

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: P311104

Luminaire Tested: **24FCZ2-70HE-UNV-L82765-CP187-W2A-U-3500K**

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: P311104
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: 24FCZ2-70HE-UNV-L82765-CP187-W2A-U-3500K
Description: 2'X4' TROFFER LED MODULE, RIBBED LENS, 0.187" POLYCARB SHEET
Light Source: (336) 3500K 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: 5892.0 lumens
Efficiency: N/A
Efficacy: 101.6 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

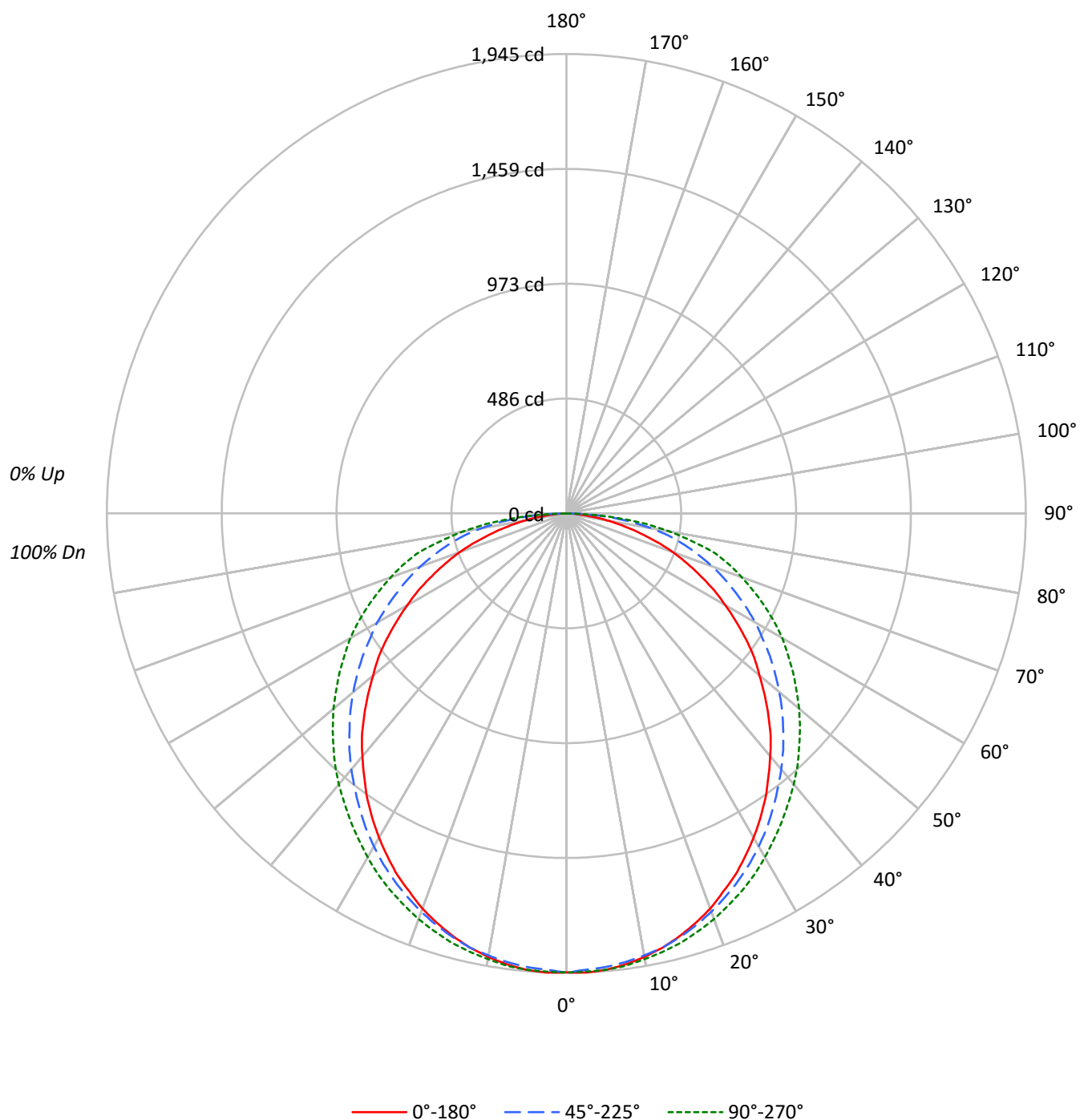
Input Watts (W): 58
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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°	2614	2614	2614
5°	2619	2603	2619
10°	2604	2596	2617
15°	2581	2587	2620
20°	2550	2570	2617
25°	2510	2551	2615
30°	2463	2530	2612
35°	2415	2505	2614
40°	2359	2486	2630
45°	2303	2470	2652
50°	2234	2463	2692
55°	2178	2467	2747
60°	2094	2488	2841
65°	1998	2514	2944
70°	1892	2592	3107
75°	1687	2703	3394
80°	1439	2863	3469
85°	1027	2837	3319



