

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: P311463

Luminaire Tested: **24FCZ2-45HE-UNV-L82765-S-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: P311463
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: 24FCZ2-45HE-UNV-L82765-S-CP187-W2A-U-3000K
Description: 2'X4' TROFFER LED MODULE, SMOOTH 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: 3806.0 lumens
Efficiency: N/A
Efficacy: 113.3 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

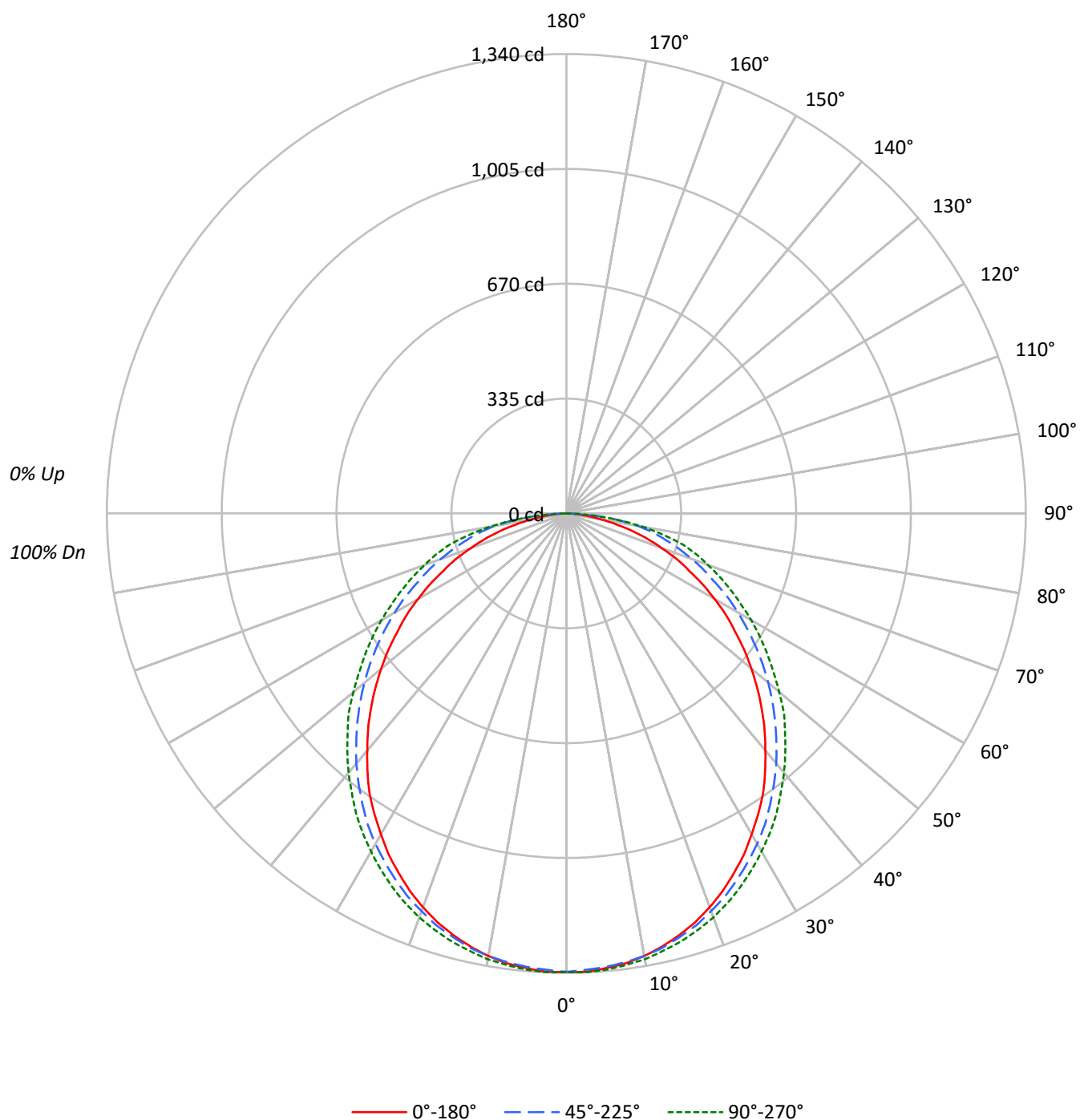
Input Watts (W): 33.6
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	99	95	106	101	97	93	97	93	90		93	90	88		83
2	98	90	83	77	96	88	81	76	84	79	74		81	76	72		69
3	89	79	70	64	87	77	69	63	74	67	62		71	66	61		58
4	82	70	61	54	80	68	60	54	66	59	53		63	57	52		49
5	75	62	53	46	73	61	53	46	59	51	46		57	50	45		42
6	70	56	47	40	68	55	47	40	53	46	40		52	45	40		37
7	64	51	42	36	63	50	42	36	48	41	35		47	40	35		33
8	60	46	38	32	58	46	37	32	44	37	32		43	36	31		29
9	56	43	34	29	55	42	34	29	41	34	28		40	33	28		26
10	53	39	31	26	51	39	31	26	38	31	26		37	30	26		24

