

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: P314456

Luminaire Tested: **24FCZ2-60HE-UNV-L83050-S-CP187-W2A-U-3500K**

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: P314456
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-L83050-S-CP187-W2A-U-3500K
Description: 2'X4' TROFFER LED MODULE, SMOOTH LENS, 0.187" POLYCARB SHEET
Light Source: (336) 3500K 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: 5422.0 lumens
Efficiency: N/A
Efficacy: 113.9 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

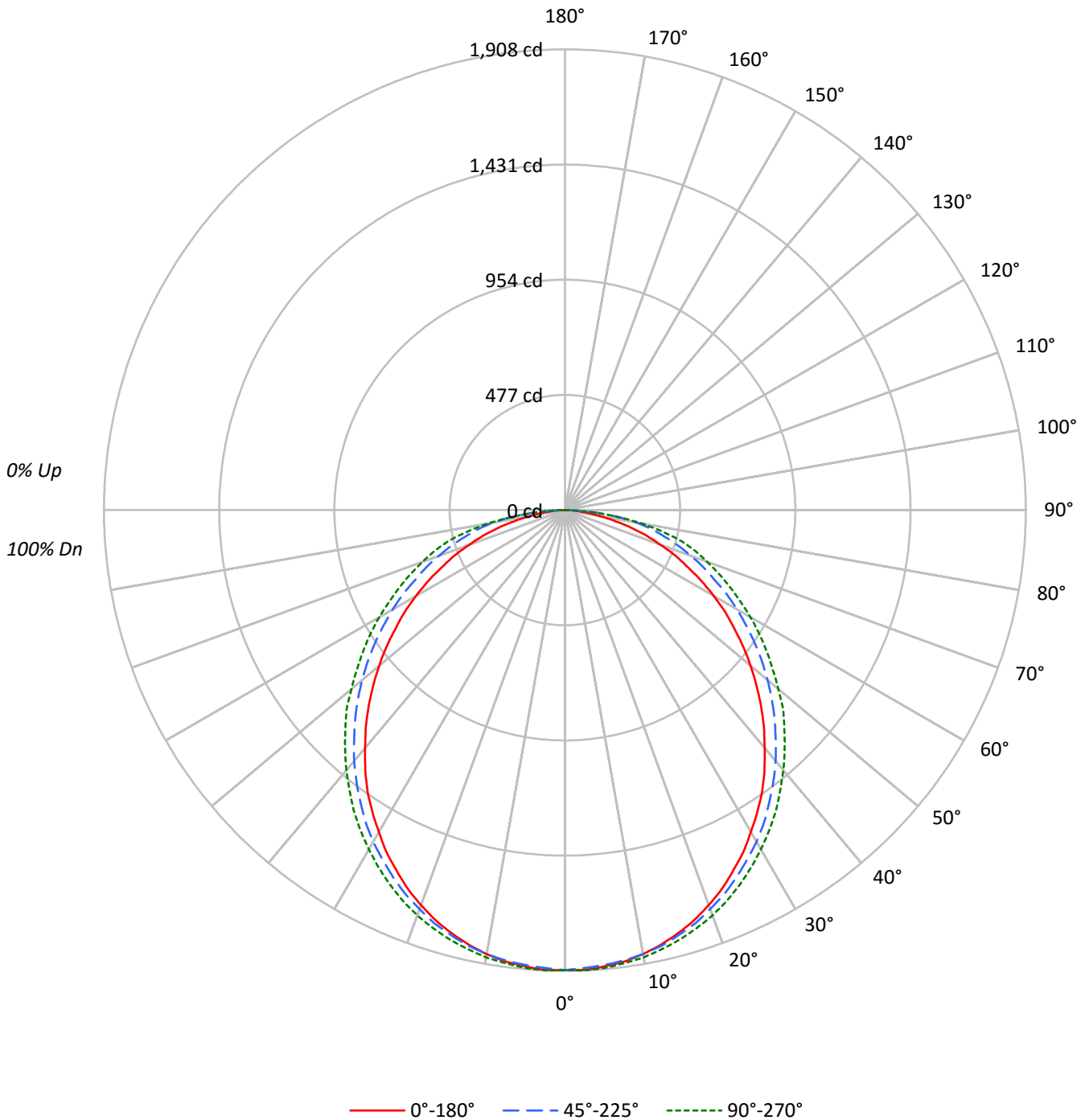
Input Watts (W): 47.6
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	2563	2563	2563
5°	2561	2554	2570
10°	2551	2551	2569
15°	2526	2538	2565
20°	2493	2518	2557
25°	2447	2493	2541
30°	2392	2464	2520
35°	2339	2424	2501
40°	2260	2384	2471
45°	2186	2336	2445
50°	2102	2293	2415
55°	2008	2250	2392
60°	1914	2215	2387
65°	1793	2177	2401
70°	1660	2188	2466
75°	1486	2229	2606
80°	1201	2362	2548
85°	905	2073	2021



