

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: P311694

Luminaire Tested: **24FCZ2-60HE-UNV-L82765-S-CP187-W2A-U-5700K**

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: P311694
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-5700K
Description: 2'X4' TROFFER LED MODULE, SMOOTH LENS, 0.187" POLYCARB SHEET
Light Source: (336) 5700K 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: 5653.0 lumens
Efficiency: N/A
Efficacy: 115.6 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

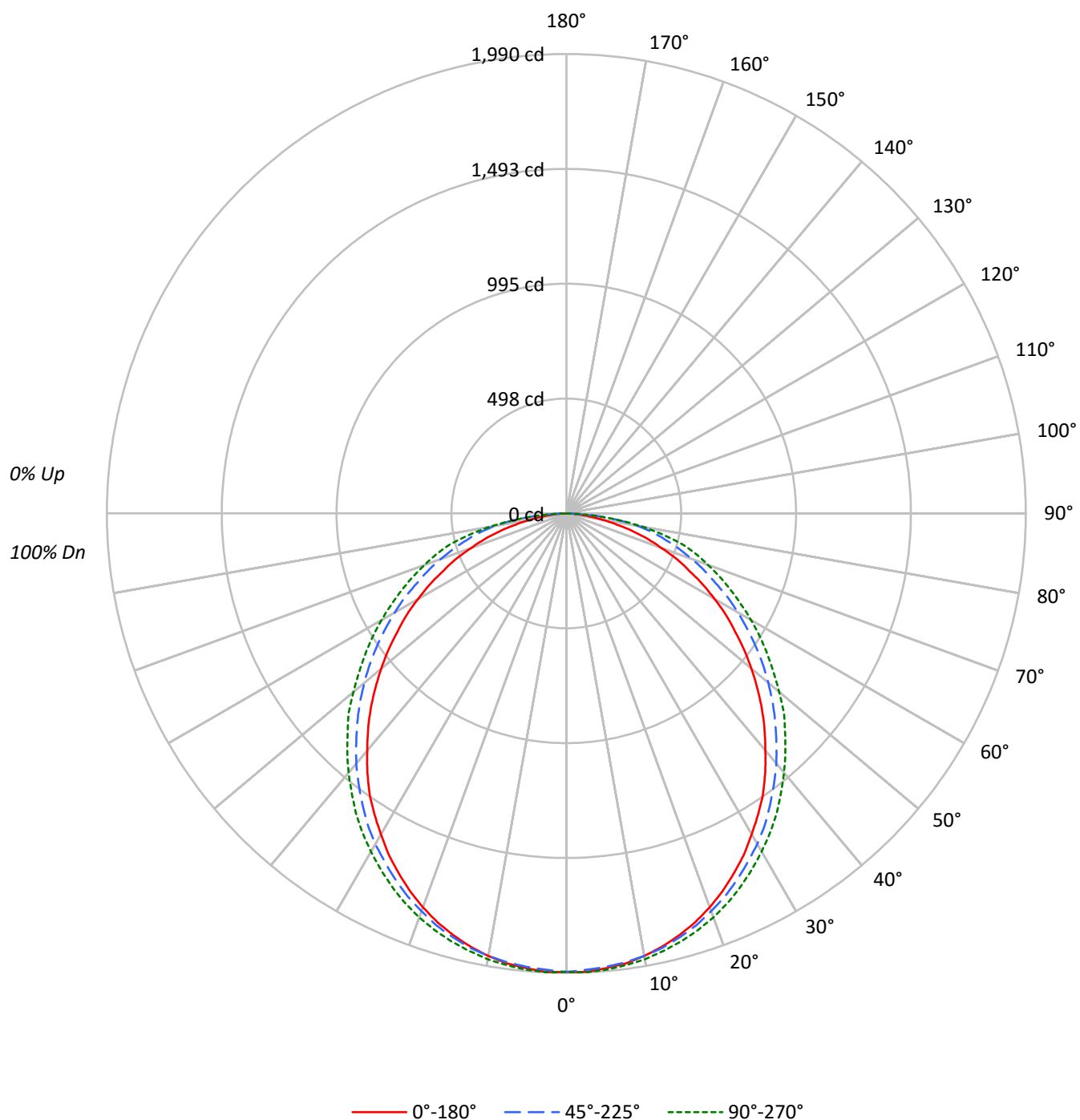
Input Watts (W): 48.9
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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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°	2672	2672	2672
5°	2670	2663	2680
10°	2659	2659	2679
15°	2634	2646	2674
20°	2599	2625	2666
25°	2551	2599	2650
30°	2494	2569	2628
35°	2439	2528	2607
40°	2356	2485	2577
45°	2279	2436	2549
50°	2191	2390	2518
55°	2093	2346	2494
60°	1996	2310	2488
65°	1869	2270	2504
70°	1731	2282	2571
75°	1550	2324	2716
80°	1252	2462	2658
85°	943	2163	2107



