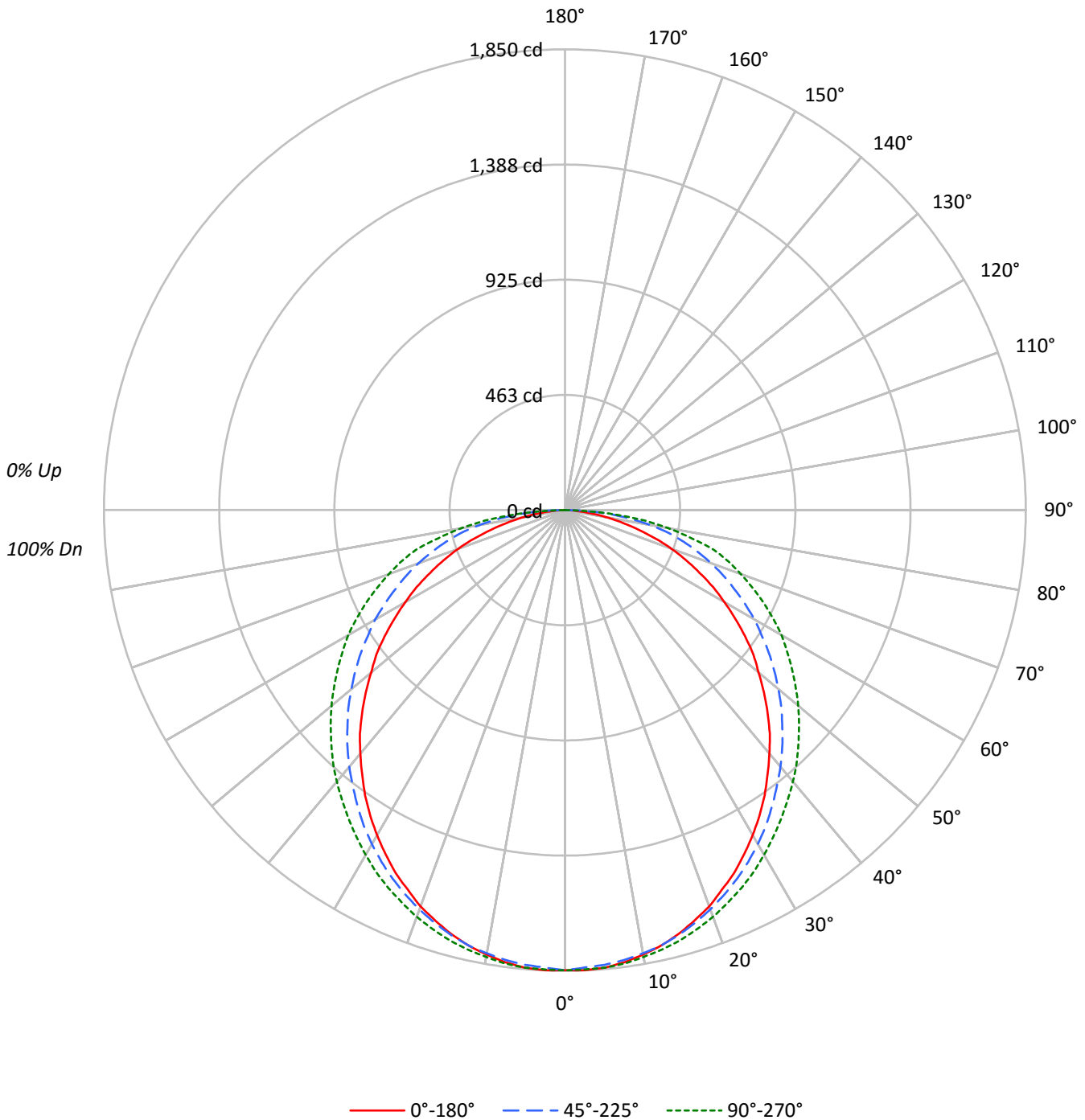
Input Watts (W): 48.5
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	98	94	105	100	96	92	96	92	89	92	89	87	88	86	84	82
2	98	89	81	75	95	87	80	74	83	78	73	80	75	71	77	73	69	67
3	89	77	69	62	86	76	68	61	73	66	60	70	64	59	67	62	58	56
4	81	68	59	52	79	67	58	52	64	57	51	62	56	50	60	54	50	47
5	74	61	52	45	72	60	51	44	58	50	44	56	49	43	54	48	43	41
6	69	55	46	39	67	54	45	39	52	44	38	50	43	38	49	42	38	36
7	64	50	41	34	62	49	40	34	47	39	34	46	39	34	44	38	33	31
8	59	45	37	31	57	45	36	30	43	36	30	42	35	30	41	34	30	28
9	55	41	33	27	54	41	33	27	40	32	27	39	32	27	38	31	27	25
10	52	38	30	25	50	38	30	25	37	30	25	36	29	25	35	29	24	23

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2486	2486	2486
5°	2491	2476	2491
10°	2476	2469	2489
15°	2455	2460	2491
20°	2425	2443	2489
25°	2387	2426	2487
30°	2342	2406	2484
35°	2296	2382	2485
40°	2243	2364	2501
45°	2190	2349	2522
50°	2125	2343	2560
55°	2071	2346	2612
60°	1991	2366	2701
65°	1900	2391	2799
70°	1799	2465	2954
75°	1604	2571	3228
80°	1368	2722	3298
85°	976	2697	3157



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	174.9	3.1
10°-20°	500.0	8.9
20°-30°	755.2	13.5
30°-40°	910.2	16.2
40°-50°	955.6	17.1
50°-60°	894.0	16.0
60°-70°	738.3	13.2
70°-80°	503.1	9.0
80°-90°	171.6	3.1
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°	1430.1	25.5
0°-40°	2340.4	41.8
0°-60°	4190.0	74.8
0°-90°	5603.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5603.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1848	1848	1848	1848	1848	
5°	1844	1842	1833	1844	1844	175
15°	1762	1764	1766	1785	1788	497
25°	1608	1615	1634	1666	1675	740
