

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: P311109

Luminaire Tested: **24FCZ2-70HE-UNV-L82765-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: P311109
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-5700K
Description: 2'X4' TROFFER LED MODULE, RIBBED 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: 6289.0 lumens
Efficiency: N/A
Efficacy: 106.1 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

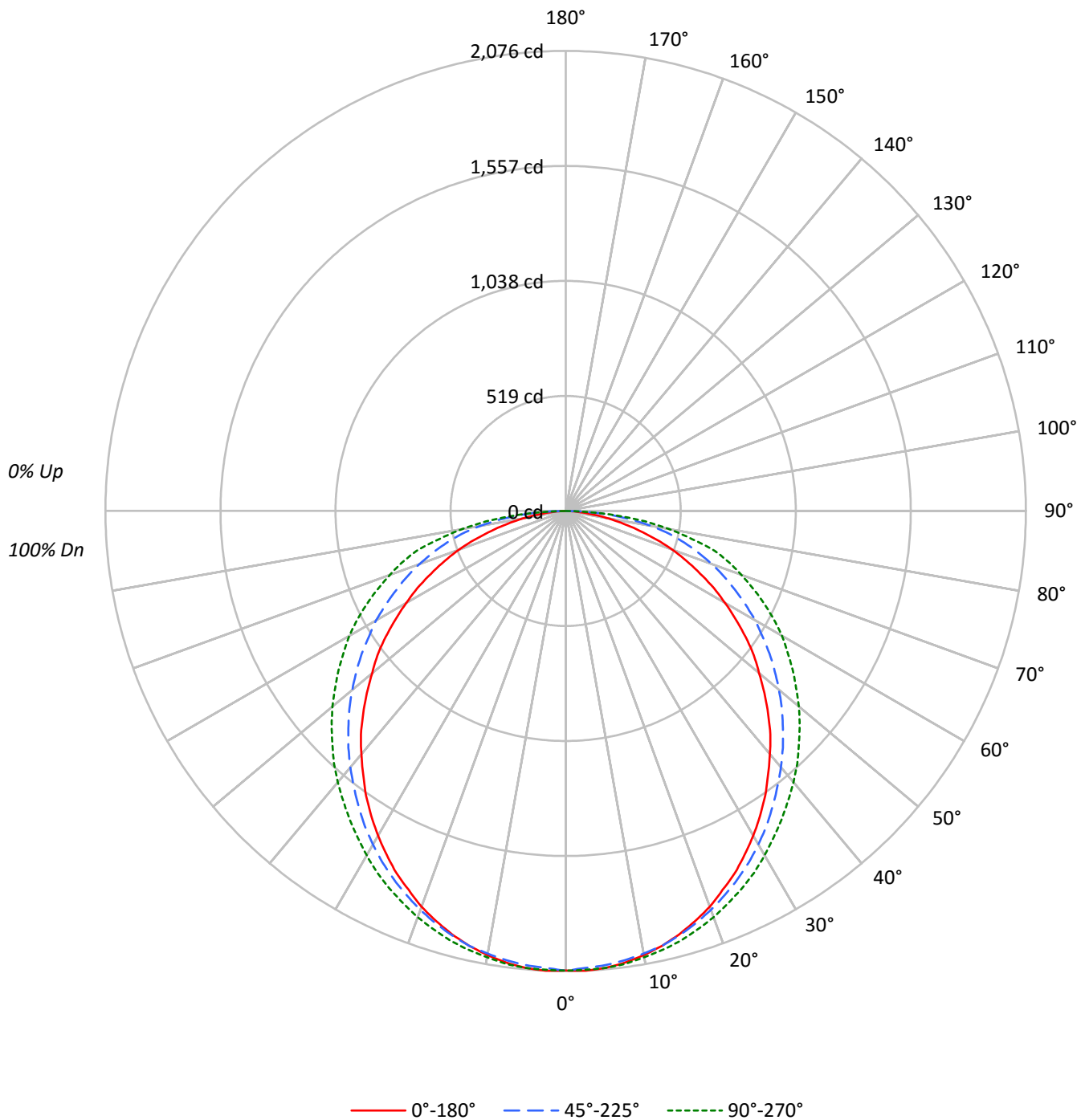
Input Watts (W): 59.3
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	2791	2791	2791
5°	2796	2779	2796
10°	2779	2771	2794
15°	2755	2761	2796
20°	2722	2743	2793
25°	2680	2723	2791
30°	2629	2700	2788
35°	2577	2673	2790
40°	2518	2653	2807
45°	2458	2636	2831
50°	2385	2629	2874
55°	2325	2633	2932
60°	2235	2656	3032
65°	2132	2684	3142
70°	2019	2766	3316
75°	1801	2885	3623
80°	1536	3056	3702
85°	1095	3027	3543



