

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: P314334

Luminaire Tested: **24FCZ2-45HE-UNV-L83050-S-CP187-W2A-U-5000K**

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: P314334
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-5000K
Description: 2'X4' TROFFER LED MODULE, SMOOTH LENS, 0.187" POLYCARB SHEET
Light Source: (336) 5000K 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: 4273.0 lumens
Efficiency: N/A
Efficacy: 120.4 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

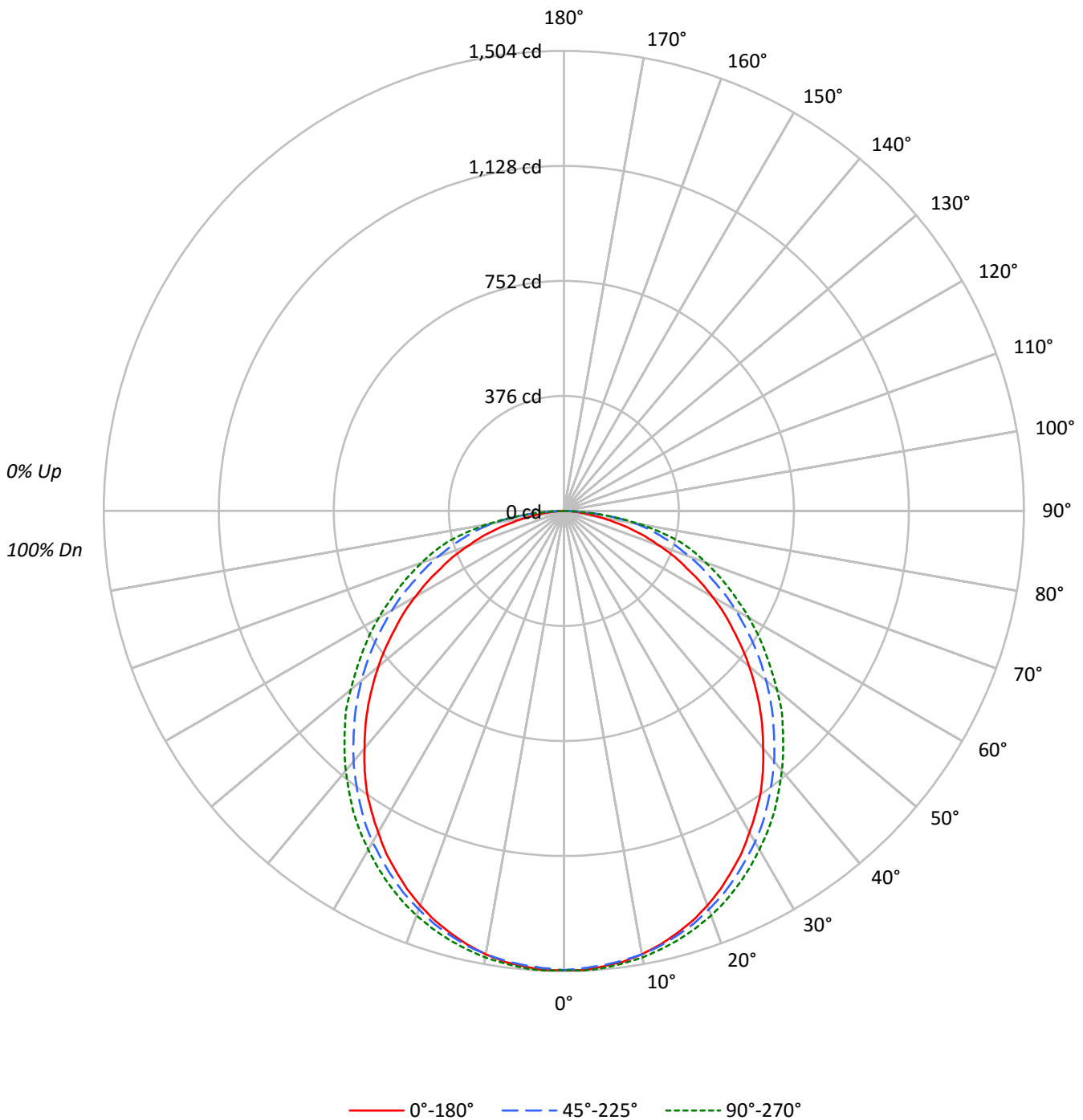
Input Watts (W): 35.5
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	2020	2020	2020
5°	2018	2013	2026
10°	2010	2010	2025
15°	1991	2000	2021
20°	1965	1984	2015
25°	1928	1965	2003
30°	1885	1942	1986
35°	1844	1911	1971
40°	1781	1878	1948
45°	1723	1841	1927
50°	1656	1807	1904
55°	1582	1773	1885
60°	1508	1746	1881
65°	1413	1715	1893
70°	1308	1725	1943
75°	1171	1757	2053
80°	947	1861	2008
85°	712	1635	1593



