

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: P311779

Luminaire Tested: **24FCZ2-70HE-UNV-L82765-S-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: P311779
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: 24FCZ2-70HE-UNV-L82765-S-CP187-W2A-U-3500K
Description: 2'X4' TROFFER LED MODULE, SMOOTH 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: 6191.0 lumens
Efficiency: N/A
Efficacy: 106.7 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

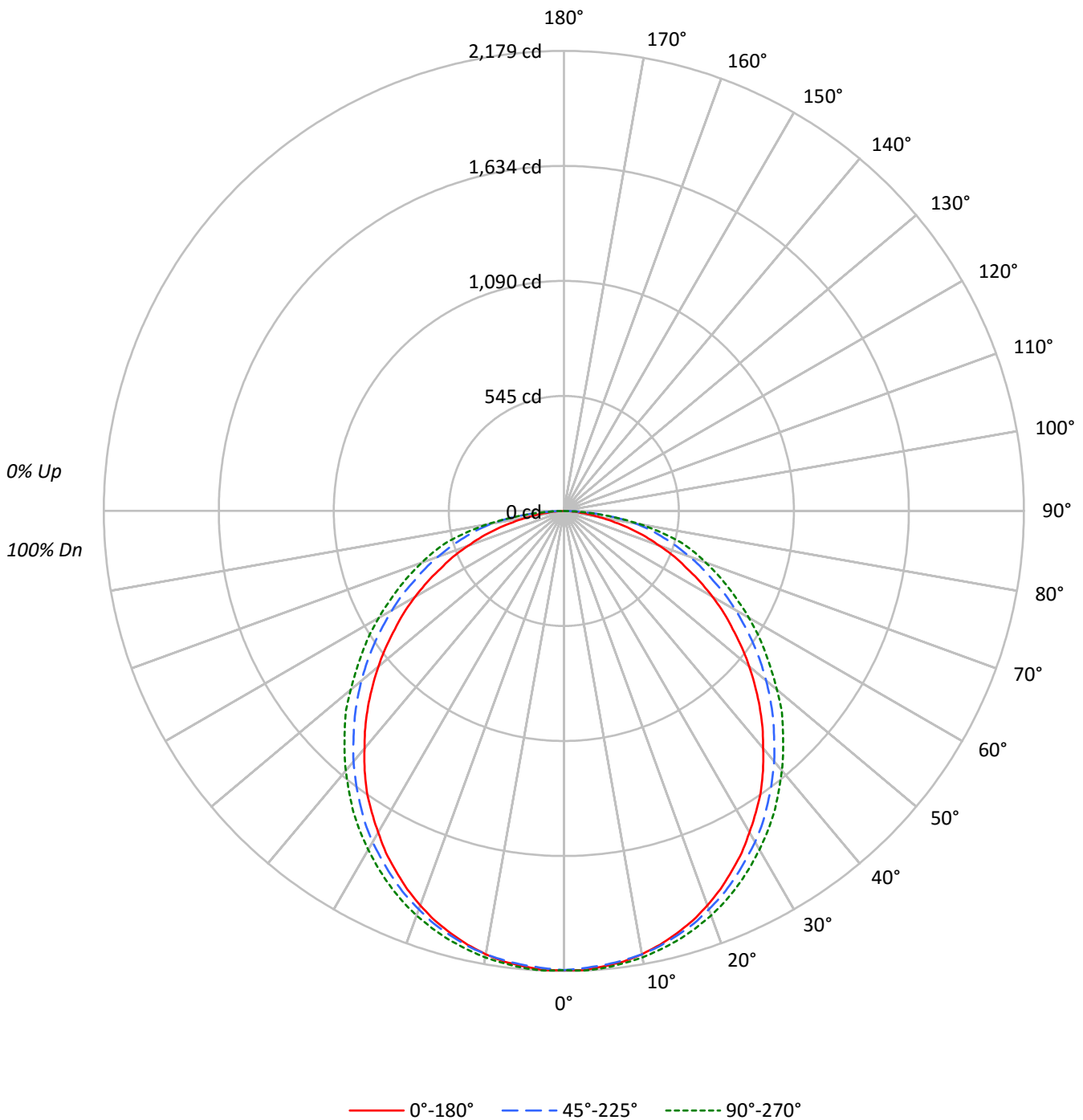
Input Watts (W): 58
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	0
RCR																		
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	108	103	99	95	106	101	97	93	97	93	90	93	90	88	89	87	85	83
2	98	90	83	77	96	88	81	76	84	79	74	81	76	72	78	74	71	69
3	89	79	70	64	87	77	69	63	74	67	62	71	66	61	69	64	60	58
4	82	70	61	54	80	68	60	54	66	59	53	63	57	52	61	56	51	49
5	75	62	53	46	73	61	53	46	59	51	46	57	50	45	55	49	45	42
6	70	56	47	40	68	55	47	40	53	46	40	52	45	40	50	44	39	37
7	64	51	42	36	63	50	42	36	48	41	35	47	40	35	46	39	35	33
8	60	46	38	32	58	46	37	32	44	37	32	43	36	31	42	36	31	29
9	56	43	34	29	55	42	34	29	41	34	28	40	33	28	39	33	28	26
10	53	39	31	26	51	39	31	26	38	31	26	37	30	26	36	30	26	24

