

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: P311696

Luminaire Tested: **24FCZ2-60HE-UNV-L82765-S-CP250-W2A-U-2700K**

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: P311696  
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: 24FCZ2-60HE-UNV-L82765-S-CP250-W2A-U-2700K  
Description: 2'X4' TROFFER LED MODULE, SMOOTH LENS, 0.250" POLYCARB SHEET  
Light Source: (336) 2700K 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**

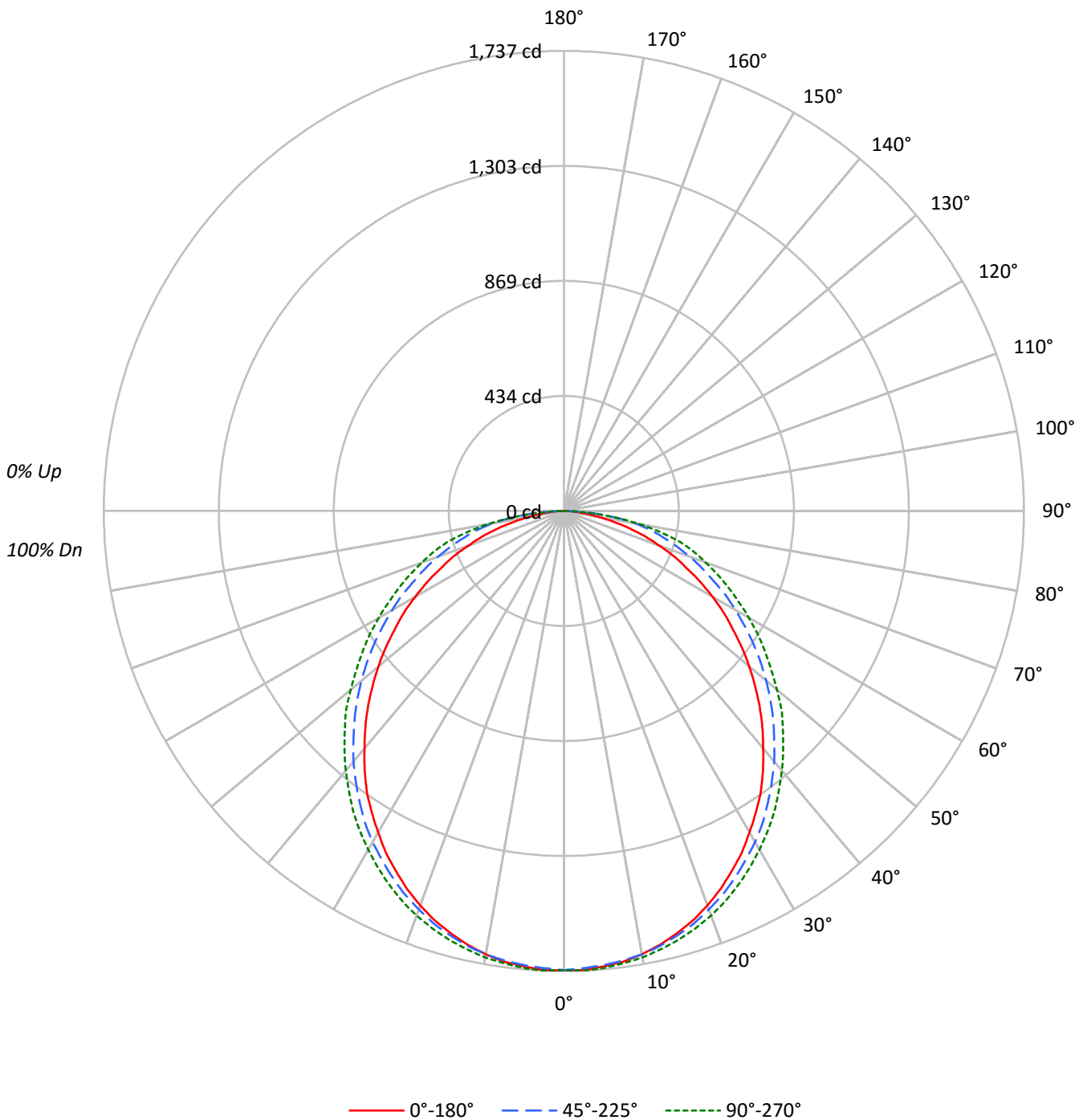
Lumens per Lamp: N/A  
Luminaire Lumens: 4935.0 lumens  
Efficiency: N/A  
Efficacy: 103.7 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.26 / 1.35  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 47.6  
Input Voltage (V): NR  
Input Current (A<sub>in</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