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	142.1	3.3
10°-20°	406.1	9.5
20°-30°	610.4	14.3
30°-40°	727.1	17.0
40°-50°	744.1	17.4
50°-60°	670.0	15.7
60°-70°	526.1	12.3
70°-80°	341.5	8.0
80°-90°	105.6	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°	1158.6	27.1
0°-40°	1885.7	44.1
0°-60°	3299.8	77.2
0°-90°	4273.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4273.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1501	1501	1501	1501	1501	
5°	1494	1497	1490	1498	1500	142
15°	1429	1433	1436	1448	1451	403
25°	1299	1310	1323	1345	1349	598
35°	1122	1136	1163	1192	1200	700
45°	905	927	968	1004	1012	698
55°	675	704	756	795	804	605
65°	444	478	539	584	594	442
75°	225	269	338	384	395	238
85°	46	86	106	103	103	56
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1501.1	1501.1	1501.1	1501.1	1501.1
2.5°	1502.5	1502.5	1495.7	1502.5	1503.8
5°	1494.3	1497.1	1490.3	1498.4	1499.8
7.5°	1486.2	1486.2	1482.1	1490.3	1491.6
10°	1471.3	1472.6	1471.3	1480.8	1482.1
12.5°	1452.3	1455.0	1456.3	1465.8	1467.2
15°	1429.2	1433.3	1436.0	1448.2	1450.9
17.5°	1403.4	1407.5	1414.3	1427.8	1430.6
20°	1372.2	1377.6	1385.8	1403.4	1407.5
22.5°	1338.3	1343.7	1357.3	1373.6	1380.3
25°	1298.9	1309.8	1323.3	1345.0	1349.1
27.5°	1259.5	1269.0	1286.7	1309.8	1315.2
30°	1213.4	1228.3	1250.0	1273.1	1278.5
32.5°	1168.6	1183.5	1209.3	1233.8	1240.5
35°	1122.5	1136.0	1163.2	1191.7	1199.8
37.5°	1069.5	1087.2	1117.0	1145.5	1153.7
40°	1013.9	1035.6	1069.5	1099.4	1108.9
42.5°	960.9	984.0	1017.9	1050.5	1061.4
45°	905.3	927.0	967.7	1004.4	1012.5
47.5°	848.3	872.7	916.2	952.8	966.4
50°	791.3	817.1	863.2	901.2	909.4
52.5°	734.3	761.4	810.3	851.0	855.1
55°	674.6	704.4	756.0	795.4	803.5
57.5°	620.3	646.1	701.7	742.4	751.9
60°	560.5	589.1	648.8	686.8	699.0
62.5°	503.5	533.4	595.8	633.8	644.7
65°	443.8	477.8	538.8	583.6	594.5
67.5°	392.2	424.8	490.0	533.4	544.3
70°	332.5	369.2	438.4	483.2	494.0
72.5°	281.0	319.0	388.2	431.6	447.9
75°	225.3	268.7	338.0	384.1	395.0
77.5°	171.0	221.2	291.8	327.1	327.1
80°	122.2	175.1	240.2	256.5	259.2
82.5°	80.1	131.7	177.8	176.4	176.4
85°	46.1	85.5	105.9	103.2	103.2
87.5°	17.6	35.3	38.0	38.0	36.6
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)