

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: P311689

Luminaire Tested: **24FCZ2-60HE-UNV-L82765-S-CP187-W2A-U-3500K**

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: P311689
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-CP187-W2A-U-3500K
Description: 2'X4' TROFFER LED MODULE, SMOOTH LENS, 0.187" POLYCARB SHEET
Light Source: (336) 3500K 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: 5295.0 lumens
Efficiency: N/A
Efficacy: 110.8 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

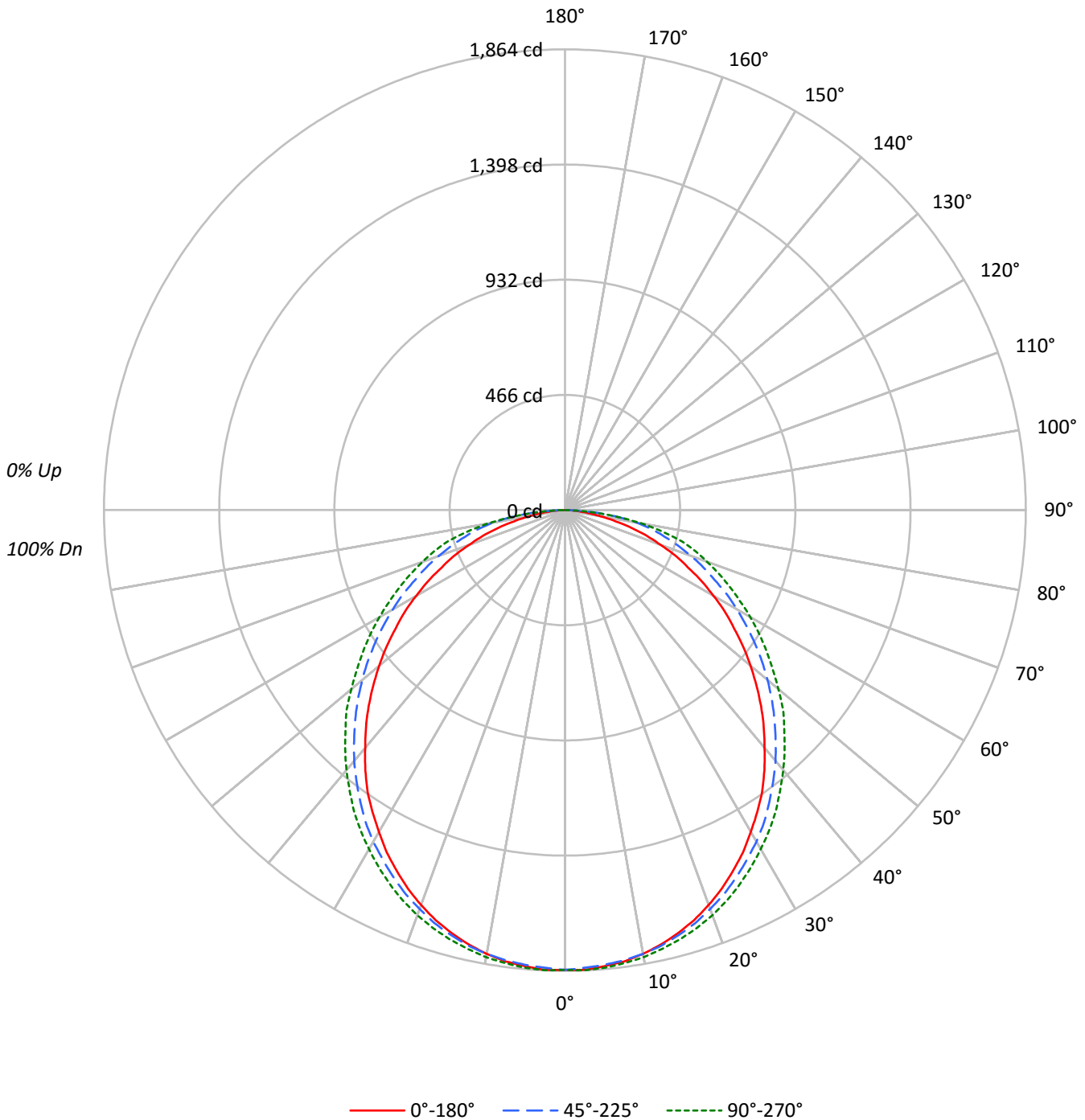
Input Watts (W): 47.8
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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°	2503	2503	2503
5°	2501	2494	2510
10°	2491	2491	2509
15°	2467	2479	2504
20°	2435	2459	2497
25°	2390	2434	2482
30°	2336	2407	2461
35°	2285	2368	2442
40°	2207	2328	2413
45°	2135	2282	2387
50°	2052	2239	2359
55°	1961	2198	2336
60°	1869	2163	2331
65°	1751	2126	2345
70°	1621	2137	2408
75°	1451	2177	2544
80°	1173	2307	2489
85°	883	2025	1973