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	188.0	3.3
10°-20°	537.2	9.5
20°-30°	807.5	14.3
30°-40°	961.9	17.0
40°-50°	984.5	17.4
50°-60°	886.3	15.7
60°-70°	696.1	12.3
70°-80°	451.7	8.0
80°-90°	139.7	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°	1532.8	27.1
0°-40°	2494.7	44.1
0°-60°	4365.5	77.2
0°-90°	5653.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5653.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1986	1986	1986	1986	1986	
5°	1977	1980	1972	1982	1984	188
15°	1891	1896	1900	1916	1920	533
25°	1718	1733	1751	1779	1785	792
35°	1485	1503	1539	1576	1587	926
45°	1198	1226	1280	1329	1340	923
55°	892	932	1000	1052	1063	800
65°	587	632	713	772	786	585
75°	298	356	447	508	522	315
85°	61	113	140	136	136	74
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1985.9	1985.9	1985.9	1985.9	1985.9
2.5°	1987.7	1987.7	1978.8	1987.7	1989.5
5°	1977.0	1980.5	1971.6	1982.3	1984.1
7.5°	1966.2	1966.2	1960.8	1971.6	1973.4
10°	1946.4	1948.2	1946.4	1959.0	1960.8
12.5°	1921.3	1924.9	1926.7	1939.3	1941.0
15°	1890.8	1896.2	1899.7	1915.9	1919.5
17.5°	1856.7	1862.0	1871.0	1889.0	1892.6
20°	1815.4	1822.5	1833.3	1856.7	1862.0
22.5°	1770.5	1777.6	1795.6	1817.1	1826.1
25°	1718.4	1732.8	1750.7	1779.4	1784.8
27.5°	1666.3	1678.9	1702.2	1732.8	1739.9
30°	1605.3	1625.0	1653.7	1684.3	1691.5
32.5°	1546.0	1565.8	1599.9	1632.2	1641.2
35°	1485.0	1502.9	1538.8	1576.5	1587.3
37.5°	1414.9	1438.3	1477.8	1515.5	1526.3
40°	1341.3	1370.0	1414.9	1454.4	1467.0
42.5°	1271.3	1301.8	1346.7	1389.8	1404.2
45°	1197.7	1226.4	1280.3	1328.7	1339.5
47.5°	1122.3	1154.6	1212.0	1260.5	1278.5
50°	1046.8	1081.0	1142.0	1192.3	1203.1
52.5°	971.4	1007.3	1072.0	1125.8	1131.2
55°	892.4	931.9	1000.2	1052.2	1063.0
57.5°	820.6	854.7	928.3	982.2	994.8
60°	741.6	779.3	858.3	908.6	924.7
62.5°	666.2	705.7	788.3	838.5	852.9
65°	587.2	632.1	712.9	772.1	786.5
67.5°	518.9	562.0	648.2	705.7	720.0
70°	439.9	488.4	580.0	639.2	653.6
72.5°	371.7	422.0	513.5	571.0	592.5
75°	298.1	355.5	447.1	508.2	522.5
77.5°	226.2	292.7	386.1	432.7	432.7
80°	161.6	231.6	317.8	339.4	343.0
82.5°	105.9	174.2	235.2	233.4	233.4
85°	61.1	113.1	140.1	136.5	136.5
87.5°	23.3	46.7	50.3	50.3	48.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)