

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: P310836

Luminaire Tested: **24FCZ2-45-UNV-L82765-CP187-W2A-U-4500K**

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: P310836
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: 24FCZ2-45-UNV-L82765-CP187-W2A-U-4500K
Description: 2'X4' TROFFER LED MODULE, RIBBED LENS, 0.187" POLYCARB SHEET
Light Source: (168) 4500K 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: 3939.0 lumens
Efficiency: N/A
Efficacy: 102.8 lumens/watt
Spacing Criteria (0/90/45): 1.22 / 1.29 / 1.38
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')
CIE Type: Direct

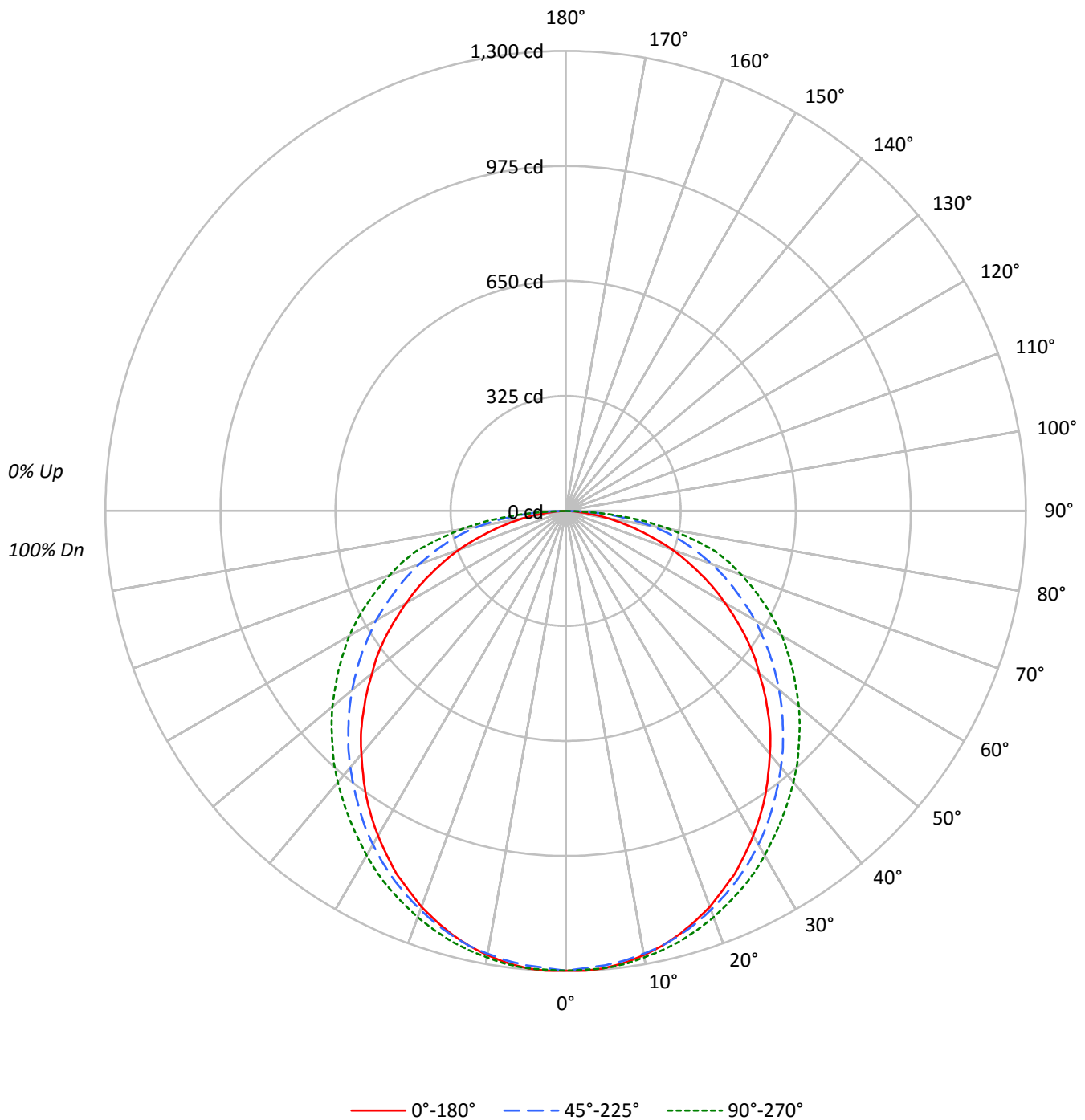
Input Watts (W): 38.3
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P310836

