

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: P311755

Luminaire Tested: **24FCZ2-70HE-UNV-L82765-S-CA08-W2A-U-5000K**

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: P311755
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-CA08-W2A-U-5000K
Description: 2'X4' TROFFER LED MODULE, SMOOTH LENS, 0.08" ACRYLIC SHEET
Light Source: (336) 5000K 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

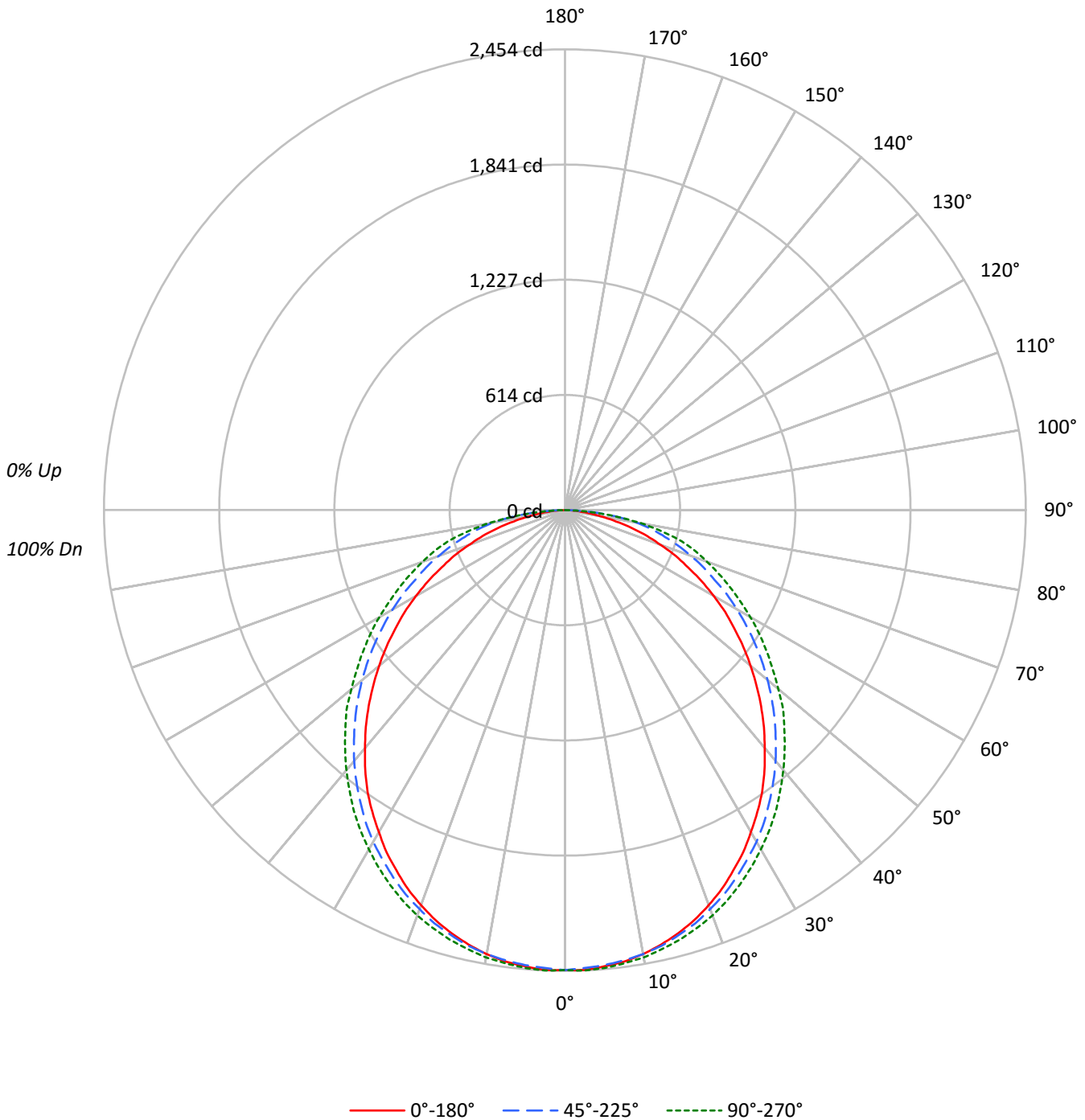
Lumens per Lamp: N/A
Luminaire Lumens: 6974.0 lumens
Efficiency: N/A
Efficacy: 118.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.26 / 1.35
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')
CIE Type: Direct

