

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: P311513

Luminaire Tested: **24FCZ2-45-UNV-L82765-S-CP187-W2A-U-5500K**

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: P311513
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-L82765-S-CP187-W2A-U-5500K
Description: 2'X4' TROFFER LED MODULE, SMOOTH LENS, 0.187" POLYCARB SHEET
Light Source: (168) 5500K 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: 4237.0 lumens
Efficiency: N/A
Efficacy: 109.5 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

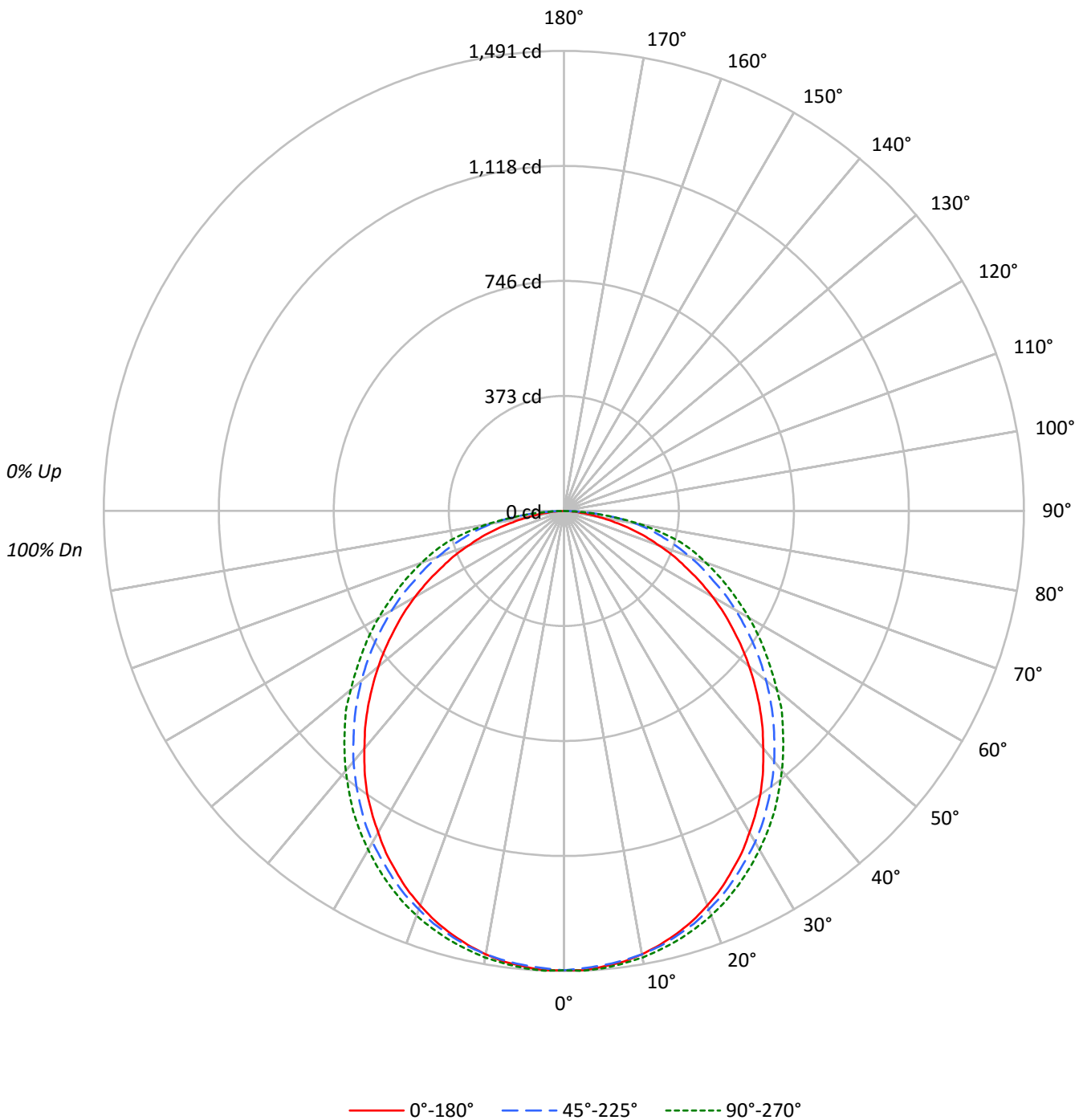
Input Watts (W): 38.7
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P311513

