

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: P311012

Luminaire Tested: **24FCZ2-60HE-UNV-L82765-CP187-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: P311012
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-L82765-CP187-W2A-U-2700K
Description: 2'X4' TROFFER LED MODULE, RIBBED LENS, 0.187" 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: 4735.0 lumens
Efficiency: N/A
Efficacy: 99.5 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

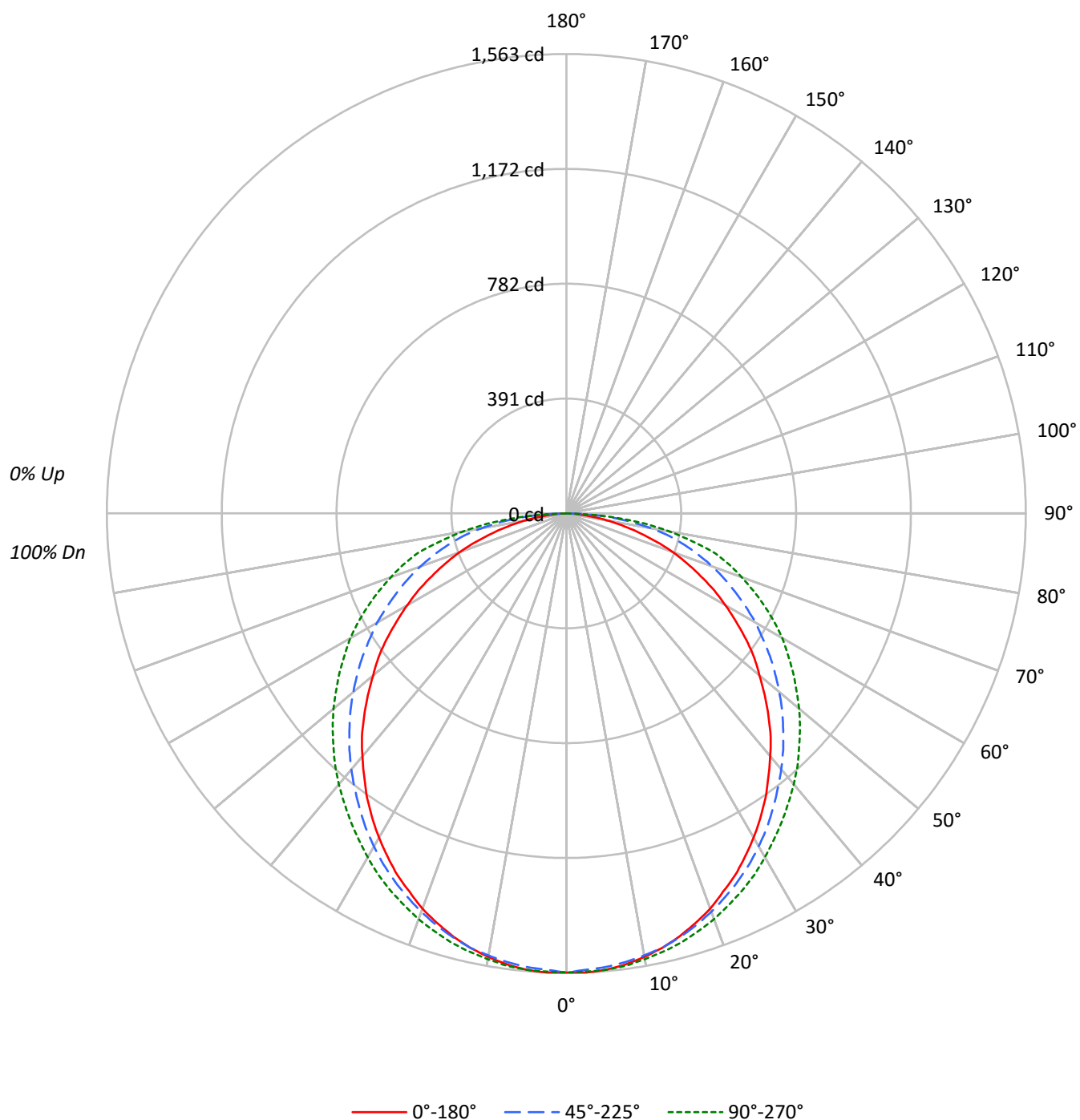
Input Watts (W): 47.6
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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				0
RW	70	50	30	10	70	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		100
1	108	103	98	94	105	100	96	92	96	92	89		92	89	87		82
2	98	89	81	75	95	87	80	74	83	78	73		80	75	71		67
3	89	77	69	62	86	76	68	61	73	66	60		70	64	59		56
4	81	68	59	52	79	67	58	52	64	57	51		62	56	50		47
5	74	61	52	45	72	60	51	44	58	50	44		56	49	43		41
6	69	55	46	39	67	54	45	39	52	44	38		50	43	38		36
7	64	50	41	34	62	49	40	34	47	39	34		46	39	34		31
8	59	45	37	31	57	45	36	30	43	36	30		42	35	30		28
9	55	41	33	27	54	41	33	27	40	32	27		39	32	27		25
10	52	38	30	25	50	38	30	25	37	30	25		36	29	25		23