Input Watts (W): 59.1
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°	3296	3296	3296
5°	3294	3285	3306
10°	3281	3281	3305
15°	3249	3265	3299
20°	3207	3238	3289
25°	3147	3206	3269
30°	3077	3170	3242
35°	3009	3118	3216
40°	2907	3066	3179
45°	2811	3005	3144
50°	2703	2949	3107
55°	2583	2894	3076
60°	2462	2849	3070
65°	2306	2800	3089
70°	2135	2815	3172
75°	1912	2868	3351
80°	1545	3038	3278
85°	1162	2668	2600



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	231.9	3.3
10°-20°	662.7	9.5
20°-30°	996.3	14.3
30°-40°	1186.7	17.0
40°-50°	1214.5	17.4
50°-60°	1093.4	15.7
60°-70°	858.7	12.3
70°-80°	557.3	8.0
80°-90°	172.4	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°	1890.9	27.1
0°-40°	3077.7	44.1
0°-60°	5385.6	77.2
0°-90°	6974.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6974.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2450	2450	2450	2450	2450	
5°	2439	2443	2432	2446	2448	232
15°	2333	2339	2344	2364	2368	658
25°	2120	2138	2160	2195	2202	977
35°	1832	1854	1898	1945	1958	1143
45°	1478	1513	1579	1639	1652	1139
55°	1101	1150	1234	1298	1311	987
65°	724	780	879	952	970	721
75°	368	439	552	627	645	389
85°	75	140	173	168	168	91
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2450.0	2450.0	2450.0	2450.0	2450.0
2.5°	2452.2	2452.2	2441.2	2452.2	2454.4
5°	2438.9	2443.4	2432.3	2445.6	2447.8
7.5°	2425.6	2425.6	2419.0	2432.3	2434.5
10°	2401.3	2403.5	2401.3	2416.8	2419.0
12.5°	2370.3	2374.7	2376.9	2392.4	2394.6
15°	2332.6	2339.3	2343.7	2363.6	2368.0
17.5°	2290.5	2297.2	2308.2	2330.4	2334.8
20°	2239.6	2248.4	2261.7	2290.5	2297.2
22.5°	2184.2	2193.0	2215.2	2241.8	2252.9
25°	2119.9	2137.7	2159.8	2195.3	2201.9
27.5°	2055.7	2071.2	2100.0	2137.7	2146.5
30°	1980.4	2004.8	2040.2	2077.9	2086.7
32.5°	1907.3	1931.7	1973.7	2013.6	2024.7
35°	1832.0	1854.1	1898.4	1944.9	1958.2
37.5°	1745.6	1774.4	1823.1	1869.6	1882.9
40°	1654.8	1690.2	1745.6	1794.3	1809.8
42.5°	1568.4	1606.0	1661.4	1714.6	1732.3
45°	1477.5	1513.0	1579.4	1639.2	1652.5
47.5°	1384.5	1424.4	1495.3	1555.1	1577.2
50°	1291.5	1333.6	1408.9	1470.9	1484.2
52.5°	1198.4	1242.7	1322.5	1388.9	1395.6
55°	1101.0	1149.7	1233.9	1298.1	1311.4
57.5°	1012.3	1054.4	1145.3	1211.7	1227.2
60°	914.9	961.4	1058.9	1120.9	1140.8
62.5°	821.8	870.6	972.5	1034.5	1052.2
65°	724.4	779.8	879.4	952.5	970.3
67.5°	640.2	693.4	799.7	870.6	888.3
70°	542.7	602.5	715.5	788.6	806.3
72.5°	458.5	520.6	633.5	704.4	731.0
75°	367.7	438.6	551.6	626.9	644.6
77.5°	279.1	361.1	476.3	533.9	533.9
80°	199.4	285.8	392.1	418.7	423.1
82.5°	130.7	214.9	290.2	288.0	288.0
85°	75.3	139.6	172.8	168.4	168.4
87.5°	28.8	57.6	62.0	62.0	59.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)