CATALOG NUMBER: 24FCZ2-45-UNV-L82765-S-CP187-W2A-U-5500K

Luminous Intensity Polar Plot





TEST NUMBER: P311513

CATALOG NUMBER: 24FCZ2-45-UNV-L82765-S-CP187-W2A-U-5500K

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°	2003	2003	2003
5°	2001	1996	2009
10°	1993	1993	2008
15°	1974	1983	2004
20°	1948	1967	1998
25°	1912	1948	1986
30°	1869	1926	1970
35°	1828	1895	1954
40°	1766	1863	1931
45°	1708	1826	1910
50°	1642	1792	1887
55°	1569	1758	1869
60°	1496	1731	1865
65°	1401	1701	1877
70°	1297	1710	1927
75°	1161	1742	2036
80°	938	1846	1992
85°	707	1621	1579



TEST NUMBER: P311513

CATALOG NUMBER: 24FCZ2-45-UNV-L82765-S-CP187-W2A-U-5500K

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	140.9	3.3
10°-20°	402.6	9.5
20°-30°	605.3	14.3
30°-40°	721.0	17.0
40°-50°	737.9	17.4
50°-60°	664.3	15.7
60°-70°	521.7	12.3
70°-80°	338.6	8.0
80°-90°	104.7	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°	1148.8	27.1
0°-40°	1869.8	44.1
0°-60°	3272.0	77.2
0°-90°	4237.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4237.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1488	1488	1488	1488	1488	
5°	1482	1484	1478	1486	1487	141
15°	1417	1421	1424	1436	1439	400
25°	1288	1299	1312	1334	1338	593
35°	1113	1126	1153	1182	1190	694
45°	898	919	960	996	1004	692
55°	669	698	750	789	797	600
65°	440	474	534	579	590	438
75°	223	266	335	381	392	236
85°	46	85	105	102	102	55
90°	0	0	0	0	0	



TEST NUMBER: P311513

CATALOG NUMBER: 24FCZ2-45-UNV-L82765-S-CP187-W2A-U-5500K

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1488.5	1488.5	1488.5	1488.5	1488.5
2.5°	1489.8	1489.8	1483.1	1489.8	1491.2
5°	1481.8	1484.4	1477.7	1485.8	1487.1
7.5°	1473.7	1473.7	1469.6	1477.7	1479.1
10°	1458.9	1460.2	1458.9	1468.3	1469.6
12.5°	1440.0	1442.7	1444.1	1453.5	1454.8
15°	1417.2	1421.2	1423.9	1436.0	1438.7
17.5°	1391.6	1395.6	1402.4	1415.8	1418.5
20°	1360.6	1366.0	1374.1	1391.6	1395.6
22.5°	1327.0	1332.4	1345.8	1362.0	1368.7
25°	1288.0	1298.7	1312.2	1333.7	1337.8
27.5°	1248.9	1258.3	1275.8	1298.7	1304.1
30°	1203.2	1218.0	1239.5	1262.4	1267.8
32.5°	1158.8	1173.6	1199.1	1223.4	1230.1
35°	1113.0	1126.5	1153.4	1181.6	1189.7
37.5°	1060.5	1078.0	1107.6	1135.9	1144.0
40°	1005.3	1026.9	1060.5	1090.1	1099.5
42.5°	952.8	975.7	1009.4	1041.7	1052.4
45°	897.7	919.2	959.6	995.9	1004.0
47.5°	841.1	865.4	908.4	944.8	958.2
50°	784.6	810.2	855.9	893.6	901.7
52.5°	728.1	755.0	803.5	843.8	847.9
55°	668.9	698.5	749.6	788.7	796.7
57.5°	615.0	640.6	695.8	736.2	745.6
60°	555.8	584.1	643.3	681.0	693.1
62.5°	499.3	528.9	590.8	628.5	639.3
65°	440.1	473.7	534.3	578.7	589.5
67.5°	388.9	421.2	485.8	528.9	539.7
70°	329.7	366.1	434.7	479.1	489.9
72.5°	278.6	316.3	384.9	428.0	444.1
75°	223.4	266.5	335.1	380.9	391.6
77.5°	169.6	219.4	289.4	324.3	324.3
80°	121.1	173.6	238.2	254.4	257.1
82.5°	79.4	130.5	176.3	175.0	175.0
85°	45.8	84.8	105.0	102.3	102.3
87.5°	17.5	35.0	37.7	37.7	36.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)