

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: P314331

Luminaire Tested: **24FCZ2-45HE-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: P314331
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-L83050-S-CP187-W2A-U-3500K
Description: 2'X4' TROFFER LED MODULE, SMOOTH LENS, 0.187" POLYCARB SHEET
Light Source: (336) 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: 4032.0 lumens
Efficiency: N/A
Efficacy: 119.3 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

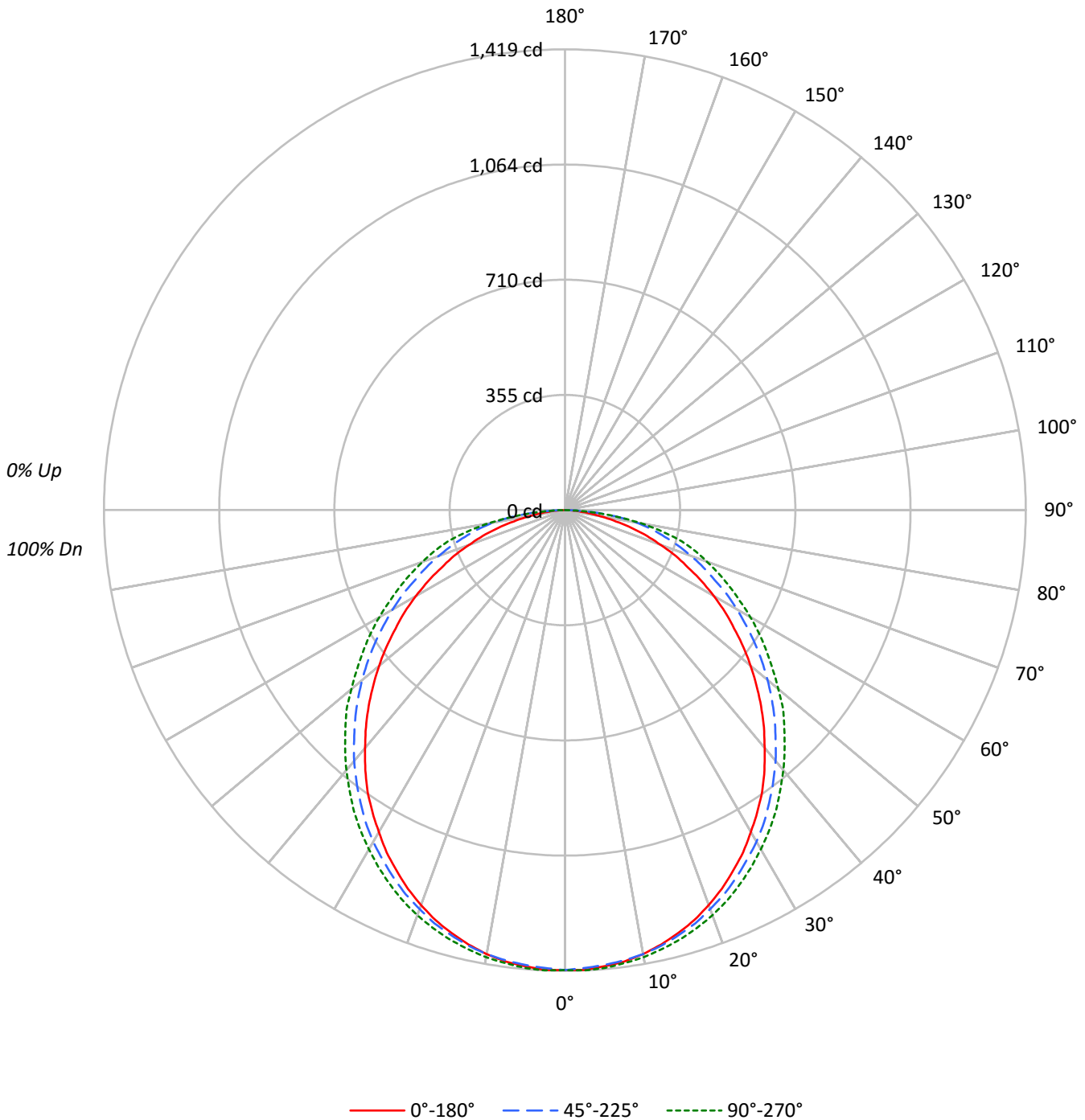
Input Watts (W): 33.8
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	1906	1906	1906
5°	1905	1899	1911
10°	1897	1897	1911
15°	1879	1887	1907
20°	1854	1872	1902
25°	1820	1854	1890
30°	1779	1833	1874
35°	1740	1803	1860
40°	1680	1773	1838
45°	1625	1737	1818
50°	1563	1705	1796
55°	1493	1673	1779
60°	1423	1647	1775
65°	1333	1619	1786
70°	1234	1627	1834
75°	1105	1658	1938
80°	893	1757	1895
85°	672	1542	1502