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	183.9	3.1
10°-20°	525.8	8.9
20°-30°	794.2	13.5
30°-40°	957.2	16.2
40°-50°	1004.9	17.1
50°-60°	940.1	16.0
60°-70°	776.4	13.2
70°-80°	529.0	9.0
80°-90°	180.4	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°	1503.9	25.5
0°-40°	2461.1	41.8
0°-60°	4406.2	74.8
0°-90°	5892.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5892.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1943	1943	1943	1943	1943	
5°	1939	1937	1928	1939	1939	184
15°	1853	1855	1857	1877	1881	522
25°	1691	1699	1718	1752	1761	778
35°	1470	1486	1525	1576	1591	919
45°	1210	1236	1298	1368	1394	933
55°	929	966	1052	1138	1171	829
65°	628	680	790	890	925	622
75°	324	399	520	618	653	346
85°	66	131	184	207	215	83
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1943.1	1943.1	1943.1	1943.1	1943.1
2.5°	1945.1	1943.1	1933.4	1943.1	1941.2
5°	1939.2	1937.3	1927.5	1939.2	1939.2
7.5°	1925.5	1925.5	1915.8	1929.4	1931.4
10°	1906.0	1906.0	1900.1	1915.8	1915.8
12.5°	1882.5	1882.5	1882.5	1898.2	1900.1
15°	1853.2	1855.2	1857.1	1876.7	1880.6
17.5°	1818.0	1821.9	1827.8	1851.3	1855.2
20°	1780.9	1784.8	1794.6	1821.9	1827.8
22.5°	1734.0	1743.7	1757.4	1788.7	1794.6
25°	1691.0	1698.8	1718.3	1751.6	1761.3
27.5°	1638.2	1649.9	1675.3	1710.5	1724.2
30°	1585.4	1597.1	1628.4	1669.5	1681.2
32.5°	1528.7	1546.3	1579.5	1622.5	1636.2
35°	1470.1	1485.7	1524.8	1575.6	1591.3
37.5°	1405.5	1427.0	1470.1	1524.8	1544.3
40°	1343.0	1366.4	1415.3	1474.0	1497.4
42.5°	1280.4	1303.9	1358.6	1425.1	1448.6
45°	1210.1	1235.5	1298.0	1368.4	1393.8
47.5°	1139.7	1171.0	1239.4	1313.7	1341.0
50°	1067.4	1102.5	1176.8	1255.0	1286.3
52.5°	1002.8	1036.1	1114.3	1198.3	1227.7
55°	928.6	965.7	1051.7	1137.7	1171.0
57.5°	852.3	893.4	985.2	1079.1	1112.3
60°	778.0	823.0	924.6	1018.5	1055.6
62.5°	705.7	750.7	856.2	954.0	991.1
65°	627.5	680.3	789.8	889.5	924.6
67.5°	553.2	609.9	725.3	823.0	858.2
70°	480.9	535.6	658.8	754.6	789.8
72.5°	402.7	465.3	588.4	688.1	725.3
75°	324.5	398.8	520.0	617.7	652.9
77.5°	252.2	328.4	449.6	529.8	547.4
80°	185.7	263.9	369.5	426.2	447.7
82.5°	119.2	197.4	281.5	322.6	340.1
85°	66.5	131.0	183.8	207.2	215.0
87.5°	27.4	56.7	74.3	84.1	84.1
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)