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1799	1799	1799
5°	1798	1793	1804
10°	1790	1790	1804
15°	1773	1782	1800
20°	1750	1767	1795
25°	1718	1750	1784
30°	1679	1730	1769
35°	1642	1702	1755
40°	1586	1673	1735
45°	1534	1640	1716
50°	1475	1609	1696
55°	1409	1580	1679
60°	1344	1555	1675
65°	1259	1528	1686
70°	1165	1536	1731
75°	1043	1565	1829
80°	843	1658	1789
85°	634	1456	1419



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	126.6	3.3
10°-20°	361.7	9.5
20°-30°	543.7	14.3
30°-40°	647.6	17.0
40°-50°	662.8	17.4
50°-60°	596.7	15.7
60°-70°	468.6	12.3
70°-80°	304.2	8.0
80°-90°	94.1	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°	1032.0	27.1
0°-40°	1679.6	44.1
0°-60°	2939.1	77.2
0°-90°	3806.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3806.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1337	1337	1337	1337	1337	
5°	1331	1333	1327	1335	1336	126
15°	1273	1277	1279	1290	1292	359
25°	1157	1167	1179	1198	1202	533
35°	1000	1012	1036	1061	1069	624
45°	806	826	862	895	902	622
55°	601	627	673	708	716	539
65°	395	426	480	520	530	394
75°	201	239	301	342	352	212
85°	41	76	94	92	92	50
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1337.1	1337.1	1337.1	1337.1	1337.1
2.5°	1338.3	1338.3	1332.2	1338.3	1339.5
5°	1331.0	1333.4	1327.4	1334.7	1335.9
7.5°	1323.8	1323.8	1320.1	1327.4	1328.6
10°	1310.5	1311.7	1310.5	1318.9	1320.1
12.5°	1293.6	1296.0	1297.2	1305.6	1306.8
15°	1273.0	1276.6	1279.0	1289.9	1292.3
17.5°	1250.0	1253.7	1259.7	1271.8	1274.2
20°	1222.2	1227.1	1234.3	1250.0	1253.7
22.5°	1192.0	1196.8	1208.9	1223.4	1229.5
25°	1156.9	1166.6	1178.7	1198.0	1201.7
27.5°	1121.9	1130.3	1146.1	1166.6	1171.4
30°	1080.8	1094.1	1113.4	1134.0	1138.8
32.5°	1040.9	1054.2	1077.2	1098.9	1105.0
35°	999.8	1011.9	1036.0	1061.4	1068.7
37.5°	952.6	968.4	994.9	1020.3	1027.6
40°	903.1	922.4	952.6	979.2	987.7
42.5°	855.9	876.5	906.7	935.7	945.4
45°	806.4	825.7	862.0	894.6	901.9
47.5°	755.6	777.3	816.0	848.7	860.8
50°	704.8	727.8	768.9	802.7	810.0
52.5°	654.0	678.2	721.7	758.0	761.6
55°	600.8	627.4	673.4	708.4	715.7
57.5°	552.5	575.4	625.0	661.3	669.7
60°	499.3	524.7	577.9	611.7	622.6
62.5°	448.5	475.1	530.7	564.6	574.2
65°	395.3	425.5	479.9	519.8	529.5
67.5°	349.4	378.4	436.4	475.1	484.8
70°	296.2	328.8	390.5	430.4	440.0
72.5°	250.2	284.1	345.8	384.4	398.9
75°	200.7	239.4	301.0	342.1	351.8
77.5°	152.3	197.1	259.9	291.4	291.4
80°	108.8	156.0	214.0	228.5	230.9
82.5°	71.3	117.3	158.4	157.2	157.2
85°	41.1	76.2	94.3	91.9	91.9
87.5°	15.7	31.4	33.8	33.8	32.6
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)