

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: P311077

Luminaire Tested: **24FCZ2-70HE-UNV-L82765-CA08-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: P311077
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-CA08-W2A-U-3500K
Description: 2'X4' TROFFER LED MODULE, RIBBED LENS, 0.08" ACRYLIC 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: 6297.0 lumens
Efficiency: N/A
Efficacy: 108.6 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

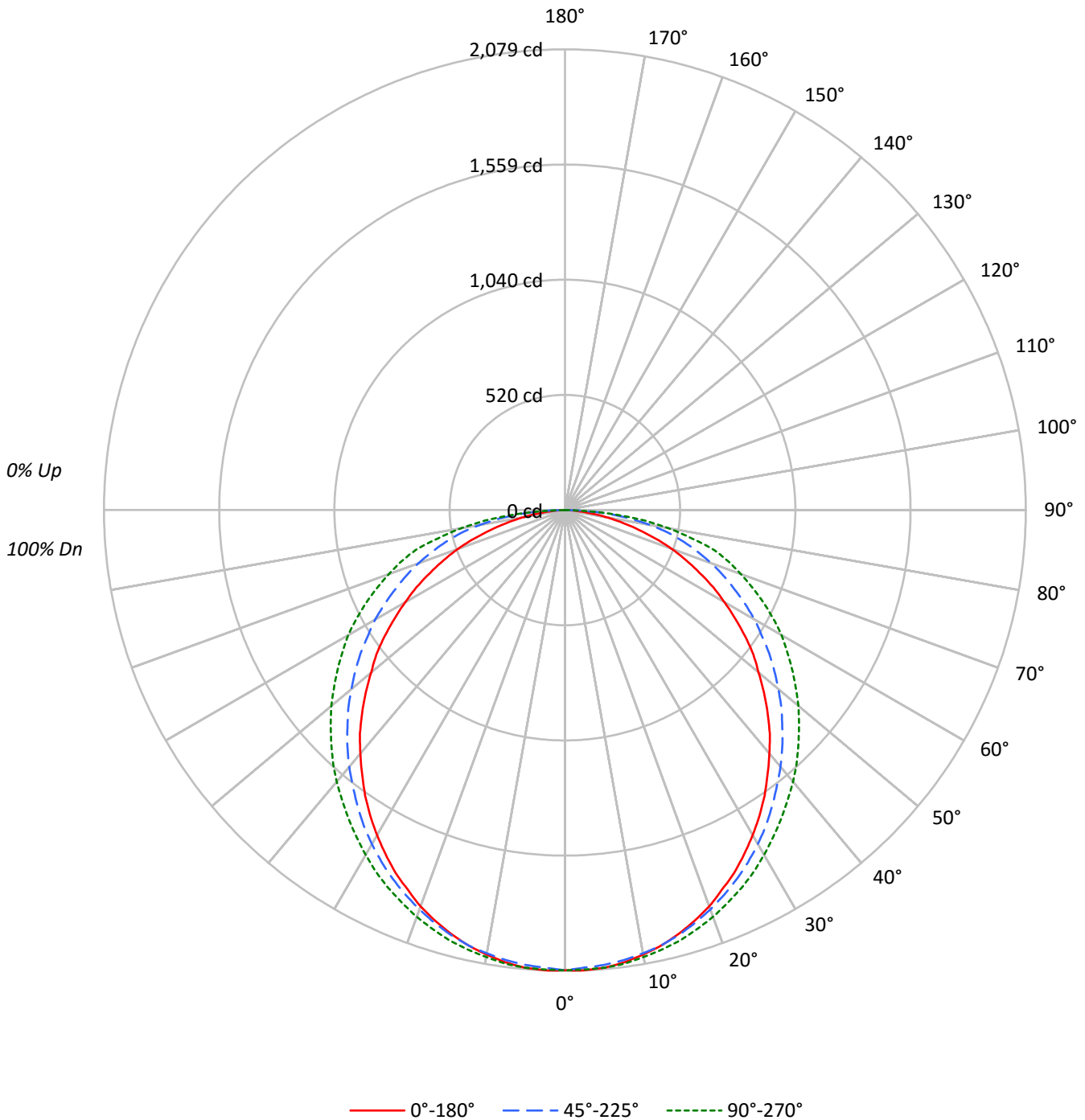
Input Watts (W): 58
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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					10					0
RW	70	50	30	10	70	50	30	10	50	30	10	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	100	100	100	100	100		
	1	108	103	98	94	105	100	96	92	96	92	89	92	89	87	88	86	84	82	82	82	82	82	82		
	2	98	89	81	75	95	87	80	74	83	78	73	80	75	71	77	73	69	67	67	67	67	67	67		
	3	89	77	69	62	86	76	68	61	73	66	60	70	64	59	67	62	58	56	56	56	56	56	56		
	4	81	68	59	52	79	67	58	52	64	57	51	62	56	50	60	54	50	47	47	47	47	47	47		
	5	74	61	52	45	72	60	51	44	58	50	44	56	49	43	54	48	43	41	41	41	41	41	41		
	6	69	55	46	39	67	54	45	39	52	44	38	50	43	38	49	42	38	36	36	36	36	36	36		
	7	64	50	41	34	62	49	40	34	47	39	34	46	39	34	44	38	33	31	31	31	31	31	31		
	8	59	45	37	31	57	45	36	30	43	36	30	42	35	30	41	34	30	28	28	28	28	28	28		
	9	55	41	33	27	54	41	33	27	40	32	27	39	32	27	38	31	27	25	25	25	25	25	25		
	10	52	38	30	25	50	38	30	25	37	30	25	36	29	25	35	29	24	23	23	23	23	23	23		

