

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: P311780

Luminaire Tested: **24FCZ2-70HE-UNV-L82765-S-CP187-W2A-U-4000K**

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: P311780
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-4000K
Description: 2'X4' TROFFER LED MODULE, SMOOTH LENS, 0.187" POLYCARB SHEET
Light Source: (336) 4000K 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

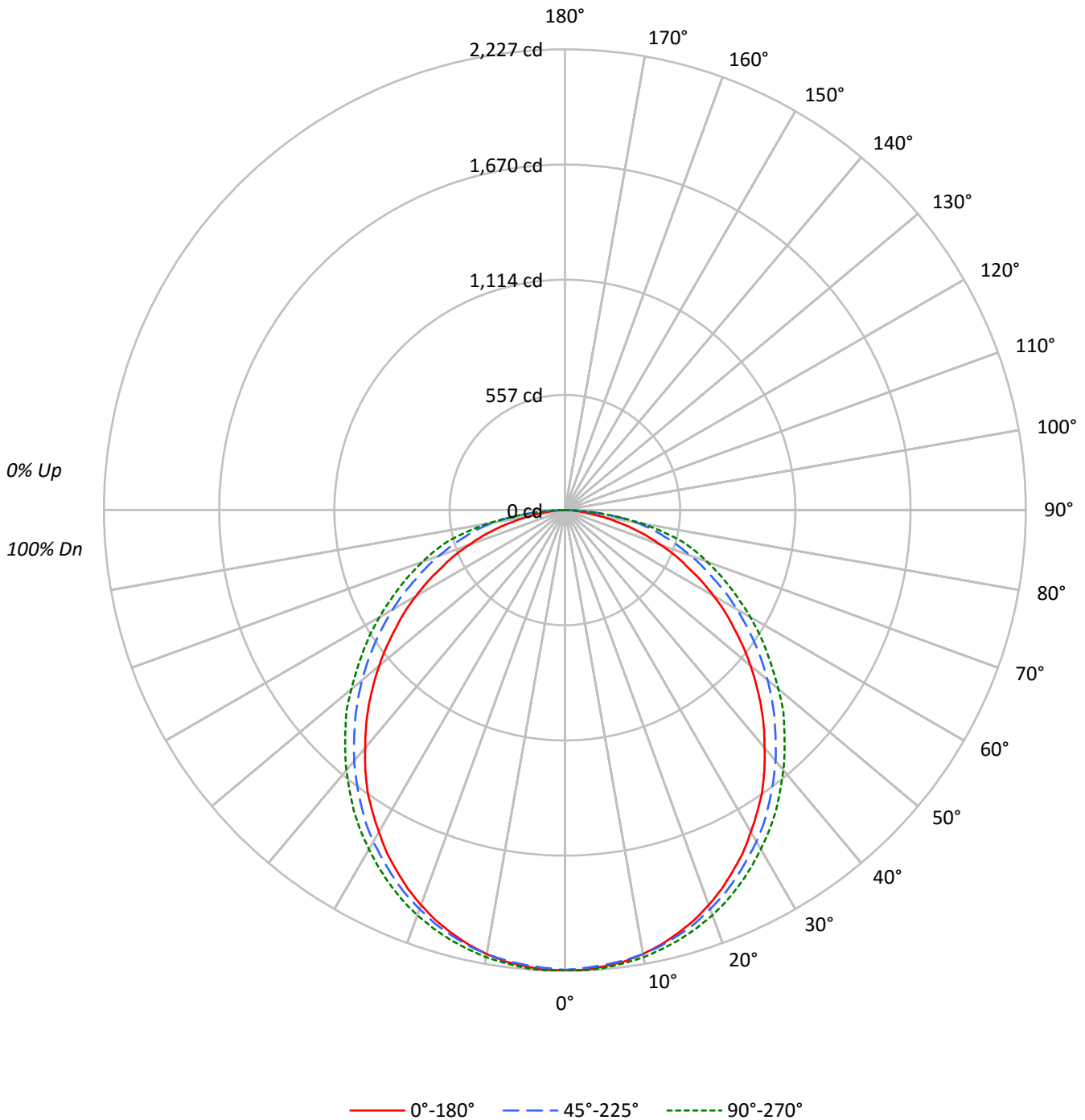
Lumens per Lamp: N/A
Luminaire Lumens: 6327.0 lumens
Efficiency: N/A
Efficacy: 108.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.26 / 1.35
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')
CIE Type: Direct