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	134.1	3.3
10°-20°	383.2	9.5
20°-30°	576.0	14.3
30°-40°	686.1	17.0
40°-50°	702.2	17.4
50°-60°	632.2	15.7
60°-70°	496.4	12.3
70°-80°	322.2	8.0
80°-90°	99.7	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°	1093.2	27.1
0°-40°	1779.3	44.1
0°-60°	3113.7	77.2
0°-90°	4032.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4032.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1416	1416	1416	1416	1416	
5°	1410	1413	1406	1414	1415	134
15°	1349	1352	1355	1366	1369	380
25°	1226	1236	1249	1269	1273	565
35°	1059	1072	1098	1124	1132	661
45°	854	875	913	948	955	659
55°	636	665	713	750	758	571
65°	419	451	508	551	561	417
75°	213	254	319	362	373	225
85°	44	81	100	97	97	53
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1416.5	1416.5	1416.5	1416.5	1416.5
2.5°	1417.7	1417.7	1411.3	1417.7	1419.0
5°	1410.1	1412.6	1406.2	1413.9	1415.2
7.5°	1402.4	1402.4	1398.5	1406.2	1407.5
10°	1388.3	1389.6	1388.3	1397.3	1398.5
12.5°	1370.4	1372.9	1374.2	1383.2	1384.5
15°	1348.6	1352.4	1355.0	1366.5	1369.1
17.5°	1324.3	1328.1	1334.5	1347.3	1349.9
20°	1294.8	1299.9	1307.6	1324.3	1328.1
22.5°	1262.8	1267.9	1280.7	1296.1	1302.5
25°	1225.6	1235.9	1248.7	1269.2	1273.0
27.5°	1188.5	1197.5	1214.1	1235.9	1241.0
30°	1145.0	1159.0	1179.5	1201.3	1206.4
32.5°	1102.7	1116.8	1141.1	1164.2	1170.6
35°	1059.1	1072.0	1097.6	1124.5	1132.1
37.5°	1009.2	1025.9	1054.0	1080.9	1088.6
40°	956.7	977.2	1009.2	1037.4	1046.3
42.5°	906.7	928.5	960.5	991.3	1001.5
45°	854.2	874.7	913.1	947.7	955.4
47.5°	800.4	823.5	864.5	899.1	911.9
50°	746.7	771.0	814.5	850.4	858.1
52.5°	692.9	718.5	764.6	803.0	806.8
55°	636.5	664.7	713.4	750.5	758.2
57.5°	585.3	609.6	662.1	700.5	709.5
60°	528.9	555.8	612.2	648.0	659.6
62.5°	475.1	503.3	562.2	598.1	608.3
65°	418.8	450.8	508.4	550.7	561.0
67.5°	370.1	400.9	462.3	503.3	513.6
70°	313.8	348.4	413.7	455.9	466.2
72.5°	265.1	301.0	366.3	407.3	422.6
75°	212.6	253.6	318.9	362.4	372.7
77.5°	161.4	208.8	275.4	308.7	308.7
80°	115.3	165.2	226.7	242.1	244.6
82.5°	75.6	124.2	167.8	166.5	166.5
85°	43.5	80.7	99.9	97.3	97.3
87.5°	16.6	33.3	35.9	35.9	34.6
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)