

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: P314458

Luminaire Tested: **24FCZ2-60HE-UNV-L83050-S-CP187-W2A-U-4500K**

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: P314458  
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-4500K  
Description: 2'X4' TROFFER LED MODULE, SMOOTH LENS, 0.187" POLYCARB SHEET  
Light Source: (336) 4500K 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: 5748.0 lumens  
Efficiency: N/A  
Efficacy: 115.2 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

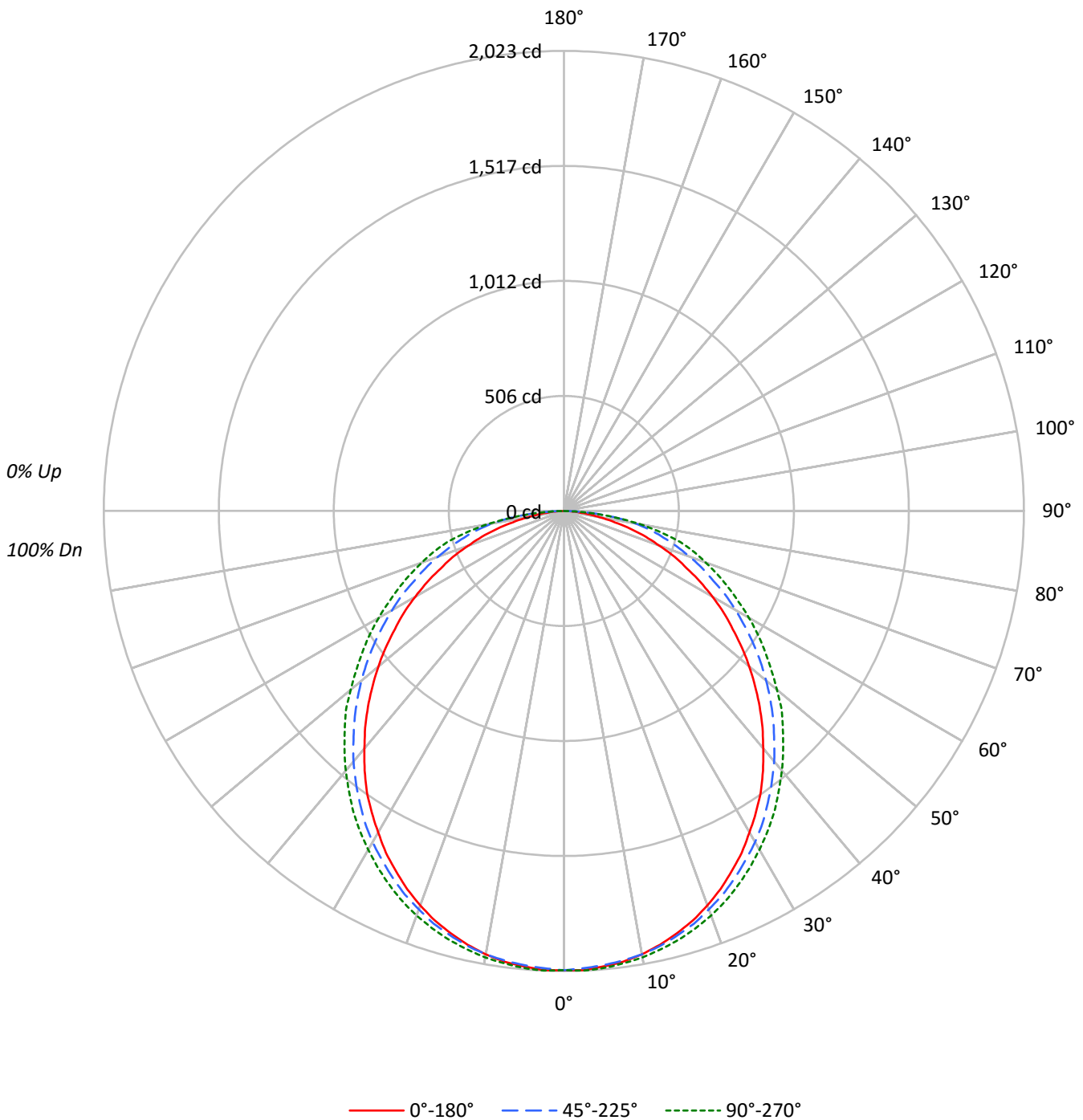
Input Watts (W): 49.9  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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°	2717	2717	2717
5°	2715	2708	2725
10°	2704	2704	2724
15°	2678	2691	2719
20°	2643	2669	2711
25°	2594	2643	2694
30°	2536	2612	2672
35°	2480	2570	2651
40°	2396	2527	2620
45°	2317	2477	2592
50°	2228	2431	2561
55°	2129	2386	2536
60°	2029	2348	2530
65°	1901	2308	2546
70°	1760	2320	2615
75°	1576	2363	2762
80°	1273	2504	2702
85°	959	2198	2143



