

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: P314463

Luminaire Tested: **24FCZ2-60HE-UNV-L83050-S-CP250-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: P314463
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-CP250-W2A-U-4500K
Description: 2'X4' TROFFER LED MODULE, SMOOTH LENS, 0.250" 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: 5701.0 lumens
Efficiency: N/A
Efficacy: 114.2 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

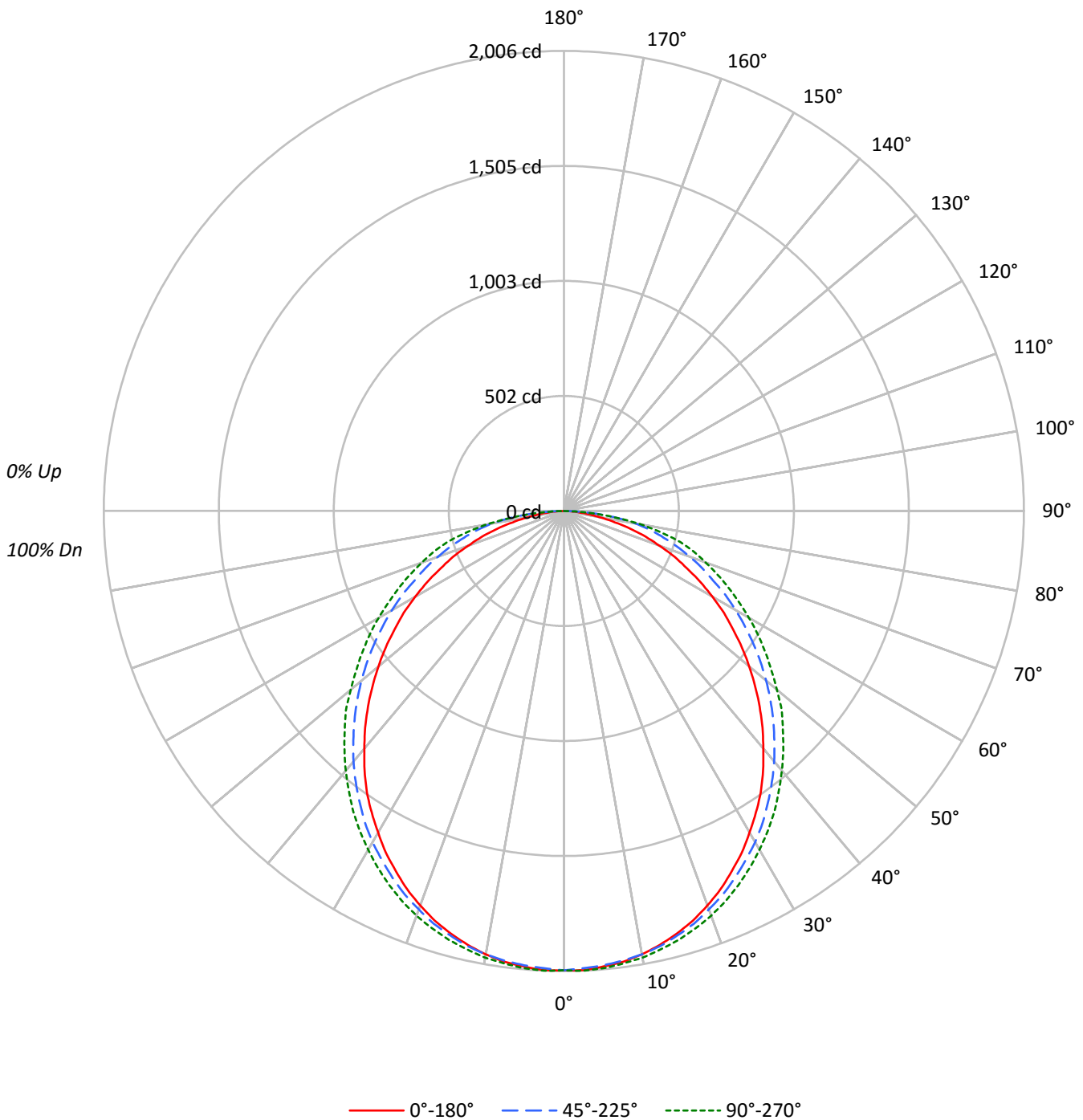
Input Watts (W): 49.9
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P314463

