

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: P311692

Luminaire Tested: **24FCZ2-60HE-UNV-L82765-S-CP187-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: P311692
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-CP187-W2A-U-5000K
Description: 2'X4' TROFFER LED MODULE, SMOOTH LENS, 0.187" 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: 5583.0 lumens
Efficiency: N/A
Efficacy: 114.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.27 / 1.35
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')
CIE Type: Direct

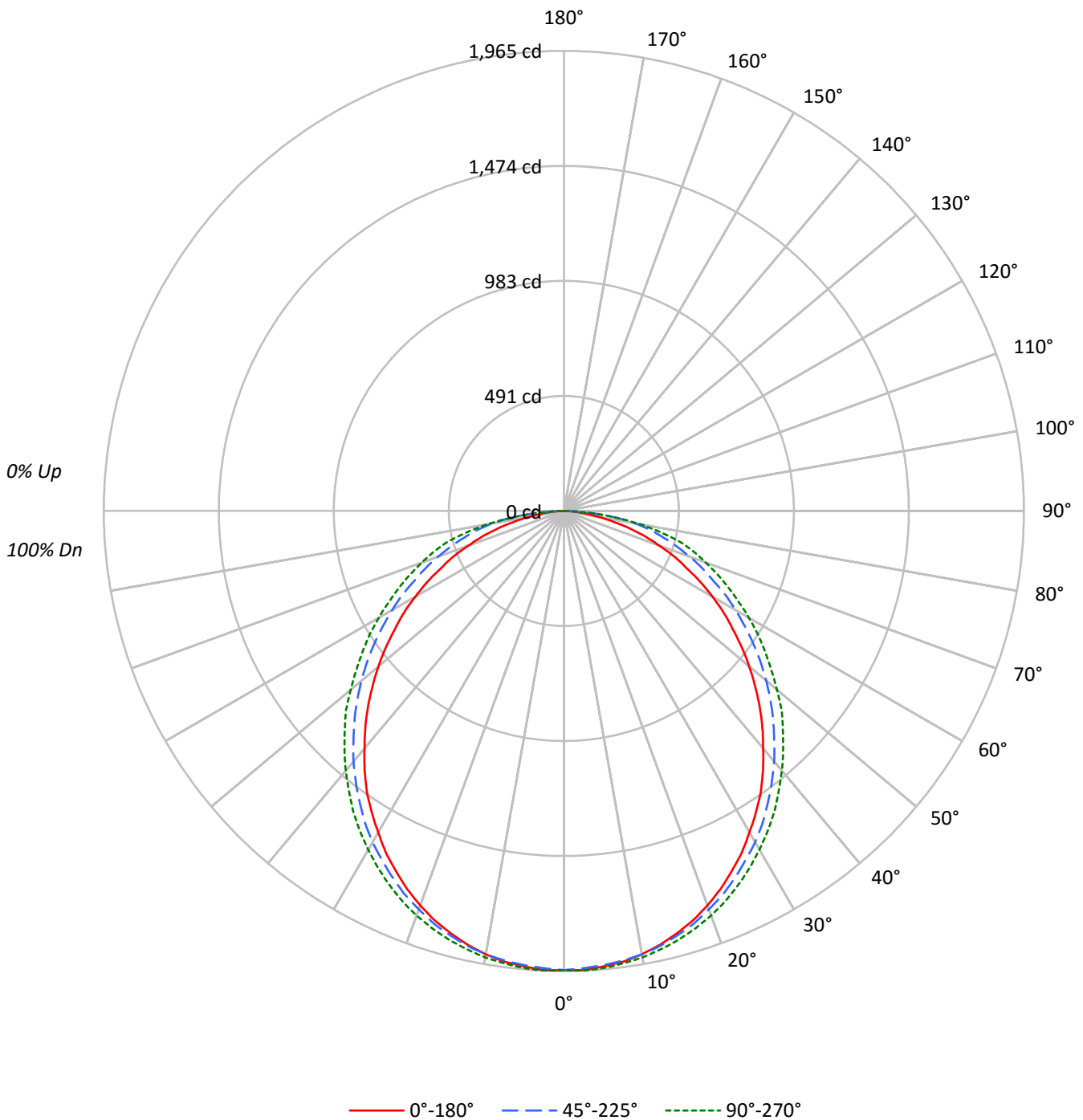
Input Watts (W): 48.7
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P311692