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2101	2101	2101
5°	2105	2092	2105
10°	2093	2086	2103
15°	2075	2079	2105
20°	2049	2065	2103
25°	2017	2050	2101
30°	1979	2033	2099
35°	1940	2013	2100
40°	1896	1998	2114
45°	1850	1985	2131
50°	1796	1980	2164
55°	1750	1983	2207
60°	1683	2000	2283
65°	1606	2021	2366
70°	1520	2083	2497
75°	1356	2172	2728
80°	1156	2300	2788
85°	824	2280	2668



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	147.8	3.1
10°-20°	422.6	8.9
20°-30°	638.3	13.5
30°-40°	769.2	16.2
40°-50°	807.6	17.1
50°-60°	755.5	16.0
60°-70°	623.9	13.2
70°-80°	425.2	9.0
80°-90°	145.0	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°	1208.6	25.5
0°-40°	1977.8	41.8
0°-60°	3540.9	74.8
0°-90°	4735.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4735.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1562	1562	1562	1562	1562	
5°	1558	1557	1549	1558	1558	148
15°	1489	1491	1492	1508	1511	420
25°	1359	1365	1381	1408	1416	625
35°	1181	1194	1225	1266	1279	738
45°	972	993	1043	1100	1120	750
55°	746	776	845	914	941	666
65°	504	547	635	715	743	500
75°	261	320	418	496	525	278
85°	53	105	148	166	173	67
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1561.6	1561.6	1561.6	1561.6	1561.6
2.5°	1563.1	1561.6	1553.7	1561.6	1560.0
5°	1558.4	1556.8	1549.0	1558.4	1558.4
7.5°	1547.4	1547.4	1539.6	1550.6	1552.1
10°	1531.7	1531.7	1527.0	1539.6	1539.6
12.5°	1512.9	1512.9	1512.9	1525.4	1527.0
15°	1489.3	1490.9	1492.4	1508.1	1511.3
17.5°	1461.0	1464.2	1468.9	1487.7	1490.9
20°	1431.2	1434.3	1442.2	1464.2	1468.9
22.5°	1393.5	1401.3	1412.3	1437.5	1442.2
25°	1358.9	1365.2	1380.9	1407.6	1415.5
27.5°	1316.5	1325.9	1346.3	1374.6	1385.6
30°	1274.1	1283.5	1308.6	1341.6	1351.0
32.5°	1228.5	1242.7	1269.4	1303.9	1314.9
35°	1181.4	1194.0	1225.4	1266.2	1278.8
37.5°	1129.5	1146.8	1181.4	1225.4	1241.1
40°	1079.3	1098.1	1137.4	1184.5	1203.4
42.5°	1029.0	1047.8	1091.8	1145.3	1164.1
45°	972.4	992.9	1043.1	1099.7	1120.1
47.5°	915.9	941.0	996.0	1055.7	1077.7
50°	857.8	886.0	945.7	1008.6	1033.7
52.5°	805.9	832.6	895.5	963.0	986.6
55°	746.2	776.1	845.2	914.3	941.0
57.5°	685.0	717.9	791.8	867.2	893.9
60°	625.3	661.4	743.1	818.5	848.3
62.5°	567.1	603.3	688.1	766.6	796.5
65°	504.3	546.7	634.7	714.8	743.1
67.5°	444.6	490.1	582.8	661.4	689.7
70°	386.5	430.5	529.4	606.4	634.7
72.5°	323.6	373.9	472.9	553.0	582.8
75°	260.8	320.5	417.9	496.4	524.7
77.5°	202.7	263.9	361.3	425.7	439.9
80°	149.2	212.1	296.9	342.5	359.8
82.5°	95.8	158.7	226.2	259.2	273.4
85°	53.4	105.3	147.7	166.5	172.8
87.5°	22.0	45.6	59.7	67.6	67.6
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)