

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: P311018

Luminaire Tested: **24FCZ2-60HE-UNV-L82765-CP187-W2A-U-5500K**

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: P311018
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1805-783-15)
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-CP187-W2A-U-5500K
Description: 2'X4' TROFFER LED MODULE, RIBBED LENS, 0.187" POLYCARB SHEET
Light Source: (336) 5500K 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: 5366.0 lumens
Efficiency: N/A
Efficacy: 109.7 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.29 / 1.38
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')
CIE Type: Direct

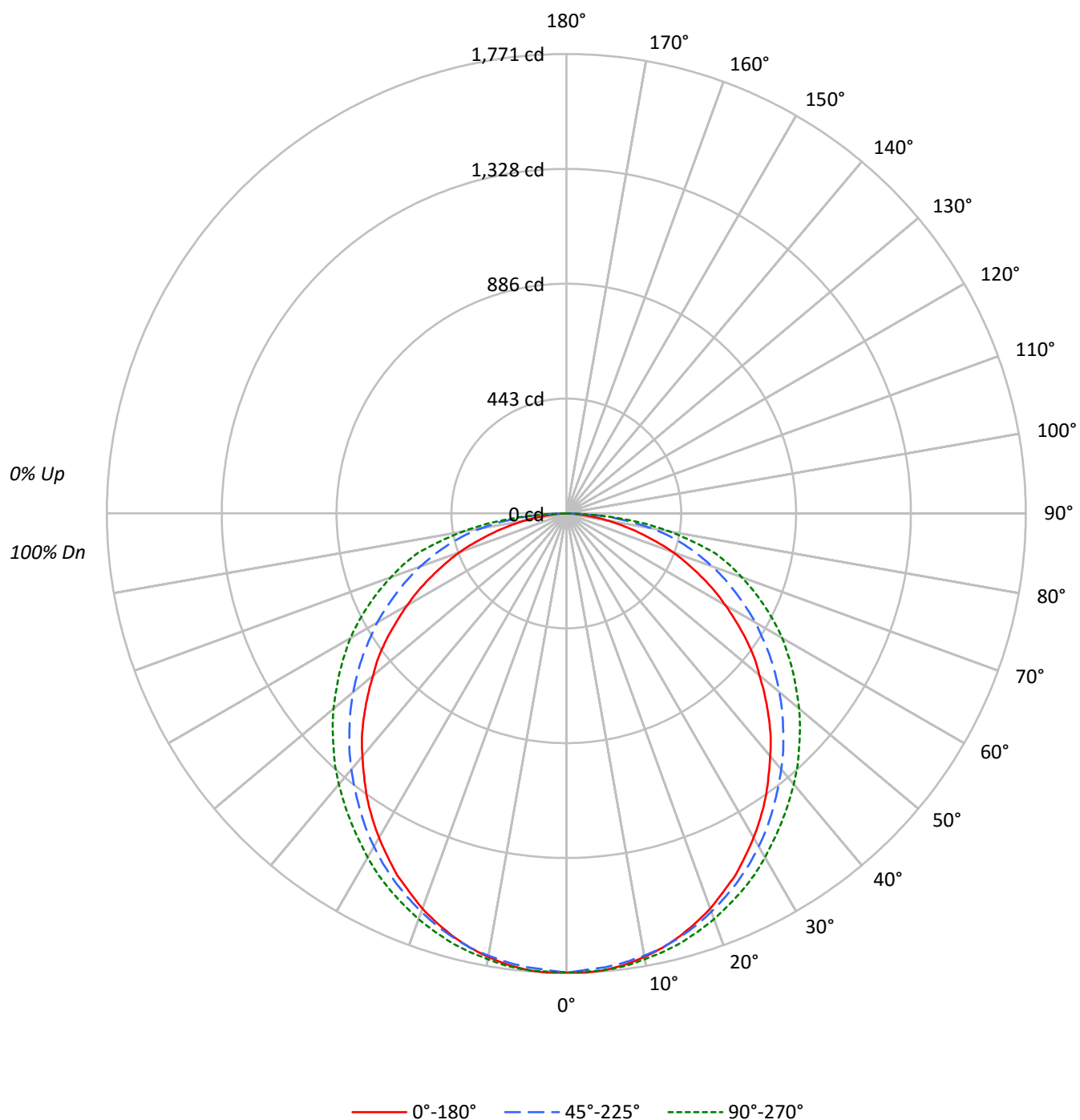
Input Watts (W): 48.9
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P311018

