

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: P314457

Luminaire Tested: **24FCZ2-60HE-UNV-L83050-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: P314457  
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-L83050-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**

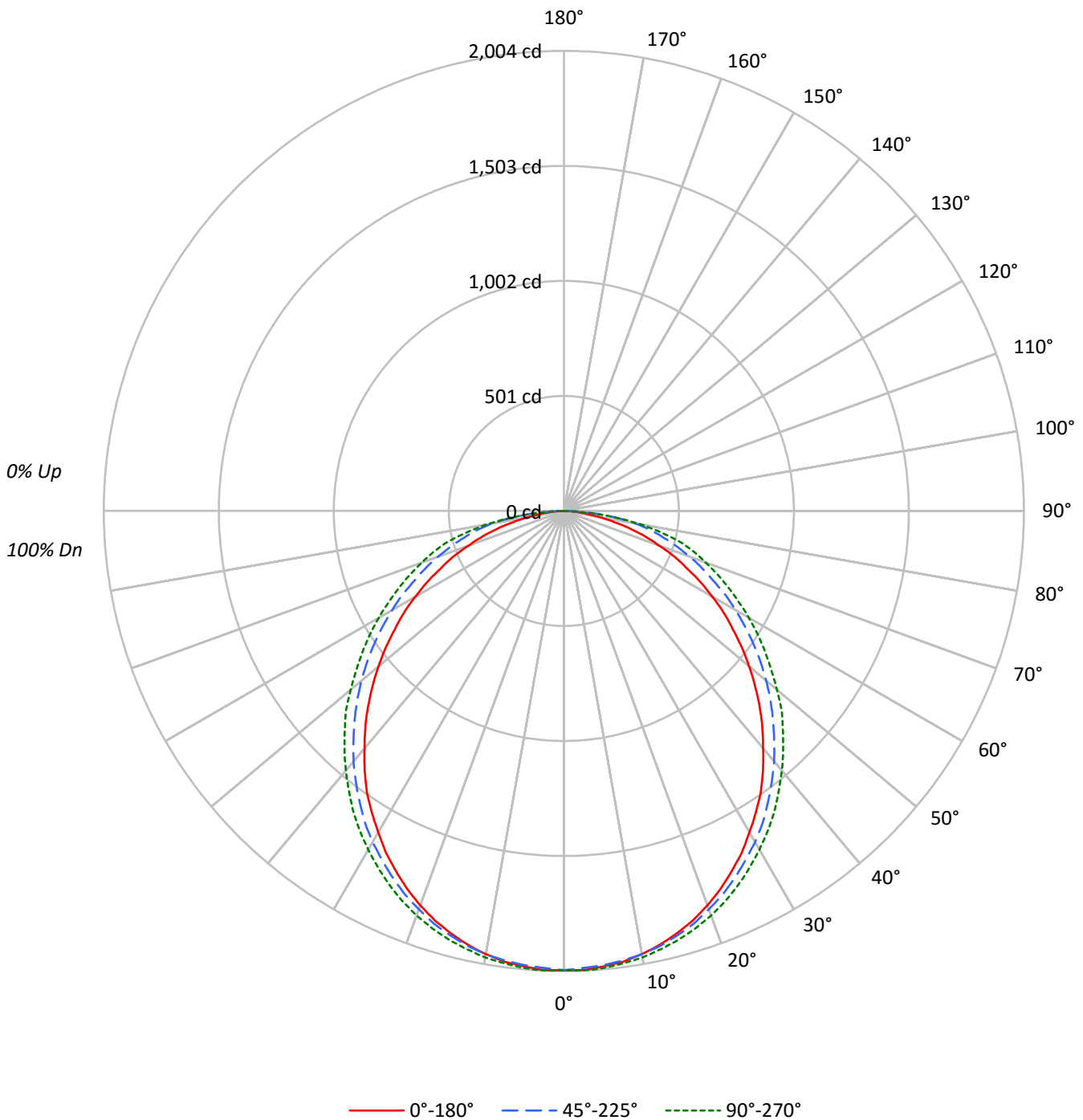
Lumens per Lamp: N/A  
Luminaire Lumens: 5693.0 lumens  
Efficiency: N/A  
Efficacy: 116.9 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.26 / 1.35  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 48.7  
Input Voltage (V): NR  
Input Current (A<sub>in</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: P314457

