

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: P311785

Luminaire Tested: **24FCZ2-70HE-UNV-L82765-S-CP187-W2A-U-6500K**

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: P311785  
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-6500K  
Description: 2'X4' TROFFER LED MODULE, SMOOTH LENS, 0.187" POLYCARB SHEET  
Light Source: (336) 6500K 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

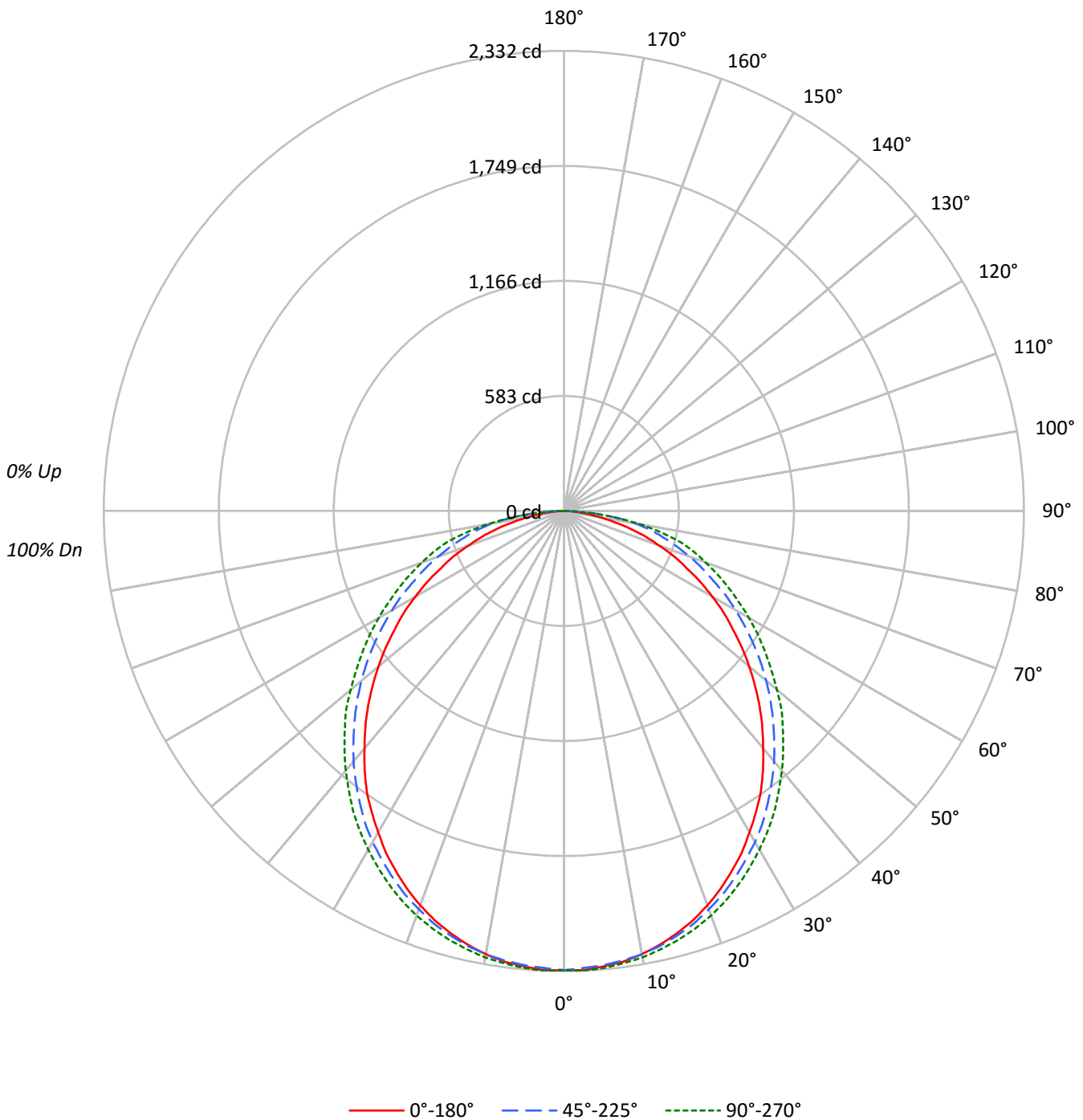
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 6625.0 lumens  
Efficiency: N/A  
Efficacy: 109.9 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): 60.3  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): 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