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2794	2794	2794
5°	2799	2782	2799
10°	2783	2774	2797
15°	2759	2765	2800
20°	2725	2746	2797
25°	2683	2726	2795
30°	2632	2704	2791
35°	2581	2677	2793
40°	2521	2657	2811
45°	2461	2640	2834
50°	2388	2633	2878
55°	2328	2637	2936
60°	2238	2659	3036
65°	2135	2687	3146
70°	2022	2770	3320
75°	1803	2889	3628
80°	1538	3060	3707
85°	1096	3032	3548



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	196.5	3.1
10°-20°	562.0	8.9
20°-30°	848.8	13.5
30°-40°	1023.0	16.2
40°-50°	1074.0	17.1
50°-60°	1004.8	16.0
60°-70°	829.7	13.2
70°-80°	565.4	9.0
80°-90°	192.8	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°	1607.3	25.5
0°-40°	2630.3	41.8
0°-60°	4709.0	74.8
0°-90°	6297.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6297.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2077	2077	2077	2077	2077	
5°	2072	2070	2060	2072	2072	197
15°	1981	1983	1985	2006	2010	558
25°	1807	1816	1836	1872	1882	832
35°	1571	1588	1630	1684	1701	982
45°	1293	1320	1387	1462	1490	997
55°	992	1032	1124	1216	1251	886
65°	671	727	844	951	988	665
75°	347	426	556	660	698	370
85°	71	140	196	222	230	89
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2076.7	2076.7	2076.7	2076.7	2076.7
2.5°	2078.8	2076.7	2066.2	2076.7	2074.6
5°	2072.5	2070.4	2060.0	2072.5	2072.5
7.5°	2057.9	2057.9	2047.4	2062.1	2064.2
10°	2037.0	2037.0	2030.7	2047.4	2047.4
12.5°	2011.9	2011.9	2011.9	2028.6	2030.7
15°	1980.6	1982.7	1984.8	2005.7	2009.8
17.5°	1943.0	1947.2	1953.4	1978.5	1982.7
20°	1903.3	1907.5	1917.9	1947.2	1953.4
22.5°	1853.1	1863.6	1878.2	1911.6	1917.9
25°	1807.2	1815.5	1836.4	1872.0	1882.4
27.5°	1750.8	1763.3	1790.5	1828.1	1842.7
30°	1694.4	1706.9	1740.3	1784.2	1796.7
32.5°	1633.8	1652.6	1688.1	1734.1	1748.7
35°	1571.1	1587.8	1629.6	1683.9	1700.6
37.5°	1502.2	1525.1	1571.1	1629.6	1650.5
40°	1435.3	1460.4	1512.6	1575.3	1600.4
42.5°	1368.4	1393.5	1452.0	1523.0	1548.1
45°	1293.2	1320.4	1387.2	1462.5	1489.6
47.5°	1218.0	1251.4	1324.6	1404.0	1433.2
50°	1140.7	1178.3	1257.7	1341.3	1374.7
52.5°	1071.8	1107.3	1190.9	1280.7	1312.0
55°	992.4	1032.1	1124.0	1215.9	1251.4
57.5°	910.9	954.8	1053.0	1153.3	1188.8
60°	831.5	879.6	988.2	1088.5	1128.2
62.5°	754.2	802.3	915.1	1019.5	1059.2
65°	670.6	727.1	844.0	950.6	988.2
67.5°	591.3	651.8	775.1	879.6	917.2
70°	514.0	572.4	704.1	806.4	844.0
72.5°	430.4	497.2	628.9	735.4	775.1
75°	346.8	426.2	555.7	660.2	697.8
77.5°	269.5	351.0	480.5	566.2	585.0
80°	198.5	282.0	394.9	455.5	478.4
82.5°	127.4	211.0	300.8	344.7	363.5
85°	71.0	140.0	196.4	221.5	229.8
87.5°	29.2	60.6	79.4	89.8	89.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)