CATALOG NUMBER: 24FCZ2-45-UNV-L82765-CP187-W2A-U-4500K

Luminous Intensity Polar Plot





TEST NUMBER: P310836

CATALOG NUMBER: 24FCZ2-45-UNV-L82765-CP187-W2A-U-4500K

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°	1748	1748	1748
5°	1751	1740	1751
10°	1741	1736	1750
15°	1726	1729	1751
20°	1705	1718	1750
25°	1678	1705	1748
30°	1647	1691	1746
35°	1614	1674	1747
40°	1577	1662	1758
45°	1539	1651	1773
50°	1494	1647	1800
55°	1456	1649	1836
60°	1400	1664	1899
65°	1336	1681	1968
70°	1265	1733	2077
75°	1128	1807	2269
80°	962	1914	2319
85°	685	1896	2220



TEST NUMBER: P310836

CATALOG NUMBER: 24FCZ2-45-UNV-L82765-CP187-W2A-U-4500K

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	122.9	3.1
10°-20°	351.5	8.9
20°-30°	531.0	13.5
30°-40°	639.9	16.2
40°-50°	671.8	17.1
50°-60°	628.5	16.0
60°-70°	519.0	13.2
70°-80°	353.7	9.0
80°-90°	120.6	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°	1005.4	25.5
0°-40°	1645.3	41.8
0°-60°	2945.6	74.8
0°-90°	3939.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3939.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1299	1299	1299	1299	1299	
5°	1296	1295	1289	1296	1296	123
15°	1239	1240	1242	1255	1257	349
25°	1130	1136	1149	1171	1178	520
35°	983	993	1019	1053	1064	614
45°	809	826	868	915	932	624
55°	621	646	703	761	783	554
65°	420	455	528	595	618	416
75°	217	267	348	413	436	231
85°	44	88	123	138	144	56
90°	0	0	0	0	0	



TEST NUMBER: P310836

CATALOG NUMBER: 24FCZ2-45-UNV-L82765-CP187-W2A-U-4500K

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1299.0	1299.0	1299.0	1299.0	1299.0
2.5°	1300.4	1299.0	1292.5	1299.0	1297.7
5°	1296.4	1295.1	1288.6	1296.4	1296.4
7.5°	1287.3	1287.3	1280.8	1289.9	1291.2
10°	1274.2	1274.2	1270.3	1280.8	1280.8
12.5°	1258.5	1258.5	1258.5	1269.0	1270.3
15°	1238.9	1240.2	1241.5	1254.6	1257.2
17.5°	1215.4	1218.0	1221.9	1237.6	1240.2
20°	1190.6	1193.2	1199.7	1218.0	1221.9
22.5°	1159.2	1165.7	1174.9	1195.8	1199.7
25°	1130.5	1135.7	1148.8	1171.0	1177.5
27.5°	1095.2	1103.0	1120.0	1143.5	1152.7
30°	1059.9	1067.7	1088.6	1116.1	1123.9
32.5°	1022.0	1033.7	1056.0	1084.7	1093.9
35°	982.8	993.2	1019.4	1053.4	1063.8
37.5°	939.7	954.0	982.8	1019.4	1032.4
40°	897.8	913.5	946.2	985.4	1001.1
42.5°	856.0	871.7	908.3	952.7	968.4
45°	809.0	826.0	867.8	914.8	931.8
47.5°	761.9	782.8	828.6	878.2	896.5
50°	713.6	737.1	786.7	839.0	859.9
52.5°	670.4	692.7	744.9	801.1	820.7
55°	620.8	645.6	703.1	760.6	782.8
57.5°	569.8	597.2	658.7	721.4	743.6
60°	520.1	550.2	618.2	680.9	705.7
62.5°	471.8	501.8	572.4	637.8	662.6
65°	419.5	454.8	528.0	594.6	618.2
67.5°	369.8	407.7	484.9	550.2	573.7
70°	321.5	358.1	440.4	504.5	528.0
72.5°	269.2	311.0	393.4	460.0	484.9
75°	216.9	266.6	347.6	413.0	436.5
77.5°	168.6	219.6	300.6	354.2	365.9
80°	124.2	176.4	247.0	284.9	299.3
82.5°	79.7	132.0	188.2	215.6	227.4
85°	44.4	87.6	122.8	138.5	143.8
87.5°	18.3	37.9	49.7	56.2	56.2
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)