CATALOG NUMBER: 24FCZ2-60HE-UNV-L82765-CP187-W2A-U-5500K

Luminous Intensity Polar Plot





TEST NUMBER: P311018

CATALOG NUMBER: 24FCZ2-60HE-UNV-L82765-CP187-W2A-U-5500K

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	98	94	105	100	96	92	96	92	89		92	89	87		82
2	98	89	81	75	95	87	80	74	83	78	73		80	75	71		67
3	89	77	69	62	86	76	68	61	73	66	60		70	64	59		56
4	81	68	59	52	79	67	58	52	64	57	51		62	56	50		47
5	74	61	52	45	72	60	51	44	58	50	44		56	49	43		41
6	69	55	46	39	67	54	45	39	52	44	38		50	43	38		36
7	64	50	41	34	62	49	40	34	47	39	34		46	39	34		31
8	59	45	37	31	57	45	36	30	43	36	30		42	35	30		28
9	55	41	33	27	54	41	33	27	40	32	27		39	32	27		25
10	52	38	30	25	50	38	30	25	37	30	25		36	29	25		23

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2381	2381	2381
5°	2385	2371	2385
10°	2372	2364	2384
15°	2351	2356	2386
20°	2322	2340	2383
25°	2286	2323	2381
30°	2243	2304	2379
35°	2199	2281	2380
40°	2148	2264	2395
45°	2097	2249	2415
50°	2035	2244	2452
55°	1984	2247	2502
60°	1907	2266	2587
65°	1819	2290	2681
70°	1723	2360	2830
75°	1536	2462	3091
80°	1310	2607	3159
85°	934	2584	3023



TEST NUMBER: P311018

CATALOG NUMBER: 24FCZ2-60HE-UNV-L82765-CP187-W2A-U-5500K

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	167.5	3.1
10°-20°	478.9	8.9
20°-30°	723.3	13.5
30°-40°	871.8	16.2
40°-50°	915.2	17.1
50°-60°	856.2	16.0
60°-70°	707.1	13.2
70°-80°	481.8	9.0
80°-90°	164.3	3.1
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°	1369.7	25.5
0°-40°	2241.4	41.8
0°-60°	4012.8	74.8
0°-90°	5366.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5366.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1770	1770	1770	1770	1770	
5°	1766	1764	1755	1766	1766	168
15°	1688	1690	1691	1709	1713	476
25°	1540	1547	1565	1595	1604	709
35°	1339	1353	1389	1435	1449	837
45°	1102	1125	1182	1246	1269	850
55°	846	880	958	1036	1066	755
65°	572	620	719	810	842	567
75°	296	363	474	563	595	315
85°	60	119	167	189	196	76
90°	0	0	0	0	0	



TEST NUMBER: P311018

CATALOG NUMBER: 24FCZ2-60HE-UNV-L82765-CP187-W2A-U-5500K

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1769.7	1769.7	1769.7	1769.7	1769.7
2.5°	1771.4	1769.7	1760.8	1769.7	1767.9
5°	1766.1	1764.3	1755.4	1766.1	1766.1
7.5°	1753.6	1753.6	1744.7	1757.2	1759.0
10°	1735.8	1735.8	1730.5	1744.7	1744.7
12.5°	1714.5	1714.5	1714.5	1728.7	1730.5
15°	1687.8	1689.5	1691.3	1709.1	1712.7
17.5°	1655.7	1659.3	1664.6	1686.0	1689.5
20°	1621.9	1625.5	1634.4	1659.3	1664.6
22.5°	1579.2	1588.1	1600.5	1629.0	1634.4
25°	1540.0	1547.1	1564.9	1595.2	1604.1
27.5°	1491.9	1502.6	1525.8	1557.8	1570.3
30°	1443.9	1454.5	1483.0	1520.4	1531.1
32.5°	1392.2	1408.3	1438.5	1477.7	1490.1
35°	1338.8	1353.1	1388.7	1435.0	1449.2
37.5°	1280.1	1299.6	1338.8	1388.7	1406.5
40°	1223.1	1244.5	1289.0	1342.4	1363.7
42.5°	1166.1	1187.5	1237.3	1297.9	1319.2
45°	1102.0	1125.2	1182.1	1246.2	1269.4
47.5°	1037.9	1066.4	1128.7	1196.4	1221.3
50°	972.1	1004.1	1071.8	1143.0	1171.5
52.5°	913.3	943.6	1014.8	1091.3	1118.1
55°	845.7	879.5	957.8	1036.2	1066.4
57.5°	776.2	813.6	897.3	982.7	1013.0
60°	708.6	749.5	842.1	927.6	961.4
62.5°	642.7	683.7	779.8	868.8	902.6
65°	571.5	619.6	719.3	810.1	842.1
67.5°	503.8	555.5	660.5	749.5	781.6
70°	438.0	487.8	600.0	687.2	719.3
72.5°	366.8	423.7	535.9	626.7	660.5
75°	295.5	363.2	473.6	562.6	594.6
77.5°	229.7	299.1	409.5	482.5	498.5
80°	169.1	240.3	336.5	388.1	407.7
82.5°	108.6	179.8	256.4	293.8	309.8
85°	60.5	119.3	167.4	188.7	195.8
87.5°	24.9	51.6	67.7	76.6	76.6
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)