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	196.3	3.1
10°-20°	561.3	8.9
20°-30°	847.7	13.5
30°-40°	1021.7	16.2
40°-50°	1072.6	17.1
50°-60°	1003.5	16.0
60°-70°	828.7	13.2
70°-80°	564.7	9.0
80°-90°	192.6	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°	1605.3	25.5
0°-40°	2627.0	41.8
0°-60°	4703.0	74.8
0°-90°	6289.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6289.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2074	2074	2074	2074	2074	
5°	2070	2068	2057	2070	2070	196
15°	1978	1980	1982	2003	2007	558
25°	1805	1813	1834	1870	1880	830
35°	1569	1586	1628	1682	1698	981
45°	1292	1319	1386	1461	1488	996
55°	991	1031	1123	1214	1250	885
65°	670	726	843	949	987	664
75°	346	426	555	659	697	369
85°	71	140	196	221	230	89
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2074.1	2074.1	2074.1	2074.1	2074.1
2.5°	2076.1	2074.1	2063.6	2074.1	2072.0
5°	2069.9	2067.8	2057.4	2069.9	2069.9
7.5°	2055.3	2055.3	2044.8	2059.5	2061.5
10°	2034.4	2034.4	2028.2	2044.8	2044.8
12.5°	2009.4	2009.4	2009.4	2026.1	2028.2
15°	1978.1	1980.2	1982.2	2003.1	2007.3
17.5°	1940.5	1944.7	1950.9	1976.0	1980.2
20°	1900.9	1905.0	1915.5	1944.7	1950.9
22.5°	1850.8	1861.2	1875.8	1909.2	1915.5
25°	1804.9	1813.2	1834.1	1869.6	1880.0
27.5°	1748.6	1761.1	1788.2	1825.8	1840.4
30°	1692.2	1704.7	1738.1	1781.9	1794.5
32.5°	1631.7	1650.5	1686.0	1731.9	1746.5
35°	1569.1	1585.8	1627.5	1681.8	1698.5
37.5°	1500.2	1523.2	1569.1	1627.5	1648.4
40°	1433.5	1458.5	1510.7	1573.3	1598.3
42.5°	1366.7	1391.7	1450.2	1521.1	1546.2
45°	1291.6	1318.7	1385.5	1460.6	1487.7
47.5°	1216.5	1249.9	1322.9	1402.2	1431.4
50°	1139.3	1176.8	1256.1	1339.6	1373.0
52.5°	1070.4	1105.9	1189.3	1279.1	1310.4
55°	991.1	1030.8	1122.6	1214.4	1249.9
57.5°	909.7	953.6	1051.6	1151.8	1187.3
60°	830.5	878.4	987.0	1087.1	1126.8
62.5°	753.3	801.2	913.9	1018.2	1057.9
65°	669.8	726.1	843.0	949.4	987.0
67.5°	590.5	651.0	774.1	878.4	916.0
70°	513.3	571.7	703.2	805.4	843.0
72.5°	429.8	496.6	628.1	734.5	774.1
75°	346.4	425.7	555.0	659.4	696.9
77.5°	269.2	350.5	479.9	565.5	584.2
80°	198.2	281.7	394.4	454.9	477.8
82.5°	127.3	210.7	300.5	344.3	363.1
85°	70.9	139.8	196.1	221.2	229.5
87.5°	29.2	60.5	79.3	89.7	89.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)