

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: P311699

Luminaire Tested: **24FCZ2-60HE-UNV-L82765-S-CP250-W2A-U-4000K**

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: P311699
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-CP250-W2A-U-4000K
Description: 2'X4' TROFFER LED MODULE, SMOOTH LENS, 0.250" POLYCARB SHEET
Light Source: (336) 4000K 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: 5368.0 lumens
Efficiency: N/A
Efficacy: 111.4 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

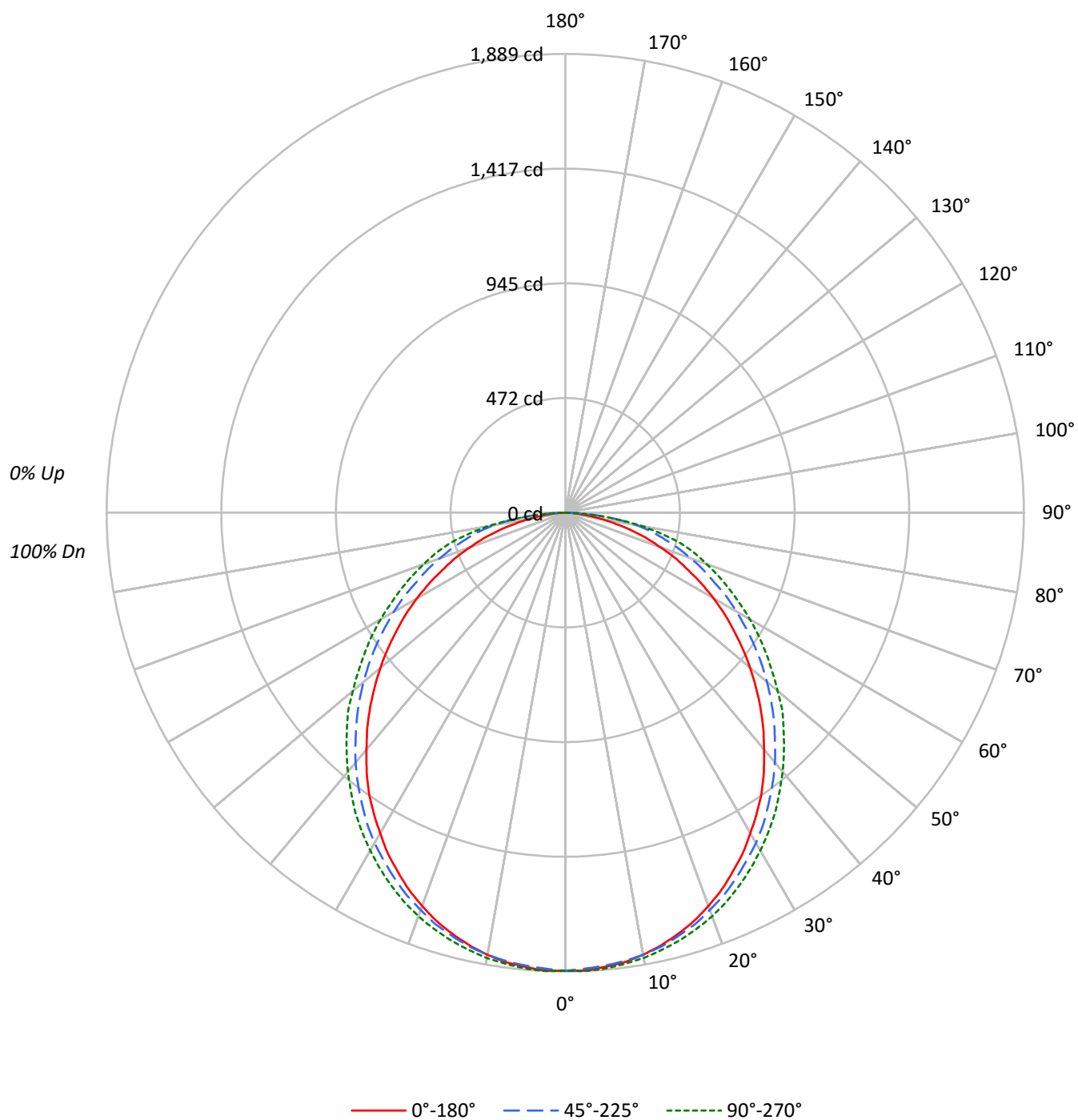
Input Watts (W): 48.2
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P311699

