

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: P314356

Luminaire Tested: **24FCZ2-45-UNV-L83050-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: P314356
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: 24FCZ2-45-UNV-L83050-S-CP187-W2A-U-3500K
Description: 2'X4' TROFFER LED MODULE, SMOOTH LENS, 0.187" POLYCARB SHEET
Light Source: (168) 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: 4074.0 lumens
Efficiency: N/A
Efficacy: 108.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.27 / 1.35
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')
CIE Type: Direct

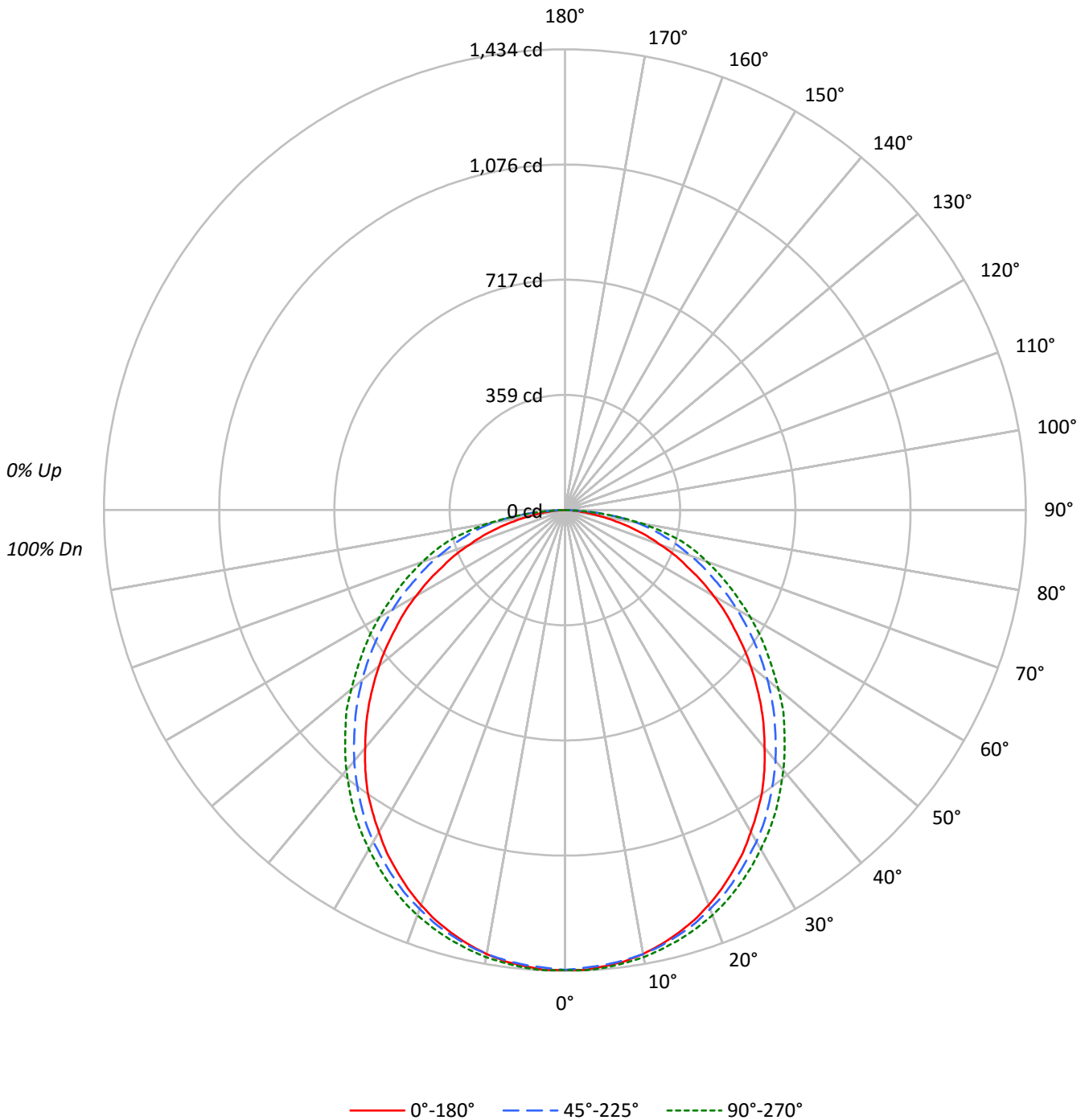
Input Watts (W): 37.6
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	1926	1926	1926
5°	1924	1919	1931
10°	1917	1917	1931
15°	1898	1907	1927
20°	1873	1892	1921
25°	1839	1873	1910
30°	1797	1852	1894
35°	1758	1822	1879
40°	1698	1791	1857
45°	1642	1756	1837
50°	1579	1723	1815
55°	1509	1691	1797
60°	1438	1665	1793
65°	1347	1635	1805
70°	1247	1644	1853
75°	1117	1675	1958
80°	903	1774	1915
85°	679	1558	1518