35°	1398	1413	1450	1498	1513	874
45°	1151	1175	1234	1301	1325	887
55°	883	918	1000	1082	1114	788
65°	597	647	751	846	879	592
75°	309	379	494	587	621	329
85°	63	125	175	197	204	79
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1847.8	1847.8	1847.8	1847.8	1847.8
2.5°	1849.7	1847.8	1838.5	1847.8	1846.0
5°	1844.1	1842.2	1832.9	1844.1	1844.1
7.5°	1831.1	1831.1	1821.8	1834.8	1836.7
10°	1812.5	1812.5	1806.9	1821.8	1821.8
12.5°	1790.2	1790.2	1790.2	1805.1	1806.9
15°	1762.3	1764.2	1766.0	1784.6	1788.3
17.5°	1728.8	1732.6	1738.1	1760.4	1764.2
20°	1693.5	1697.2	1706.5	1732.6	1738.1
22.5°	1648.9	1658.2	1671.2	1701.0	1706.5
25°	1608.0	1615.4	1634.0	1665.6	1674.9
27.5°	1557.8	1569.0	1593.1	1626.6	1639.6
30°	1507.6	1518.8	1548.5	1587.6	1598.7
32.5°	1453.7	1470.4	1502.1	1542.9	1556.0
35°	1397.9	1412.8	1450.0	1498.3	1513.2
37.5°	1336.6	1357.1	1397.9	1450.0	1468.6
40°	1277.1	1299.4	1345.9	1401.7	1424.0
42.5°	1217.6	1239.9	1292.0	1355.2	1377.5
45°	1150.7	1174.9	1234.4	1301.3	1325.4
47.5°	1083.8	1113.5	1178.6	1249.2	1275.3
50°	1015.0	1048.5	1119.1	1193.5	1223.2
52.5°	953.7	985.3	1059.6	1139.6	1167.4
55°	883.0	918.3	1000.1	1081.9	1113.5
57.5°	810.5	849.6	936.9	1026.2	1057.8
60°	739.9	782.6	879.3	968.5	1003.8
62.5°	671.1	713.8	814.2	907.2	942.5
65°	596.7	646.9	751.0	845.8	879.3
67.5°	526.1	580.0	689.7	782.6	816.1
70°	457.3	509.4	626.5	717.6	751.0
72.5°	382.9	442.4	559.6	654.4	689.7
75°	308.6	379.2	494.5	587.4	620.9
77.5°	239.8	312.3	427.6	503.8	520.5
80°	176.6	251.0	351.3	405.3	425.7
82.5°	113.4	187.8	267.7	306.7	323.5
85°	63.2	124.6	174.7	197.1	204.5
87.5°	26.0	53.9	70.6	79.9	79.9
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)