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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°	2333	2333	2333
5°	2331	2325	2339
10°	2322	2322	2339
15°	2299	2310	2334
20°	2269	2292	2327
25°	2227	2269	2313
30°	2177	2243	2294
35°	2129	2207	2276
40°	2057	2170	2249
45°	1989	2127	2225
50°	1913	2087	2198
55°	1828	2048	2177
60°	1742	2016	2172
65°	1632	1981	2186
70°	1511	1992	2245
75°	1353	2029	2372
80°	1093	2150	2320
85°	823	1888	1839



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	164.1	3.3
10°-20°	469.0	9.5
20°-30°	705.0	14.3
30°-40°	839.7	17.0
40°-50°	859.4	17.4
50°-60°	773.7	15.7
60°-70°	607.6	12.3
70°-80°	394.4	8.0
80°-90°	122.0	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°	1338.1	27.1
0°-40°	2177.8	44.1
0°-60°	3811.0	77.2
0°-90°	4935.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4935.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1734	1734	1734	1734	1734	
5°	1726	1729	1721	1731	1732	164
15°	1651	1655	1658	1673	1676	465
25°	1500	1513	1528	1553	1558	691
35°	1296	1312	1343	1376	1386	809
45°	1046	1071	1118	1160	1169	806
55°	779	814	873	919	928	698
65°	513	552	622	674	687	510
75°	260	310	390	444	456	275
85°	53	99	122	119	119	64
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1733.7	1733.7	1733.7	1733.7	1733.7
2.5°	1735.3	1735.3	1727.4	1735.3	1736.8
5°	1725.9	1729.0	1721.2	1730.6	1732.1
7.5°	1716.5	1716.5	1711.8	1721.2	1722.7
10°	1699.2	1700.8	1699.2	1710.2	1711.8
12.5°	1677.3	1680.4	1682.0	1692.9	1694.5
15°	1650.6	1655.3	1658.5	1672.6	1675.7
17.5°	1620.8	1625.5	1633.4	1649.1	1652.2
20°	1584.8	1591.1	1600.5	1620.8	1625.5
22.5°	1545.6	1551.9	1567.5	1586.3	1594.2
25°	1500.1	1512.7	1528.4	1553.4	1558.1
27.5°	1454.7	1465.6	1486.0	1512.7	1518.9
30°	1401.4	1418.6	1443.7	1470.4	1476.6
32.5°	1349.7	1366.9	1396.7	1424.9	1432.7
35°	1296.4	1312.0	1343.4	1376.3	1385.7
37.5°	1235.2	1255.6	1290.1	1323.0	1332.4
40°	1171.0	1196.0	1235.2	1269.7	1280.7
42.5°	1109.8	1136.5	1175.7	1213.3	1225.8
45°	1045.5	1070.6	1117.7	1160.0	1169.4
47.5°	979.7	1007.9	1058.1	1100.4	1116.1
50°	913.9	943.7	997.0	1040.8	1050.3
52.5°	848.0	879.4	935.8	982.8	987.5
55°	779.1	813.6	873.1	918.6	928.0
57.5°	716.4	746.1	810.4	857.4	868.4
60°	647.4	680.3	749.3	793.2	807.3
62.5°	581.6	616.0	688.1	732.0	744.6
65°	512.6	551.8	622.3	674.0	686.6
67.5°	453.0	490.6	565.9	616.0	628.6
70°	384.0	426.4	506.3	558.0	570.6
72.5°	324.5	368.4	448.3	498.5	517.3
75°	260.2	310.4	390.3	443.6	456.2
77.5°	197.5	255.5	337.0	377.8	377.8
80°	141.1	202.2	277.5	296.3	299.4
82.5°	92.5	152.1	205.3	203.8	203.8
85°	53.3	98.8	122.3	119.1	119.1
87.5°	20.4	40.8	43.9	43.9	42.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)