

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: P311701

Luminaire Tested: **24FCZ2-60HE-UNV-L82765-S-CP250-W2A-U-5000K**

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: P311701
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-5000K
Description: 2'X4' TROFFER LED MODULE, SMOOTH LENS, 0.250" POLYCARB SHEET
Light Source: (336) 5000K 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: 5537.0 lumens
Efficiency: N/A
Efficacy: 113.7 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

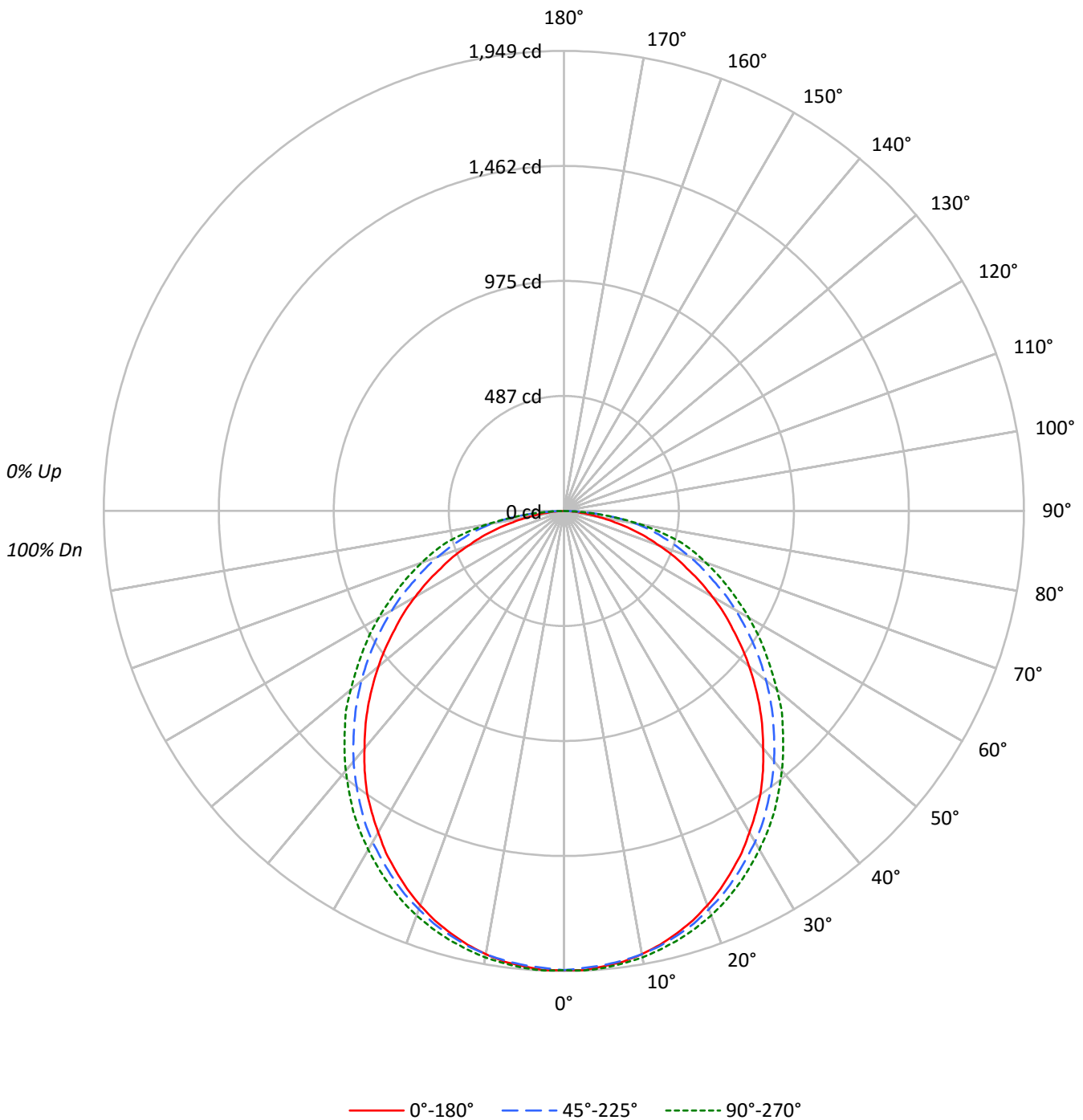
Input Watts (W): 48.7
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P311701

