

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: P311058

Luminaire Tested: **24FCZ2-65HE-UNV-L82765-CP187-W2A-U-3000K**

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: P311058
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: 24FCZ2-65HE-UNV-L82765-CP187-W2A-U-3000K
Description: 2'X4' TROFFER LED MODULE, RIBBED LENS, 0.187" POLYCARB SHEET
Light Source: (336) 3000K 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: 5279.0 lumens
Efficiency: N/A
Efficacy: 101.1 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

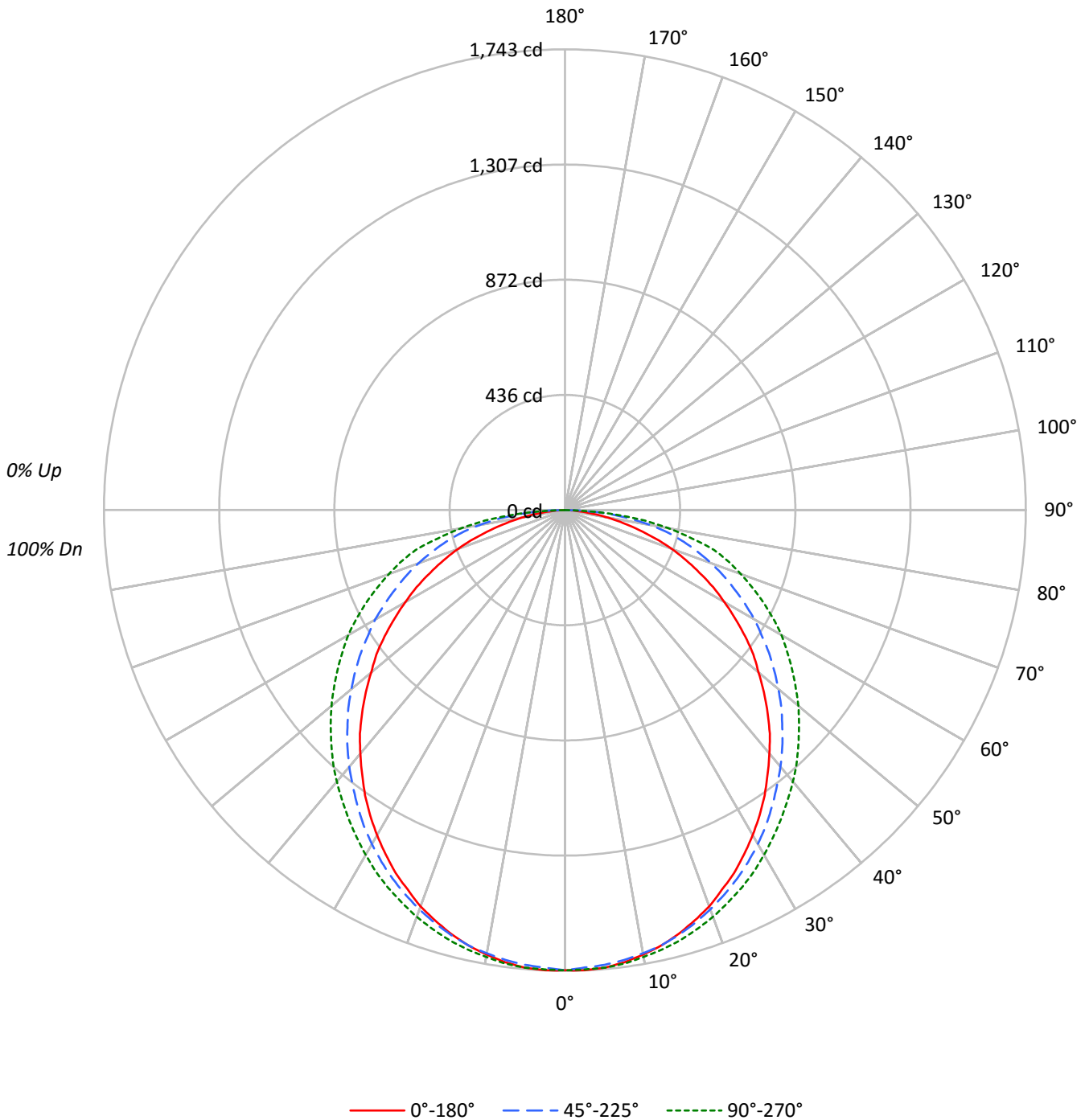
Input Watts (W): 52.2
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2342	2342	2342
5°	2347	2333	2347
10°	2333	2326	2345
15°	2313	2318	2347
20°	2285	2302	2345
25°	2249	2286	2343
30°	2207	2267	2340
35°	2163	2244	2342
40°	2113	2227	2356
45°	2063	2213	2376
50°	2002	2207	2412
55°	1952	2210	2461
60°	1876	2229	2545
65°	1790	2253	2637
70°	1695	2322	2784
75°	1511	2422	3041
80°	1289	2565	3108
85°	920	2541	2975