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2926	2926	2926
5°	2924	2916	2935
10°	2912	2912	2934
15°	2884	2898	2928
20°	2847	2875	2920
25°	2794	2846	2902
30°	2731	2814	2878
35°	2671	2768	2855
40°	2580	2722	2822
45°	2496	2668	2791
50°	2400	2618	2758
55°	2293	2569	2731
60°	2186	2530	2725
65°	2047	2486	2742
70°	1895	2499	2816
75°	1697	2546	2975
80°	1371	2697	2910
85°	1033	2368	2308



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	205.9	3.3
10°-20°	588.3	9.5
20°-30°	884.4	14.3
30°-40°	1053.5	17.0
40°-50°	1078.2	17.4
50°-60°	970.7	15.7
60°-70°	762.3	12.3
70°-80°	494.7	8.0
80°-90°	153.0	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°	1678.6	27.1
0°-40°	2732.1	44.1
0°-60°	4781.0	77.2
0°-90°	6191.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6191.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2175	2175	2175	2175	2175	
5°	2165	2169	2159	2171	2173	206
15°	2071	2077	2080	2098	2102	584
25°	1882	1898	1917	1949	1955	867
35°	1626	1646	1685	1727	1738	1015
45°	1312	1343	1402	1455	1467	1011
55°	977	1021	1095	1152	1164	876
65°	643	692	781	846	861	640
75°	326	389	490	556	572	345
85°	67	124	153	150	150	81
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2174.9	2174.9	2174.9	2174.9	2174.9
2.5°	2176.9	2176.9	2167.1	2176.9	2178.9
5°	2165.1	2169.0	2159.2	2171.0	2173.0
7.5°	2153.3	2153.3	2147.4	2159.2	2161.2
10°	2131.7	2133.6	2131.7	2145.4	2147.4
12.5°	2104.1	2108.1	2110.0	2123.8	2125.8
15°	2070.7	2076.6	2080.5	2098.2	2102.2
17.5°	2033.4	2039.3	2049.1	2068.7	2072.7
20°	1988.1	1996.0	2007.8	2033.4	2039.3
22.5°	1939.0	1946.8	1966.5	1990.1	1999.9
25°	1881.9	1897.7	1917.3	1948.8	1954.7
27.5°	1824.9	1838.7	1864.2	1897.7	1905.5
30°	1758.0	1779.7	1811.1	1844.6	1852.4
32.5°	1693.1	1714.8	1752.1	1787.5	1797.4
35°	1626.3	1646.0	1685.3	1726.6	1738.4
37.5°	1549.6	1575.2	1618.4	1659.7	1671.5
40°	1469.0	1500.4	1549.6	1592.9	1606.6
42.5°	1392.3	1425.7	1474.9	1522.1	1537.8
45°	1311.6	1343.1	1402.1	1455.2	1467.0
47.5°	1229.1	1264.5	1327.4	1380.5	1400.1
50°	1146.5	1183.8	1250.7	1305.7	1317.5
52.5°	1063.9	1103.2	1174.0	1233.0	1238.9
55°	977.3	1020.6	1095.3	1152.4	1164.2
57.5°	898.7	936.0	1016.7	1075.7	1089.4
60°	812.2	853.5	940.0	995.0	1012.7
62.5°	729.6	772.8	863.3	918.4	934.1
65°	643.0	692.2	780.7	845.6	861.3
67.5°	568.3	615.5	709.9	772.8	788.6
70°	481.8	534.9	635.2	700.1	715.8
72.5°	407.1	462.1	562.4	625.3	648.9
75°	326.4	389.4	489.7	556.5	572.2
77.5°	247.8	320.5	422.8	473.9	473.9
80°	177.0	253.7	348.1	371.7	375.6
82.5°	116.0	190.7	257.6	255.6	255.6
85°	66.9	123.9	153.4	149.5	149.5
87.5°	25.6	51.1	55.1	55.1	53.1
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)