CATALOG NUMBER: 24FCZ2-60HE-UNV-L82765-S-CP187-W2A-U-5000K

Luminous Intensity Polar Plot





TEST NUMBER: P311692

CATALOG NUMBER: 24FCZ2-60HE-UNV-L82765-S-CP187-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°	2639	2639	2639
5°	2637	2630	2647
10°	2626	2626	2646
15°	2601	2613	2641
20°	2567	2592	2633
25°	2519	2567	2617
30°	2463	2538	2595
35°	2409	2496	2575
40°	2327	2454	2545
45°	2251	2406	2517
50°	2164	2361	2487
55°	2068	2317	2463
60°	1971	2281	2458
65°	1846	2241	2473
70°	1709	2253	2539
75°	1530	2296	2682
80°	1237	2432	2624
85°	931	2135	2081



TEST NUMBER: P311692

CATALOG NUMBER: 24FCZ2-60HE-UNV-L82765-S-CP187-W2A-U-5000K

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	185.7	3.3
10°-20°	530.6	9.5
20°-30°	797.5	14.3
30°-40°	950.0	17.0
40°-50°	972.3	17.4
50°-60°	875.3	15.7
60°-70°	687.4	12.3
70°-80°	446.2	8.0
80°-90°	138.0	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°	1513.8	27.1
0°-40°	2463.8	44.1
0°-60°	4311.4	77.2
0°-90°	5583.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5583.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1961	1961	1961	1961	1961	
5°	1952	1956	1947	1958	1960	186
15°	1867	1873	1876	1892	1896	527
25°	1697	1711	1729	1757	1763	782
35°	1467	1484	1520	1557	1568	915
45°	1183	1211	1264	1312	1323	912
55°	881	920	988	1039	1050	790
65°	580	624	704	762	777	577
75°	294	351	442	502	516	312
85°	60	112	138	135	135	73
90°	0	0	0	0	0	



TEST NUMBER: P311692

CATALOG NUMBER: 24FCZ2-60HE-UNV-L82765-S-CP187-W2A-U-5000K

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1961.3	1961.3	1961.3	1961.3	1961.3
2.5°	1963.1	1963.1	1954.3	1963.1	1964.9
5°	1952.5	1956.0	1947.2	1957.8	1959.6
7.5°	1941.8	1941.8	1936.5	1947.2	1948.9
10°	1922.3	1924.1	1922.3	1934.7	1936.5
12.5°	1897.5	1901.0	1902.8	1915.2	1917.0
15°	1867.4	1872.7	1876.2	1892.2	1895.7
17.5°	1833.7	1839.0	1847.8	1865.6	1869.1
20°	1792.9	1800.0	1810.6	1833.7	1839.0
22.5°	1748.5	1755.6	1773.4	1794.6	1803.5
25°	1697.1	1711.3	1729.0	1757.4	1762.7
27.5°	1645.7	1658.1	1681.2	1711.3	1718.4
30°	1585.4	1604.9	1633.3	1663.4	1670.5
32.5°	1526.9	1546.4	1580.1	1612.0	1620.9
35°	1466.6	1484.3	1519.8	1557.0	1567.7
37.5°	1397.4	1420.5	1459.5	1496.7	1507.4
40°	1324.7	1353.1	1397.4	1436.4	1448.8
42.5°	1255.5	1285.7	1330.0	1372.6	1386.8
45°	1182.8	1211.2	1264.4	1312.3	1322.9
47.5°	1108.4	1140.3	1197.0	1244.9	1262.6
50°	1033.9	1067.6	1127.9	1177.5	1188.2
52.5°	959.4	994.9	1058.7	1111.9	1117.2
55°	881.4	920.4	987.8	1039.2	1049.8
57.5°	810.4	844.1	916.8	970.0	982.4
60°	732.4	769.6	847.7	897.3	913.3
62.5°	657.9	696.9	778.5	828.2	842.3
65°	579.9	624.2	704.0	762.5	776.7
67.5°	512.5	555.1	640.2	696.9	711.1
70°	434.5	482.4	572.8	631.3	645.5
72.5°	367.1	416.7	507.2	563.9	585.2
75°	294.4	351.1	441.6	501.9	516.0
77.5°	223.4	289.1	381.3	427.4	427.4
80°	159.6	228.8	313.9	335.2	338.7
82.5°	104.6	172.0	232.3	230.5	230.5
85°	60.3	111.7	138.3	134.8	134.8
87.5°	23.1	46.1	49.7	49.7	47.9
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)