

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: P314084

Luminaire Tested: **24FCZ2-60HE-UNV-L83050-CP187-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: P314084
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1805-783-15)
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-CP187-W2A-U-5000K
Description: 2'X4' TROFFER LED MODULE, RIBBED LENS, 0.187" POLYCARB 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: 5470.0 lumens
Efficiency: N/A
Efficacy: 109.6 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.29 / 1.38
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')
CIE Type: Direct

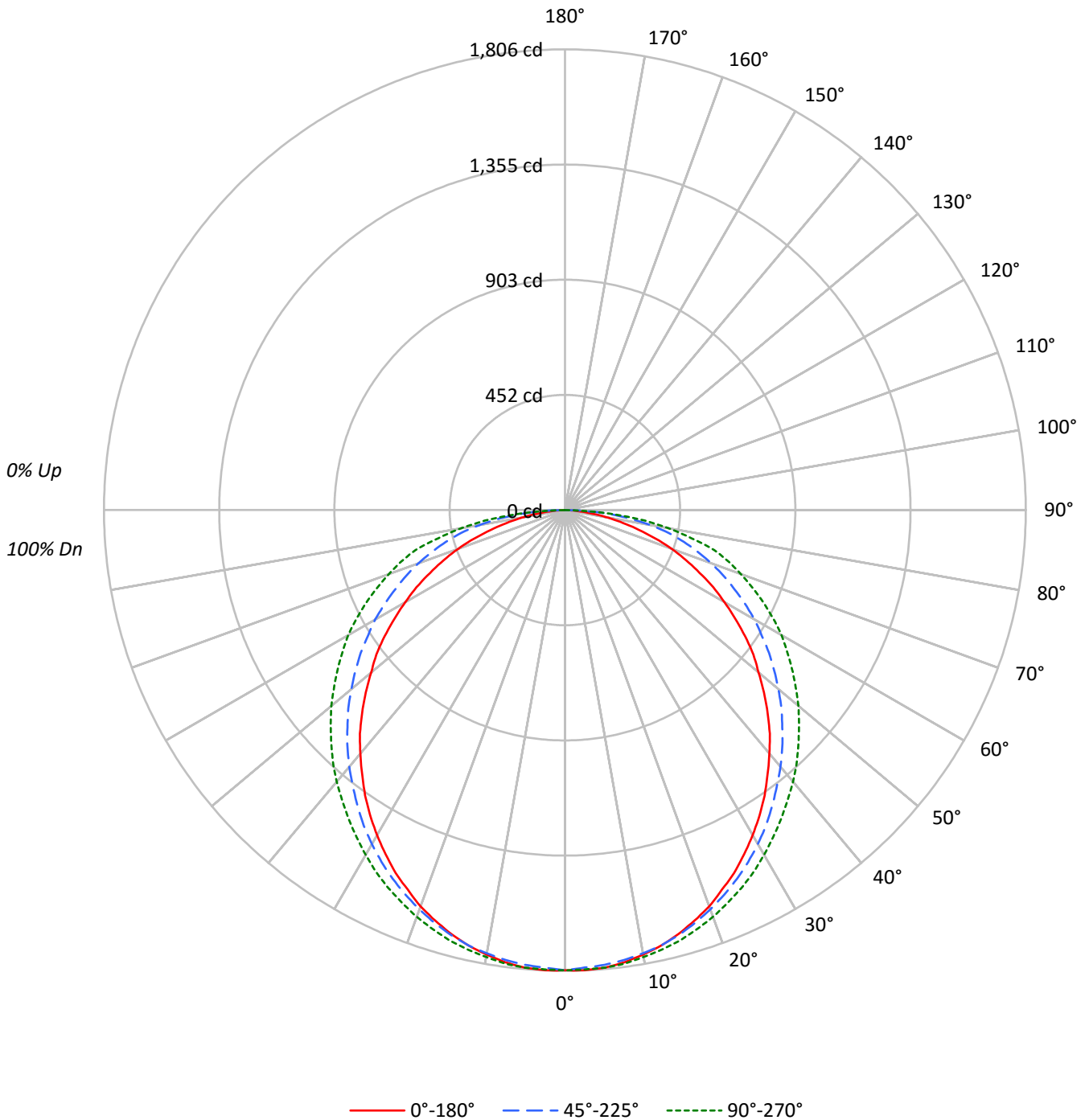
Input Watts (W): 49.9
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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	100	100	100	100	100		
	1	108	103	98	94	105	100	96	92	96	92	89	92	89	87	88	86	84	82	82	82	82	82	82		
	2	98	89	81	75	95	87	80	74	83	78	73	80	75	71	77	73	69	67	67	67	67	67	67		
	3	89	77	69	62	86	76	68	61	73	66	60	70	64	59	67	62	58	56	56	56	56	56	56		
	4	81	68	59	52	79	67	58	52	64	57	51	62	56	50	60	54	50	47	47	47	47	47	47		
	5	74	61	52	45	72	60	51	44	58	50	44	56	49	43	54	48	43	41	41	41	41	41	41		
	6	69	55	46	39	67	54	45	39	52	44	38	50	43	38	49	42	38	36	36	36	36	36	36		
	7	64	50	41	34	62	49	40	34	47	39	34	46	39	34	44	38	33	31	31	31	31	31	31		
	8	59	45	37	31	57	45	36	30	43	36	30	42	35	30	41	34	30	28	28	28	28	28	28		
	9	55	41	33	27	54	41	33	27	40	32	27	39	32	27	38	31	27	25	25	25	25	25	25		
	10	52	38	30	25	50	38	30	25	37	30	25	36	29	25	35	29	24	23	23	23	23	23	23		