TEST NUMBER: P311785  
CATALOG NUMBER: 24FCZ2-70HE-UNV-L82765-S-CP187-W2A-U-6500K

### Luminous Intensity Polar Plot





TEST NUMBER: P311785

CATALOG NUMBER: 24FC22-70HE-UNV-L82765-S-CP187-W2A-U-6500K

**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°	3131	3131	3131
5°	3129	3121	3141
10°	3117	3117	3139
15°	3087	3101	3133
20°	3046	3076	3125
25°	2990	3046	3105
30°	2923	3011	3080
35°	2859	2962	3055
40°	2761	2912	3020
45°	2671	2855	2987
50°	2568	2802	2951
55°	2453	2749	2922
60°	2339	2707	2916
65°	2191	2660	2934
70°	2028	2674	3013
75°	1816	2724	3184
80°	1468	2886	3114
85°	1104	2533	2468



TEST NUMBER: P311785

CATALOG NUMBER: 24FCZ2-70HE-UNV-L82765-S-CP187-W2A-U-6500K

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	220.3	3.3
10°-20°	629.6	9.5
20°-30°	946.4	14.3
30°-40°	1127.3	17.0
40°-50°	1153.8	17.4
50°-60°	1038.7	15.7
60°-70°	815.7	12.3
70°-80°	529.4	8.0
80°-90°	163.7	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°	1796.3	27.1
0°-40°	2923.6	44.1
0°-60°	5116.1	77.2
0°-90°	6625.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6625.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2327	2327	2327	2327	2327	
5°	2317	2321	2311	2323	2325	220
15°	2216	2222	2226	2245	2250	625
25°	2014	2031	2052	2085	2092	928
35°	1740	1761	1803	1848	1860	1086
45°	1404	1437	1500	1557	1570	1082
55°	1046	1092	1172	1233	1246	938
65°	688	741	835	905	922	685
75°	349	417	524	596	612	370
85°	72	133	164	160	160	86
90°	0	0	0	0	0	



TEST NUMBER: P311785

CATALOG NUMBER: 24FCZ2-70HE-UNV-L82765-S-CP187-W2A-U-6500K

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2327.4	2327.4	2327.4	2327.4	2327.4
2.5°	2329.5	2329.5	2319.0	2329.5	2331.6
5°	2316.9	2321.1	2310.6	2323.2	2325.3
7.5°	2304.3	2304.3	2297.9	2310.6	2312.7
10°	2281.1	2283.2	2281.1	2295.8	2297.9
12.5°	2251.6	2255.9	2258.0	2272.7	2274.8
15°	2215.9	2222.2	2226.4	2245.3	2249.5
17.5°	2175.9	2182.2	2192.7	2213.8	2218.0
20°	2127.5	2135.9	2148.5	2175.9	2182.2
22.5°	2074.9	2083.3	2104.3	2129.6	2140.1
25°	2013.9	2030.7	2051.7	2085.4	2091.7
27.5°	1952.8	1967.6	1994.9	2030.7	2039.1
30°	1881.3	1904.4	1938.1	1973.9	1982.3
32.5°	1811.8	1835.0	1875.0	1912.8	1923.4
35°	1740.3	1761.3	1803.4	1847.6	1860.2
37.5°	1658.2	1685.6	1731.9	1776.1	1788.7
40°	1571.9	1605.6	1658.2	1704.5	1719.3
42.5°	1489.9	1525.7	1578.3	1628.8	1645.6
45°	1403.6	1437.3	1500.4	1557.2	1569.8
47.5°	1315.2	1353.1	1420.4	1477.3	1498.3
50°	1226.8	1266.8	1338.4	1397.3	1409.9
52.5°	1138.5	1180.5	1256.3	1319.4	1325.7
55°	1045.9	1092.2	1172.1	1233.1	1245.8
57.5°	961.7	1001.7	1087.9	1151.1	1165.8
60°	869.1	913.3	1005.9	1064.8	1083.7
62.5°	780.7	827.0	923.8	982.7	999.6
65°	688.1	740.7	835.4	904.9	921.7
67.5°	608.2	658.7	759.7	827.0	843.8
70°	515.6	572.4	679.7	749.1	766.0
72.5°	435.6	494.5	601.8	669.2	694.4
75°	349.3	416.7	524.0	595.5	612.4
77.5°	265.1	343.0	452.4	507.1	507.1
80°	189.4	271.5	372.5	397.7	401.9
82.5°	124.2	204.1	275.7	273.6	273.6
85°	71.5	132.6	164.1	159.9	159.9
87.5°	27.4	54.7	58.9	58.9	56.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)