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	164.8	3.1
10°-20°	471.1	8.9
20°-30°	711.6	13.5
30°-40°	857.6	16.2
40°-50°	900.3	17.1
50°-60°	842.3	16.0
60°-70°	695.6	13.2
70°-80°	474.0	9.0
80°-90°	161.7	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°	1347.5	25.5
0°-40°	2205.1	41.8
0°-60°	3947.7	74.8
0°-90°	5279.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5279.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1741	1741	1741	1741	1741	
5°	1738	1736	1727	1738	1738	165
15°	1660	1662	1664	1681	1685	468
25°	1515	1522	1540	1569	1578	697
35°	1317	1331	1366	1412	1426	823
45°	1084	1107	1163	1226	1249	836
55°	832	865	942	1019	1049	743
65°	562	610	708	797	828	558
75°	291	357	466	554	585	310
85°	60	117	165	186	193	75
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1741.0	1741.0	1741.0	1741.0	1741.0
2.5°	1742.7	1741.0	1732.2	1741.0	1739.2
5°	1737.5	1735.7	1727.0	1737.5	1737.5
7.5°	1725.2	1725.2	1716.4	1728.7	1730.5
10°	1707.7	1707.7	1702.4	1716.4	1716.4
12.5°	1686.7	1686.7	1686.7	1700.7	1702.4
15°	1660.4	1662.2	1663.9	1681.4	1684.9
17.5°	1628.9	1632.4	1637.6	1658.6	1662.2
20°	1595.6	1599.1	1607.9	1632.4	1637.6
22.5°	1553.6	1562.3	1574.6	1602.6	1607.9
25°	1515.0	1522.0	1539.5	1569.3	1578.1
27.5°	1467.7	1478.2	1501.0	1532.5	1544.8
30°	1420.4	1431.0	1459.0	1495.8	1506.3
32.5°	1369.7	1385.4	1415.2	1453.7	1466.0
35°	1317.1	1331.1	1366.2	1411.7	1425.7
37.5°	1259.3	1278.6	1317.1	1366.2	1383.7
40°	1203.3	1224.3	1268.1	1320.6	1341.6
42.5°	1147.2	1168.2	1217.3	1276.8	1297.8
45°	1084.2	1106.9	1163.0	1226.0	1248.8
47.5°	1021.1	1049.1	1110.4	1177.0	1201.5
50°	956.3	987.8	1054.4	1124.4	1152.5
52.5°	898.5	928.3	998.3	1073.7	1099.9
55°	832.0	865.2	942.3	1019.4	1049.1
57.5°	763.6	800.4	882.7	966.8	996.6
60°	697.1	737.4	828.4	912.5	945.8
62.5°	632.3	672.6	767.1	854.7	888.0
65°	562.2	609.5	707.6	796.9	828.4
67.5°	495.7	546.5	649.8	737.4	768.9
70°	430.9	479.9	590.2	676.1	707.6
72.5°	360.8	416.9	527.2	616.5	649.8
75°	290.7	357.3	465.9	553.5	585.0
77.5°	225.9	294.2	402.8	474.7	490.4
80°	166.4	236.4	331.0	381.8	401.1
82.5°	106.8	176.9	252.2	289.0	304.8
85°	59.6	117.3	164.6	185.7	192.7
87.5°	24.5	50.8	66.6	75.3	75.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)