Input Watts (W): 58.4
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°	2991	2991	2991
5°	2989	2980	2999
10°	2976	2976	2998
15°	2948	2962	2993
20°	2909	2938	2984
25°	2855	2909	2966
30°	2791	2876	2941
35°	2730	2829	2918
40°	2637	2781	2884
45°	2551	2727	2853
50°	2452	2676	2819
55°	2343	2626	2791
60°	2234	2585	2785
65°	2092	2540	2802
70°	1937	2554	2878
75°	1734	2601	3040
80°	1402	2756	2975
85°	1054	2421	2357



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	210.4	3.3
10°-20°	601.3	9.5
20°-30°	903.8	14.3
30°-40°	1076.6	17.0
40°-50°	1101.9	17.4
50°-60°	992.0	15.7
60°-70°	779.0	12.3
70°-80°	505.6	8.0
80°-90°	156.4	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°	1715.5	27.1
0°-40°	2792.1	44.1
0°-60°	4886.0	77.2
0°-90°	6327.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6327.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2223	2223	2223	2223	2223	
5°	2213	2217	2207	2219	2221	210
15°	2116	2122	2126	2144	2148	597
25°	1923	1939	1959	1992	1998	886
35°	1662	1682	1722	1764	1777	1037
45°	1340	1373	1433	1487	1499	1033
55°	999	1043	1119	1178	1190	895
65°	657	707	798	864	880	654
75°	334	398	500	569	585	353
85°	68	127	157	153	153	83
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2222.7	2222.7	2222.7	2222.7	2222.7
2.5°	2224.7	2224.7	2214.7	2224.7	2226.7
5°	2212.7	2216.7	2206.6	2218.7	2220.7
7.5°	2200.6	2200.6	2194.6	2206.6	2208.6
10°	2178.5	2180.5	2178.5	2192.6	2194.6
12.5°	2150.4	2154.4	2156.4	2170.5	2172.5
15°	2116.2	2122.2	2126.3	2144.3	2148.4
17.5°	2078.0	2084.0	2094.1	2114.2	2118.2
20°	2031.8	2039.8	2051.9	2078.0	2084.0
22.5°	1981.6	1989.6	2009.7	2033.8	2043.9
25°	1923.3	1939.4	1959.4	1991.6	1997.6
27.5°	1865.0	1879.1	1905.2	1939.4	1947.4
30°	1796.7	1818.8	1850.9	1885.1	1893.1
32.5°	1730.3	1752.4	1790.6	1826.8	1836.9
35°	1662.0	1682.1	1722.3	1764.5	1776.6
37.5°	1583.6	1609.8	1654.0	1696.2	1708.2
40°	1501.2	1533.4	1583.6	1627.8	1641.9
42.5°	1422.9	1457.0	1507.3	1555.5	1571.6
45°	1340.5	1372.6	1432.9	1487.2	1499.2
47.5°	1256.1	1292.2	1356.5	1410.8	1430.9
50°	1171.6	1209.8	1278.2	1334.4	1346.5
52.5°	1087.2	1127.4	1199.8	1260.1	1266.1
55°	998.8	1043.0	1119.4	1177.7	1189.7
57.5°	918.4	956.6	1039.0	1099.3	1113.4
60°	830.0	872.2	960.6	1016.9	1035.0
62.5°	745.6	789.8	882.3	938.5	954.6
65°	657.2	707.4	797.8	864.2	880.2
67.5°	580.8	629.0	725.5	789.8	805.9
70°	492.4	546.6	649.1	715.4	731.5
72.5°	416.0	472.3	574.8	639.1	663.2
75°	333.6	397.9	500.4	568.7	584.8
77.5°	253.2	327.6	432.1	484.3	484.3
80°	180.9	259.2	355.7	379.8	383.9
82.5°	118.6	194.9	263.3	261.3	261.3
85°	68.3	126.6	156.8	152.7	152.7
87.5°	26.1	52.3	56.3	56.3	54.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)