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2427	2427	2427
5°	2432	2417	2432
10°	2418	2410	2430
15°	2397	2402	2432
20°	2367	2385	2430
25°	2330	2368	2428
30°	2287	2349	2425
35°	2242	2325	2427
40°	2190	2308	2442
45°	2138	2293	2462
50°	2074	2287	2500
55°	2022	2290	2550
60°	1944	2310	2637
65°	1855	2334	2733
70°	1757	2406	2884
75°	1566	2509	3151
80°	1336	2658	3220
85°	953	2634	3081



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	170.7	3.1
10°-20°	488.2	8.9
20°-30°	737.3	13.5
30°-40°	888.6	16.2
40°-50°	932.9	17.1
50°-60°	872.8	16.0
60°-70°	720.8	13.2
70°-80°	491.1	9.0
80°-90°	167.5	3.1
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°	1396.2	25.5
0°-40°	2284.9	41.8
0°-60°	4090.6	74.8
0°-90°	5470.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5470.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1804	1804	1804	1804	1804	
5°	1800	1798	1789	1800	1800	171
15°	1720	1722	1724	1742	1746	485
25°	1570	1577	1595	1626	1635	722
35°	1365	1379	1416	1463	1477	853
45°	1123	1147	1205	1270	1294	866
55°	862	896	976	1056	1087	769
65°	583	632	733	826	858	578
75°	301	370	483	574	606	321
85°	62	122	171	192	200	77
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1804.0	1804.0	1804.0	1804.0	1804.0
2.5°	1805.8	1804.0	1794.9	1804.0	1802.1
5°	1800.3	1798.5	1789.4	1800.3	1800.3
7.5°	1787.6	1787.6	1778.6	1791.3	1793.1
10°	1769.5	1769.5	1764.0	1778.6	1778.6
12.5°	1747.7	1747.7	1747.7	1762.2	1764.0
15°	1720.5	1722.3	1724.1	1742.3	1745.9
17.5°	1687.8	1691.4	1696.9	1718.7	1722.3
20°	1653.3	1657.0	1666.0	1691.4	1696.9
22.5°	1609.8	1618.8	1631.5	1660.6	1666.0
25°	1569.8	1577.1	1595.3	1626.1	1635.2
27.5°	1520.8	1531.7	1555.3	1588.0	1600.7
30°	1471.8	1482.7	1511.8	1549.9	1560.8
32.5°	1419.2	1435.5	1466.4	1506.3	1519.0
35°	1364.8	1379.3	1415.6	1462.8	1477.3
37.5°	1304.9	1324.8	1364.8	1415.6	1433.7
40°	1246.8	1268.6	1313.9	1368.4	1390.2
42.5°	1188.7	1210.5	1261.3	1323.0	1344.8
45°	1123.4	1147.0	1205.1	1270.4	1294.0
47.5°	1058.1	1087.1	1150.6	1219.6	1245.0
50°	990.9	1023.6	1092.5	1165.1	1194.2
52.5°	931.0	961.9	1034.5	1112.5	1139.7
55°	862.1	896.5	976.4	1056.2	1087.1
57.5°	791.3	829.4	914.7	1001.8	1032.6
60°	722.3	764.1	858.4	945.5	980.0
62.5°	655.2	696.9	794.9	885.6	920.1
65°	582.6	631.6	733.2	825.8	858.4
67.5°	513.6	566.2	673.3	764.1	796.7
70°	446.5	497.3	611.6	700.5	733.2
72.5°	373.9	431.9	546.3	638.8	673.3
75°	301.3	370.2	482.7	573.5	606.2
77.5°	234.1	304.9	417.4	491.8	508.2
80°	172.4	245.0	343.0	395.6	415.6
82.5°	110.7	183.3	261.3	299.4	315.8
85°	61.7	121.6	170.6	192.4	199.6
87.5°	25.4	52.6	69.0	78.0	78.0
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)