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	191.2	3.3
10°-20°	546.2	9.5
20°-30°	821.1	14.3
30°-40°	978.1	17.0
40°-50°	1001.0	17.4
50°-60°	901.2	15.7
60°-70°	707.7	12.3
70°-80°	459.3	8.0
80°-90°	142.1	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°	1558.5	27.1
0°-40°	2536.6	44.1
0°-60°	4438.9	77.2
0°-90°	5748.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5748.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2019	2019	2019	2019	2019	
5°	2010	2014	2005	2016	2018	191
15°	1922	1928	1932	1948	1952	542
25°	1747	1762	1780	1809	1815	805
35°	1510	1528	1565	1603	1614	942
45°	1218	1247	1302	1351	1362	939
55°	907	948	1017	1070	1081	813
65°	597	643	725	785	800	594
75°	303	362	455	517	531	321
85°	62	115	142	139	139	75
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2019.3	2019.3	2019.3	2019.3	2019.3
2.5°	2021.1	2021.1	2012.0	2021.1	2023.0
5°	2010.2	2013.8	2004.7	2015.7	2017.5
7.5°	1999.2	1999.2	1993.7	2004.7	2006.5
10°	1979.1	1981.0	1979.1	1991.9	1993.7
12.5°	1953.6	1957.2	1959.1	1971.8	1973.7
15°	1922.5	1928.0	1931.7	1948.1	1951.8
17.5°	1887.9	1893.3	1902.5	1920.7	1924.4
20°	1845.9	1853.2	1864.1	1887.9	1893.3
22.5°	1800.2	1807.5	1825.8	1847.7	1856.8
25°	1747.3	1761.9	1780.1	1809.3	1814.8
27.5°	1694.3	1707.1	1730.8	1761.9	1769.2
30°	1632.2	1652.3	1681.5	1712.6	1719.9
32.5°	1572.0	1592.1	1626.8	1659.6	1668.8
35°	1509.9	1528.2	1564.7	1603.0	1614.0
37.5°	1438.7	1462.4	1502.6	1541.0	1551.9
40°	1363.9	1393.1	1438.7	1478.9	1491.7
42.5°	1292.7	1323.7	1369.3	1413.2	1427.8
45°	1217.8	1247.0	1301.8	1351.1	1362.0
47.5°	1141.1	1174.0	1232.4	1281.7	1300.0
50°	1064.4	1099.1	1161.2	1212.3	1223.3
52.5°	987.7	1024.3	1090.0	1144.8	1150.2
55°	907.4	947.6	1017.0	1069.9	1080.9
57.5°	834.4	869.1	943.9	998.7	1011.5
60°	754.0	792.4	872.7	923.8	940.3
62.5°	677.4	717.5	801.5	852.6	867.2
65°	597.0	642.7	724.8	785.1	799.7
67.5°	527.6	571.5	659.1	717.5	732.1
70°	447.3	496.6	589.7	650.0	664.6
72.5°	377.9	429.1	522.2	580.6	602.5
75°	303.1	361.5	454.6	516.7	531.3
77.5°	230.0	297.6	392.5	440.0	440.0
80°	164.3	235.5	323.2	345.1	348.7
82.5°	107.7	177.1	239.2	237.4	237.4
85°	62.1	115.0	142.4	138.8	138.8
87.5°	23.7	47.5	51.1	51.1	49.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)