CATALOG NUMBER: 24FCZ2-60HE-UNV-L83050-S-CP187-W2A-U-4000K

### Luminous Intensity Polar Plot





TEST NUMBER: P314457

CATALOG NUMBER: 24FCZ2-60HE-UNV-L83050-S-CP187-W2A-U-4000K

**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°	2691	2691	2691
5°	2689	2682	2699
10°	2678	2678	2698
15°	2652	2665	2693
20°	2618	2644	2685
25°	2569	2617	2669
30°	2512	2588	2646
35°	2456	2545	2626
40°	2373	2503	2595
45°	2295	2453	2567
50°	2207	2407	2536
55°	2108	2363	2511
60°	2010	2326	2506
65°	1883	2286	2521
70°	1743	2298	2589
75°	1561	2341	2735
80°	1261	2480	2676
85°	949	2177	2121



TEST NUMBER: P314457

CATALOG NUMBER: 24FCZ2-60HE-UNV-L83050-S-CP187-W2A-U-4000K

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	189.3	3.3
10°-20°	541.0	9.5
20°-30°	813.3	14.3
30°-40°	968.7	17.0
40°-50°	991.4	17.4
50°-60°	892.6	15.7
60°-70°	701.0	12.3
70°-80°	455.0	8.0
80°-90°	140.7	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°	1543.6	27.1
0°-40°	2512.3	44.1
0°-60°	4396.4	77.2
0°-90°	5693.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5693.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2000	2000	2000	2000	2000	
5°	1991	1995	1986	1996	1998	189
15°	1904	1910	1913	1930	1933	537
25°	1731	1745	1763	1792	1798	797
35°	1496	1514	1550	1588	1598	933
45°	1206	1235	1289	1338	1349	930
55°	899	938	1007	1060	1070	806
65°	591	636	718	778	792	589
75°	300	358	450	512	526	318
85°	62	114	141	137	137	74
90°	0	0	0	0	0	



TEST NUMBER: P314457

CATALOG NUMBER: 24FCZ2-60HE-UNV-L83050-S-CP187-W2A-U-4000K

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2000.0	2000.0	2000.0	2000.0	2000.0
2.5°	2001.8	2001.8	1992.8	2001.8	2003.6
5°	1990.9	1994.6	1985.5	1996.4	1998.2
7.5°	1980.1	1980.1	1974.7	1985.5	1987.3
10°	1960.2	1962.0	1960.2	1972.9	1974.7
12.5°	1934.9	1938.5	1940.3	1953.0	1954.8
15°	1904.1	1909.6	1913.2	1929.5	1933.1
17.5°	1869.8	1875.2	1884.3	1902.3	1906.0
20°	1828.2	1835.4	1846.3	1869.8	1875.2
22.5°	1783.0	1790.2	1808.3	1830.0	1839.0
25°	1730.6	1745.0	1763.1	1792.0	1797.5
27.5°	1678.1	1690.8	1714.3	1745.0	1752.2
30°	1616.6	1636.5	1665.5	1696.2	1703.4
32.5°	1557.0	1576.8	1611.2	1643.8	1652.8
35°	1495.5	1513.6	1549.7	1587.7	1598.5
37.5°	1424.9	1448.5	1488.2	1526.2	1537.1
40°	1350.8	1379.7	1424.9	1464.7	1477.4
42.5°	1280.3	1311.0	1356.2	1399.6	1414.1
45°	1206.1	1235.1	1289.3	1338.1	1349.0
47.5°	1130.2	1162.7	1220.6	1269.4	1287.5
50°	1054.2	1088.6	1150.1	1200.7	1211.6
52.5°	978.3	1014.5	1079.6	1133.8	1139.2
55°	898.7	938.5	1007.2	1059.7	1070.5
57.5°	826.4	860.8	934.9	989.1	1001.8
60°	746.8	784.8	864.4	915.0	931.3
62.5°	670.9	710.7	793.8	844.5	858.9
65°	591.3	636.5	717.9	777.6	792.0
67.5°	522.6	566.0	652.8	710.7	725.1
70°	443.0	491.9	584.1	643.8	658.2
72.5°	374.3	425.0	517.2	575.0	596.7
75°	300.2	358.0	450.3	511.8	526.2
77.5°	227.8	294.8	388.8	435.8	435.8
80°	162.7	233.3	320.1	341.8	345.4
82.5°	106.7	175.4	236.9	235.1	235.1
85°	61.5	113.9	141.0	137.4	137.4
87.5°	23.5	47.0	50.6	50.6	48.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)