CATALOG NUMBER: 24FCZ2-60HE-UNV-L82765-S-CP250-W2A-U-5000K

Luminous Intensity Polar Plot





TEST NUMBER: P311701

CATALOG NUMBER: 24FCZ2-60HE-UNV-L82765-S-CP250-W2A-U-5000K

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°	2617	2617	2617
5°	2615	2608	2625
10°	2605	2605	2624
15°	2580	2592	2619
20°	2546	2571	2611
25°	2499	2546	2595
30°	2443	2517	2574
35°	2389	2476	2554
40°	2308	2434	2524
45°	2232	2386	2496
50°	2146	2341	2467
55°	2050	2298	2442
60°	1955	2262	2437
65°	1831	2223	2452
70°	1695	2235	2519
75°	1518	2276	2661
80°	1227	2412	2603
85°	923	2118	2064



TEST NUMBER: P311701

CATALOG NUMBER: 24FCZ2-60HE-UNV-L82765-S-CP250-W2A-U-5000K

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	184.2	3.3
10°-20°	526.2	9.5
20°-30°	791.0	14.3
30°-40°	942.2	17.0
40°-50°	964.3	17.4
50°-60°	868.1	15.7
60°-70°	681.8	12.3
70°-80°	442.5	8.0
80°-90°	136.8	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°	1501.3	27.1
0°-40°	2443.5	44.1
0°-60°	4275.9	77.2
0°-90°	5537.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5537.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1945	1945	1945	1945	1945	
5°	1936	1940	1931	1942	1943	184
15°	1852	1857	1861	1877	1880	522
25°	1683	1697	1715	1743	1748	775
35°	1454	1472	1507	1544	1555	907
45°	1173	1201	1254	1302	1312	904
55°	874	913	980	1031	1041	784
65°	575	619	698	756	770	573
75°	292	348	438	498	512	309
85°	60	111	137	134	134	72
90°	0	0	0	0	0	



TEST NUMBER: P311701

CATALOG NUMBER: 24FCZ2-60HE-UNV-L82765-S-CP250-W2A-U-5000K

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1945.2	1945.2	1945.2	1945.2	1945.2
2.5°	1946.9	1946.9	1938.1	1946.9	1948.7
5°	1936.4	1939.9	1931.1	1941.7	1943.4
7.5°	1925.8	1925.8	1920.6	1931.1	1932.9
10°	1906.5	1908.3	1906.5	1918.8	1920.6
12.5°	1881.9	1885.4	1887.1	1899.5	1901.2
15°	1852.0	1857.2	1860.8	1876.6	1880.1
17.5°	1818.6	1823.8	1832.6	1850.2	1853.7
20°	1778.1	1785.1	1795.7	1818.6	1823.8
22.5°	1734.1	1741.2	1758.8	1779.9	1788.7
25°	1683.1	1697.2	1714.8	1742.9	1748.2
27.5°	1632.1	1644.4	1667.3	1697.2	1704.2
30°	1572.3	1591.7	1619.8	1649.7	1656.7
32.5°	1514.3	1533.6	1567.1	1598.7	1607.5
35°	1454.5	1472.1	1507.3	1544.2	1554.7
37.5°	1385.9	1408.8	1447.5	1484.4	1494.9
40°	1313.8	1341.9	1385.9	1424.6	1436.9
42.5°	1245.2	1275.1	1319.1	1361.3	1375.3
45°	1173.1	1201.2	1254.0	1301.5	1312.0
47.5°	1099.2	1130.9	1187.2	1234.6	1252.2
50°	1025.4	1058.8	1118.6	1167.8	1178.4
52.5°	951.5	986.7	1050.0	1102.7	1108.0
55°	874.1	912.8	979.6	1030.6	1041.2
57.5°	803.8	837.2	909.3	962.0	974.4
60°	726.4	763.3	840.7	889.9	905.8
62.5°	652.5	691.2	772.1	821.3	835.4
65°	575.1	619.1	698.2	756.3	770.3
67.5°	508.3	550.5	634.9	691.2	705.3
70°	430.9	478.4	568.1	626.1	640.2
72.5°	364.1	413.3	503.0	559.3	580.4
75°	292.0	348.2	437.9	497.7	511.8
77.5°	221.6	286.7	378.1	423.9	423.9
80°	158.3	226.9	311.3	332.4	335.9
82.5°	103.8	170.6	230.4	228.6	228.6
85°	59.8	110.8	137.2	133.7	133.7
87.5°	22.9	45.7	49.2	49.2	47.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)