CATALOG NUMBER: 24FCZ2-60HE-UNV-L82765-S-CP250-W2A-U-4000K

Luminous Intensity Polar Plot





TEST NUMBER: P311699

CATALOG NUMBER: 24FCZ2-60HE-UNV-L82765-S-CP250-W2A-U-4000K

COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				20
RC	80				70				50				30				0
RW	70	50	30	10	70	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		100
1	108	103	99	95	106	101	97	93	97	93	90		93	90	88		83
2	98	90	83	77	96	88	81	76	84	79	74		81	76	72		69
3	89	79	70	64	87	77	69	63	74	67	62		71	66	61		58
4	82	70	61	54	80	68	60	54	66	59	53		63	57	52		49
5	75	62	53	46	73	61	53	46	59	51	46		57	50	45		42
6	70	56	47	40	68	55	47	40	53	46	40		52	45	40		37
7	64	51	42	36	63	50	42	36	48	41	35		47	40	35		33
8	60	46	38	32	58	46	37	32	44	37	32		43	36	31		29
9	56	43	34	29	55	42	34	29	41	34	28		40	33	28		26
10	53	39	31	26	51	39	31	26	38	31	26		37	30	26		24

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2537	2537	2537
5°	2536	2529	2545
10°	2525	2525	2544
15°	2501	2513	2539
20°	2468	2493	2532
25°	2423	2468	2516
30°	2368	2440	2495
35°	2316	2400	2476
40°	2237	2360	2447
45°	2164	2313	2420
50°	2081	2270	2391
55°	1988	2228	2368
60°	1895	2193	2363
65°	1775	2155	2378
70°	1643	2166	2441
75°	1471	2207	2580
80°	1189	2338	2524
85°	895	2053	2001



TEST NUMBER: P311699

CATALOG NUMBER: 24FCZ2-60HE-UNV-L82765-S-CP250-W2A-U-4000K

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	178.5	3.3
10°-20°	510.1	9.5
20°-30°	766.8	14.3
30°-40°	913.4	17.0
40°-50°	934.9	17.4
50°-60°	841.6	15.7
60°-70°	661.0	12.3
70°-80°	429.0	8.0
80°-90°	132.7	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°	1455.5	27.1
0°-40°	2368.9	44.1
0°-60°	4145.4	77.2
0°-90°	5368.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5368.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1886	1886	1886	1886	1886	
5°	1877	1881	1872	1882	1884	178
15°	1795	1801	1804	1819	1823	506
25°	1632	1645	1662	1690	1695	752
35°	1410	1427	1461	1497	1507	880
45°	1137	1165	1216	1262	1272	877
55°	847	885	950	999	1009	760
65°	558	600	677	733	747	555
75°	283	338	425	482	496	300
85°	58	107	133	130	130	70
90°	0	0	0	0	0	



TEST NUMBER: P311699

CATALOG NUMBER: 24FCZ2-60HE-UNV-L82765-S-CP250-W2A-U-4000K

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1885.8	1885.8	1885.8	1885.8	1885.8
2.5°	1887.5	1887.5	1879.0	1887.5	1889.2
5°	1877.3	1880.7	1872.2	1882.4	1884.1
7.5°	1867.1	1867.1	1861.9	1872.2	1873.9
10°	1848.3	1850.0	1848.3	1860.2	1861.9
12.5°	1824.4	1827.8	1829.5	1841.5	1843.2
15°	1795.4	1800.6	1804.0	1819.3	1822.7
17.5°	1763.0	1768.2	1776.7	1793.7	1797.1
20°	1723.8	1730.7	1740.9	1763.0	1768.2
22.5°	1681.2	1688.0	1705.1	1725.5	1734.1
25°	1631.8	1645.4	1662.4	1689.7	1694.8
27.5°	1582.3	1594.2	1616.4	1645.4	1652.2
30°	1524.3	1543.1	1570.4	1599.4	1606.2
32.5°	1468.1	1486.8	1519.2	1549.9	1558.4
35°	1410.1	1427.1	1461.2	1497.1	1507.3
37.5°	1343.6	1365.8	1403.3	1439.1	1449.3
40°	1273.7	1301.0	1343.6	1381.1	1393.0
42.5°	1207.2	1236.2	1278.8	1319.7	1333.4
45°	1137.3	1164.6	1215.7	1261.8	1272.0
47.5°	1065.7	1096.4	1150.9	1197.0	1214.0
50°	994.1	1026.5	1084.4	1132.2	1142.4
52.5°	922.4	956.5	1017.9	1069.1	1074.2
55°	847.4	884.9	949.7	999.2	1009.4
57.5°	779.2	811.6	881.5	932.7	944.6
60°	704.2	740.0	815.0	862.8	878.1
62.5°	632.6	670.1	748.5	796.3	809.9
65°	557.6	600.2	676.9	733.2	746.8
67.5°	492.8	533.7	615.5	670.1	683.7
70°	417.7	463.8	550.7	607.0	620.6
72.5°	353.0	400.7	487.7	542.2	562.7
75°	283.0	337.6	424.6	482.5	496.2
77.5°	214.8	277.9	366.6	410.9	410.9
80°	153.5	220.0	301.8	322.3	325.7
82.5°	100.6	165.4	223.4	221.7	221.7
85°	58.0	107.4	133.0	129.6	129.6
87.5°	22.2	44.3	47.7	47.7	46.0
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)