

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: P314338

Luminaire Tested: **24FCZ2-45HE-UNV-L83050-S-CP250-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: P314338
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-CP250-W2A-U-4500K
Description: 2'X4' TROFFER LED MODULE, SMOOTH LENS, 0.250" POLYCARB SHEET
Light Source: (336) 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: 4239.0 lumens
Efficiency: N/A
Efficacy: 119.4 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

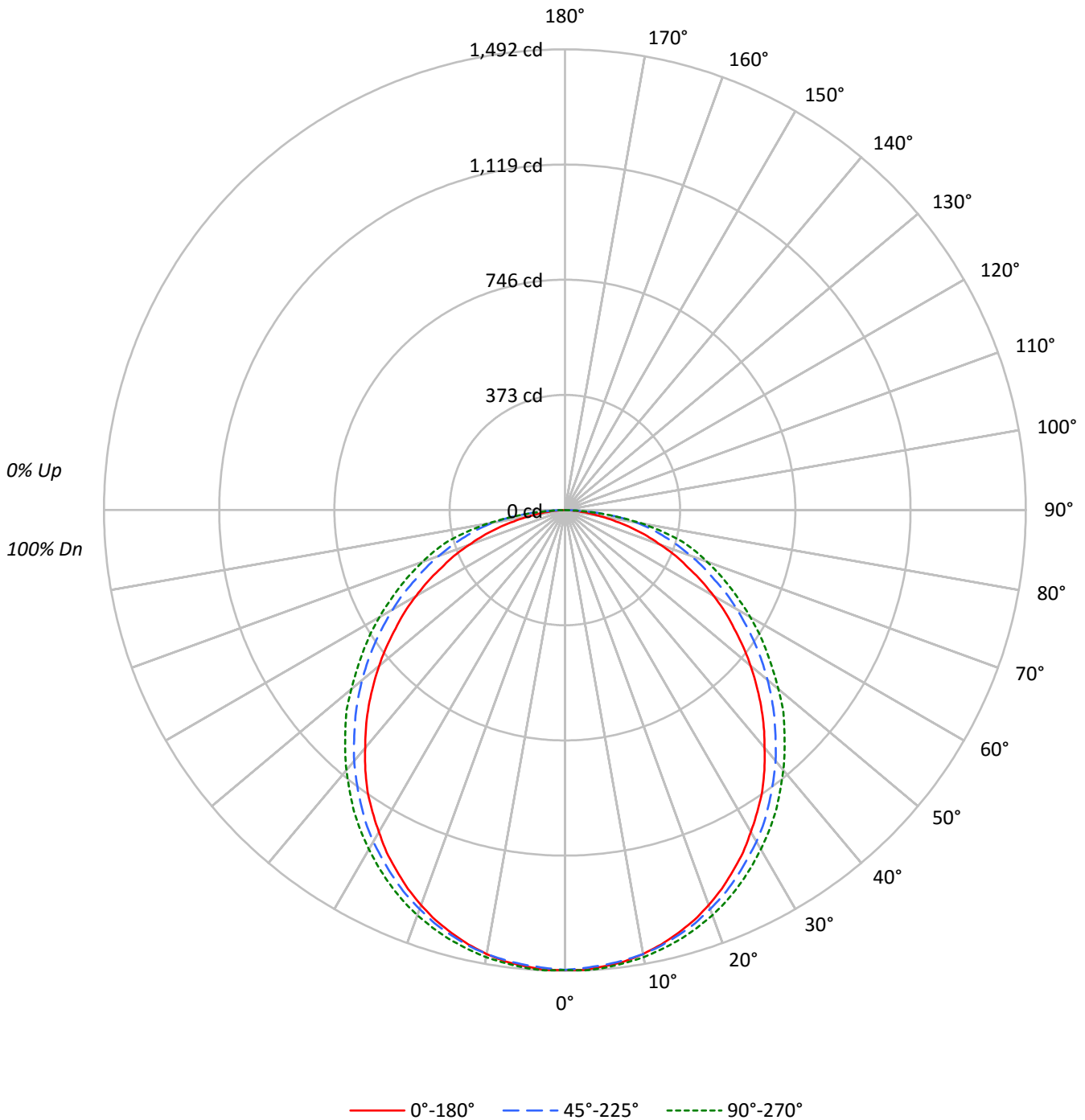
Input Watts (W): 35.5
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	2004	2004	2004
5°	2002	1997	2009
10°	1994	1994	2009
15°	1975	1984	2005
20°	1949	1968	1999
25°	1913	1949	1987
30°	1870	1927	1971
35°	1829	1895	1955
40°	1767	1864	1932
45°	1709	1827	1911
50°	1643	1793	1888
55°	1570	1759	1870
60°	1496	1732	1866
65°	1402	1702	1878
70°	1298	1711	1928
75°	1162	1743	2037
80°	939	1846	1993
85°	707	1621	1579