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	135.5	3.3
10°-20°	387.2	9.5
20°-30°	582.0	14.3
30°-40°	693.2	17.0
40°-50°	709.5	17.4
50°-60°	638.8	15.7
60°-70°	501.6	12.3
70°-80°	325.6	8.0
80°-90°	100.7	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°	1104.6	27.1
0°-40°	1797.9	44.1
0°-60°	3146.1	77.2
0°-90°	4074.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4074.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1431	1431	1431	1431	1431	
5°	1425	1427	1421	1429	1430	135
15°	1363	1366	1369	1381	1383	384
25°	1238	1249	1262	1282	1286	570
35°	1070	1083	1109	1136	1144	668
45°	863	884	923	958	965	665
55°	643	672	721	758	766	577
65°	423	456	514	556	567	421
75°	215	256	322	366	377	227
85°	44	82	101	98	98	53
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1431.2	1431.2	1431.2	1431.2	1431.2
2.5°	1432.5	1432.5	1426.0	1432.5	1433.8
5°	1424.8	1427.3	1420.9	1428.6	1429.9
7.5°	1417.0	1417.0	1413.1	1420.9	1422.2
10°	1402.8	1404.0	1402.8	1411.8	1413.1
12.5°	1384.6	1387.2	1388.5	1397.6	1398.9
15°	1362.6	1366.5	1369.1	1380.8	1383.3
17.5°	1338.1	1341.9	1348.4	1361.3	1363.9
20°	1308.3	1313.5	1321.2	1338.1	1341.9
22.5°	1275.9	1281.1	1294.1	1309.6	1316.1
25°	1238.4	1248.8	1261.7	1282.4	1286.3
27.5°	1200.9	1209.9	1226.8	1248.8	1253.9
30°	1156.9	1171.1	1191.8	1213.8	1219.0
32.5°	1114.2	1128.4	1153.0	1176.3	1182.8
35°	1070.2	1083.1	1109.0	1136.2	1143.9
37.5°	1019.7	1036.5	1065.0	1092.2	1099.9
40°	966.7	987.4	1019.7	1048.2	1057.2
42.5°	916.2	938.2	970.5	1001.6	1011.9
45°	863.1	883.8	922.7	957.6	965.4
47.5°	808.8	832.1	873.5	908.4	921.4
50°	754.4	779.0	823.0	859.3	867.0
52.5°	700.1	726.0	772.5	811.4	815.3
55°	643.1	671.6	720.8	758.3	766.1
57.5°	591.4	616.0	669.0	707.8	716.9
60°	534.4	561.6	618.6	654.8	666.4
62.5°	480.1	508.6	568.1	604.3	614.7
65°	423.2	455.5	513.7	556.4	566.8
67.5°	374.0	405.0	467.2	508.6	518.9
70°	317.0	352.0	418.0	460.7	471.0
72.5°	267.9	304.1	370.1	411.5	427.0
75°	214.8	256.2	322.2	366.2	376.6
77.5°	163.1	210.9	278.2	311.9	311.9
80°	116.5	166.9	229.0	244.6	247.2
82.5°	76.3	125.5	169.5	168.2	168.2
85°	44.0	81.5	100.9	98.3	98.3
87.5°	16.8	33.6	36.2	36.2	34.9
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)