CATALOG NUMBER: 24FCZ2-60HE-UNV-L83050-S-CP250-W2A-U-4500K

Luminous Intensity Polar Plot





TEST NUMBER: P314463

CATALOG NUMBER: 24FCZ2-60HE-UNV-L83050-S-CP250-W2A-U-4500K

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°	2695	2695	2695
5°	2693	2685	2703
10°	2682	2682	2702
15°	2656	2669	2696
20°	2621	2647	2689
25°	2573	2621	2672
30°	2515	2591	2650
35°	2460	2549	2629
40°	2376	2506	2599
45°	2298	2457	2571
50°	2210	2411	2540
55°	2111	2366	2515
60°	2013	2329	2510
65°	1885	2289	2525
70°	1745	2301	2593
75°	1563	2344	2740
80°	1263	2483	2680
85°	951	2180	2124



TEST NUMBER: P314463

CATALOG NUMBER: 24FCZ2-60HE-UNV-L83050-S-CP250-W2A-U-4500K

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	189.6	3.3
10°-20°	541.8	9.5
20°-30°	814.4	14.3
30°-40°	970.1	17.0
40°-50°	992.8	17.4
50°-60°	893.8	15.7
60°-70°	702.0	12.3
70°-80°	455.6	8.0
80°-90°	140.9	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°	1545.8	27.1
0°-40°	2515.9	44.1
0°-60°	4402.6	77.2
0°-90°	5701.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5701.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2003	2003	2003	2003	2003	
5°	1994	1997	1988	1999	2001	189
15°	1907	1912	1916	1932	1936	538
25°	1733	1748	1766	1795	1800	798
35°	1498	1516	1552	1590	1601	934
45°	1208	1237	1291	1340	1351	931
55°	900	940	1009	1061	1072	807
65°	592	637	719	779	793	589
75°	301	358	451	512	527	318
85°	62	114	141	138	138	74
90°	0	0	0	0	0	



TEST NUMBER: P314463

CATALOG NUMBER: 24FCZ2-60HE-UNV-L83050-S-CP250-W2A-U-4500K

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2002.8	2002.8	2002.8	2002.8	2002.8
2.5°	2004.6	2004.6	1995.6	2004.6	2006.4
5°	1993.7	1997.4	1988.3	1999.2	2001.0
7.5°	1982.9	1982.9	1977.4	1988.3	1990.1
10°	1963.0	1964.8	1963.0	1975.6	1977.4
12.5°	1937.6	1941.2	1943.0	1955.7	1957.5
15°	1906.8	1912.3	1915.9	1932.2	1935.8
17.5°	1872.4	1877.8	1886.9	1905.0	1908.6
20°	1830.8	1838.0	1848.9	1872.4	1877.8
22.5°	1785.5	1792.7	1810.8	1832.6	1841.6
25°	1733.0	1747.5	1765.6	1794.6	1800.0
27.5°	1680.5	1693.1	1716.7	1747.5	1754.7
30°	1618.9	1638.8	1667.8	1698.6	1705.8
32.5°	1559.1	1579.1	1613.5	1646.1	1655.1
35°	1497.6	1515.7	1551.9	1589.9	1600.8
37.5°	1426.9	1450.5	1490.3	1528.4	1539.2
40°	1352.7	1381.7	1426.9	1466.8	1479.5
42.5°	1282.1	1312.9	1358.1	1401.6	1416.1
45°	1207.8	1236.8	1291.1	1340.0	1350.9
47.5°	1131.8	1164.4	1222.3	1271.2	1289.3
50°	1055.7	1090.1	1151.7	1202.4	1213.3
52.5°	979.7	1015.9	1081.1	1135.4	1140.8
55°	900.0	939.8	1008.6	1061.2	1072.0
57.5°	827.6	862.0	936.2	990.5	1003.2
60°	747.9	785.9	865.6	916.3	932.6
62.5°	671.8	711.7	795.0	845.7	860.2
65°	592.1	637.4	718.9	778.7	793.2
67.5°	523.3	566.8	653.7	711.7	726.2
70°	443.7	492.6	584.9	644.7	659.1
72.5°	374.8	425.5	517.9	575.8	597.6
75°	300.6	358.5	450.9	512.5	527.0
77.5°	228.2	295.2	389.3	436.4	436.4
80°	163.0	233.6	320.5	342.3	345.9
82.5°	106.8	175.7	237.2	235.4	235.4
85°	61.6	114.1	141.2	137.6	137.6
87.5°	23.5	47.1	50.7	50.7	48.9
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)