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	141.0	3.3
10°-20°	402.8	9.5
20°-30°	605.5	14.3
30°-40°	721.3	17.0
40°-50°	738.2	17.4
50°-60°	664.6	15.7
60°-70°	521.9	12.3
70°-80°	338.7	8.0
80°-90°	104.8	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°	1149.4	27.1
0°-40°	1870.7	44.1
0°-60°	3273.5	77.2
0°-90°	4239.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4239.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1489	1489	1489	1489	1489	
5°	1482	1485	1478	1486	1488	141
15°	1418	1422	1425	1437	1439	400
25°	1289	1299	1313	1334	1338	594
35°	1114	1127	1154	1182	1190	695
45°	898	920	960	996	1004	692
55°	669	699	750	789	797	600
65°	440	474	534	579	590	438
75°	224	267	335	381	392	237
85°	46	85	105	102	102	55
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1489.2	1489.2	1489.2	1489.2	1489.2
2.5°	1490.5	1490.5	1483.8	1490.5	1491.9
5°	1482.5	1485.1	1478.4	1486.5	1487.8
7.5°	1474.4	1474.4	1470.3	1478.4	1479.8
10°	1459.6	1460.9	1459.6	1469.0	1470.3
12.5°	1440.7	1443.4	1444.8	1454.2	1455.5
15°	1417.8	1421.9	1424.6	1436.7	1439.4
17.5°	1392.2	1396.3	1403.0	1416.5	1419.2
20°	1361.3	1366.7	1374.7	1392.2	1396.3
22.5°	1327.6	1333.0	1346.5	1362.6	1369.4
25°	1288.6	1299.3	1312.8	1334.3	1338.4
27.5°	1249.5	1258.9	1276.4	1299.3	1304.7
30°	1203.7	1218.5	1240.1	1263.0	1268.4
32.5°	1159.3	1174.1	1199.7	1223.9	1230.7
35°	1113.5	1127.0	1153.9	1182.2	1190.3
37.5°	1061.0	1078.5	1108.1	1136.4	1144.5
40°	1005.8	1027.4	1061.0	1090.6	1100.1
42.5°	953.3	976.2	1009.8	1042.2	1052.9
45°	898.1	919.6	960.0	996.4	1004.5
47.5°	841.5	865.8	908.9	945.2	958.7
50°	785.0	810.6	856.4	894.1	902.1
52.5°	728.4	755.4	803.8	844.2	848.3
55°	669.2	698.8	750.0	789.0	797.1
57.5°	615.3	640.9	696.1	736.5	745.9
60°	556.1	584.4	643.6	681.3	693.4
62.5°	499.5	529.2	591.1	628.8	639.6
65°	440.3	474.0	534.5	579.0	589.8
67.5°	389.1	421.4	486.1	529.2	539.9
70°	329.9	366.2	434.9	479.3	490.1
72.5°	278.7	316.4	385.1	428.2	444.3
75°	223.5	266.6	335.3	381.0	391.8
77.5°	169.7	219.5	289.5	324.5	324.5
80°	121.2	173.7	238.3	254.5	257.2
82.5°	79.4	130.6	176.4	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	36.4
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)