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	180.3	3.3
10°-20°	515.3	9.5
20°-30°	774.5	14.3
30°-40°	922.6	17.0
40°-50°	944.2	17.4
50°-60°	850.1	15.7
60°-70°	667.6	12.3
70°-80°	433.3	8.0
80°-90°	134.0	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°	1470.1	27.1
0°-40°	2392.7	44.1
0°-60°	4187.1	77.2
0°-90°	5422.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5422.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1905	1905	1905	1905	1905	
5°	1896	1900	1891	1901	1903	180
15°	1814	1819	1822	1838	1841	511
25°	1648	1662	1679	1707	1712	759
35°	1424	1442	1476	1512	1522	889
45°	1149	1176	1228	1274	1285	886
55°	856	894	959	1009	1020	767
65°	563	606	684	741	754	561
75°	286	341	429	487	501	303
85°	59	108	134	131	131	71
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1904.8	1904.8	1904.8	1904.8	1904.8
2.5°	1906.5	1906.5	1897.9	1906.5	1908.2
5°	1896.2	1899.6	1891.0	1901.3	1903.1
7.5°	1885.8	1885.8	1880.7	1891.0	1892.7
10°	1866.9	1868.6	1866.9	1879.0	1880.7
12.5°	1842.8	1846.2	1848.0	1860.0	1861.7
15°	1813.5	1818.7	1822.1	1837.6	1841.1
17.5°	1780.8	1786.0	1794.6	1811.8	1815.2
20°	1741.2	1748.1	1758.4	1780.8	1786.0
22.5°	1698.1	1705.0	1722.2	1742.9	1751.5
25°	1648.2	1661.9	1679.2	1706.7	1711.9
27.5°	1598.2	1610.3	1632.7	1661.9	1668.8
30°	1539.7	1558.6	1586.2	1615.4	1622.3
32.5°	1482.8	1501.8	1534.5	1565.5	1574.1
35°	1424.3	1441.5	1475.9	1512.1	1522.4
37.5°	1357.1	1379.5	1417.4	1453.6	1463.9
40°	1286.5	1314.1	1357.1	1395.0	1407.1
42.5°	1219.3	1248.6	1291.7	1333.0	1346.8
45°	1148.7	1176.3	1227.9	1274.4	1284.8
47.5°	1076.4	1107.4	1162.5	1209.0	1226.2
50°	1004.1	1036.8	1095.3	1143.6	1153.9
52.5°	931.7	966.2	1028.2	1079.8	1085.0
55°	855.9	893.8	959.3	1009.2	1019.6
57.5°	787.1	819.8	890.4	942.1	954.1
60°	711.3	747.4	823.2	871.4	886.9
62.5°	638.9	676.8	756.1	804.3	818.1
65°	563.2	606.2	683.7	740.6	754.3
67.5°	497.7	539.1	621.7	676.8	690.6
70°	421.9	468.4	556.3	613.1	626.9
72.5°	356.5	404.7	492.6	547.7	568.3
75°	285.9	341.0	428.8	487.4	501.2
77.5°	217.0	280.7	370.3	415.1	415.1
80°	155.0	222.2	304.8	325.5	328.9
82.5°	101.6	167.1	225.6	223.9	223.9
85°	58.6	108.5	134.3	130.9	130.9
87.5°	22.4	44.8	48.2	48.2	46.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)