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	176.1	3.3
10°-20°	503.2	9.5
20°-30°	756.4	14.3
30°-40°	901.0	17.0
40°-50°	922.1	17.4
50°-60°	830.2	15.7
60°-70°	652.0	12.3
70°-80°	423.1	8.0
80°-90°	130.9	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°	1435.7	27.1
0°-40°	2336.7	44.1
0°-60°	4089.0	77.2
0°-90°	5295.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5295.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1860	1860	1860	1860	1860	
5°	1852	1855	1847	1857	1858	176
15°	1771	1776	1779	1795	1798	499
25°	1610	1623	1640	1667	1672	741
35°	1391	1408	1441	1477	1487	868
45°	1122	1149	1199	1245	1255	865
55°	836	873	937	986	996	749
65°	550	592	668	723	737	548
75°	279	333	419	476	489	295
85°	57	106	131	128	128	69
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1860.2	1860.2	1860.2	1860.2	1860.2
2.5°	1861.8	1861.8	1853.4	1861.8	1863.5
5°	1851.8	1855.1	1846.7	1856.8	1858.5
7.5°	1841.7	1841.7	1836.6	1846.7	1848.4
10°	1823.2	1824.8	1823.2	1834.9	1836.6
12.5°	1799.6	1803.0	1804.7	1816.4	1818.1
15°	1771.0	1776.1	1779.4	1794.6	1797.9
17.5°	1739.1	1744.1	1752.5	1769.3	1772.7
20°	1700.4	1707.1	1717.2	1739.1	1744.1
22.5°	1658.3	1665.1	1681.9	1702.1	1710.5
25°	1609.6	1623.0	1639.8	1666.8	1671.8
27.5°	1560.8	1572.6	1594.4	1623.0	1629.7
30°	1503.6	1522.1	1549.0	1577.6	1584.3
32.5°	1448.1	1466.6	1498.6	1528.8	1537.2
35°	1390.9	1407.7	1441.4	1476.7	1486.8
37.5°	1325.3	1347.2	1384.2	1419.5	1429.6
40°	1256.4	1283.3	1325.3	1362.3	1374.1
42.5°	1190.8	1219.4	1261.4	1301.8	1315.2
45°	1121.8	1148.7	1199.2	1244.6	1254.7
47.5°	1051.2	1081.5	1135.3	1180.7	1197.5
50°	980.5	1012.5	1069.7	1116.8	1126.9
52.5°	909.9	943.5	1004.1	1054.5	1059.6
55°	835.9	872.9	936.8	985.6	995.7
57.5°	768.6	800.6	869.5	920.0	931.8
60°	694.6	729.9	803.9	851.0	866.2
62.5°	624.0	661.0	738.3	785.4	798.9
65°	550.0	592.0	667.7	723.2	736.7
67.5°	486.1	526.4	607.2	661.0	674.4
70°	412.1	457.5	543.2	598.8	612.2
72.5°	348.2	395.2	481.0	534.8	555.0
75°	279.2	333.0	418.8	476.0	489.4
77.5°	211.9	274.1	361.6	405.3	405.3
80°	151.4	217.0	297.7	317.9	321.2
82.5°	99.2	163.1	220.3	218.6	218.6
85°	57.2	106.0	131.2	127.8	127.8
87.5°	21.9	43.7	47.1	47.1	45.4
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)