

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: P311389

Luminaire Tested: **24FCZ2-40HE-UNV-L82765-S-CP250-W2A-U-6500K**

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: P311389
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: 24FCZ2-40HE-UNV-L82765-S-CP250-W2A-U-6500K
Description: 2'X4' TROFFER LED MODULE, SMOOTH LENS, 0.250" POLYCARB SHEET
Light Source: (336) 6500K 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: 3795.0 lumens
Efficiency: N/A
Efficacy: 119.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.27 / 1.35
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')
CIE Type: Direct

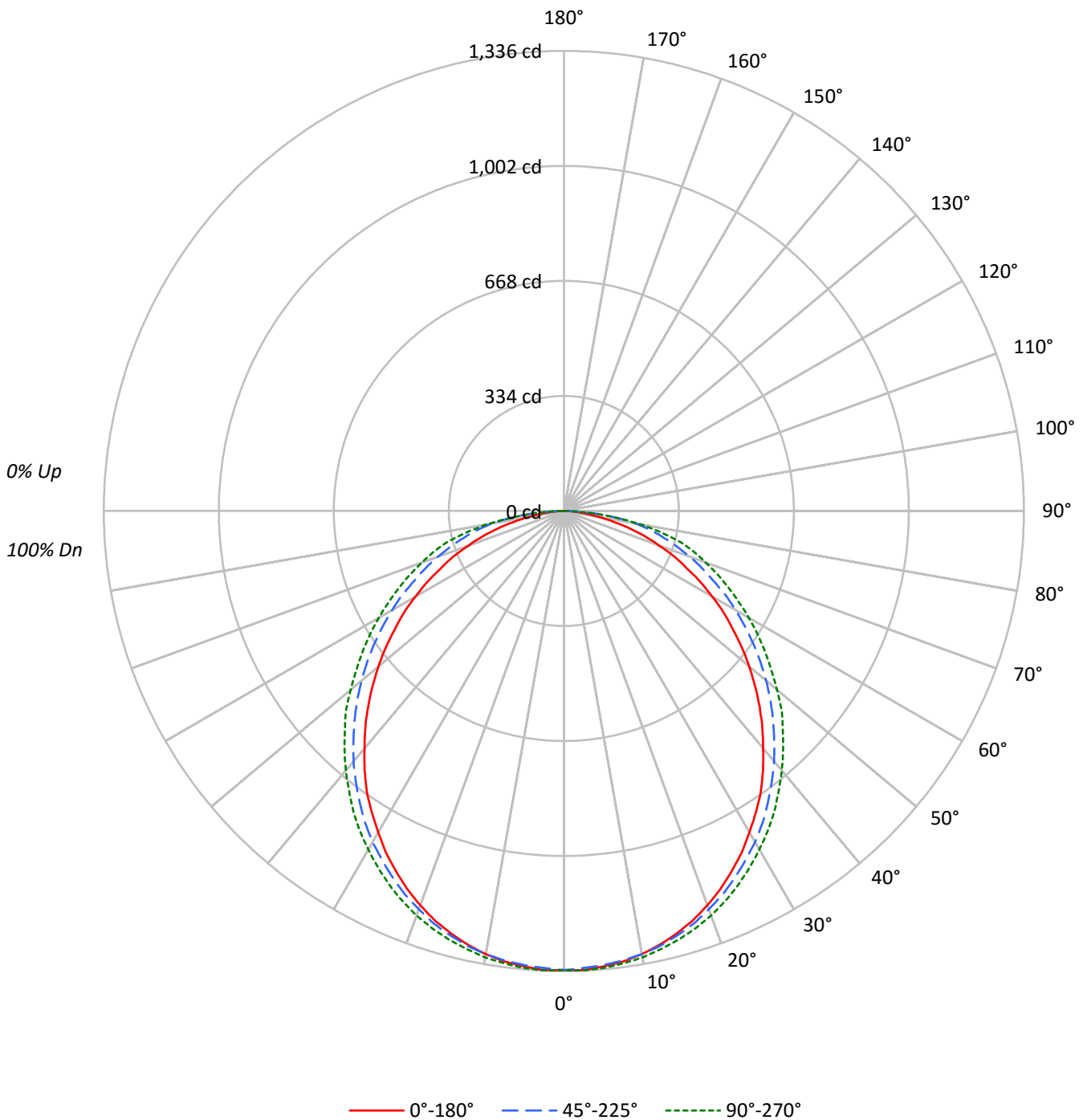
Input Watts (W): 31.8
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	1794	1794	1794
5°	1793	1788	1799
10°	1785	1785	1798
15°	1768	1776	1795
20°	1745	1762	1790
25°	1713	1745	1779
30°	1674	1725	1764
35°	1637	1697	1750
40°	1582	1668	1730
45°	1530	1635	1711
50°	1471	1605	1690
55°	1405	1575	1674
60°	1340	1551	1671
65°	1255	1524	1681
70°	1162	1532	1726
75°	1040	1561	1824
80°	841	1654	1784
85°	633	1451	1414



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	126.2	3.3
10°-20°	360.6	9.5
20°-30°	542.1	14.3
30°-40°	645.8	17.0
40°-50°	660.9	17.4
50°-60°	595.0	15.7
60°-70°	467.3	12.3
70°-80°	303.3	8.0
80°-90°	93.8	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°	1029.0	27.1
0°-40°	1674.7	44.1
0°-60°	2930.7	77.2
0°-90°	3795.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3795.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1333	1333	1333	1333	1333	
5°	1327	1330	1324	1331	1332	126
15°	1269	1273	1275	1286	1289	358
25°	1154	1163	1175	1195	1198	531
35°	997	1009	1033	1058	1066	622
45°	804	823	860	892	899	620
55°	599	626	671	706	714	537
65°	394	424	479	518	528	392
75°	200	239	300	341	351	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°	1333.2	1333.2	1333.2	1333.2	1333.2
2.5°	1334.4	1334.4	1328.4	1334.4	1335.6
5°	1327.2	1329.6	1323.6	1330.8	1332.0
7.5°	1319.9	1319.9	1316.3	1323.6	1324.8
10°	1306.7	1307.9	1306.7	1315.1	1316.3
12.5°	1289.8	1292.2	1293.4	1301.9	1303.1
15°	1269.3	1272.9	1275.3	1286.2	1288.6
17.5°	1246.4	1250.0	1256.1	1268.1	1270.5
20°	1218.7	1223.5	1230.7	1246.4	1250.0
22.5°	1188.6	1193.4	1205.4	1219.9	1225.9
25°	1153.6	1163.2	1175.3	1194.6	1198.2
27.5°	1118.6	1127.1	1142.7	1163.2	1168.1
30°	1077.7	1090.9	1110.2	1130.7	1135.5
32.5°	1037.9	1051.1	1074.0	1095.7	1101.8
35°	996.9	1008.9	1033.1	1058.4	1065.6
37.5°	949.9	965.6	992.1	1017.4	1024.6
40°	900.5	919.7	949.9	976.4	984.8
42.5°	853.4	873.9	904.1	933.0	942.6
45°	804.0	823.3	859.5	892.0	899.3
47.5°	753.4	775.1	813.7	846.2	858.3
50°	702.8	725.7	766.7	800.4	807.6
52.5°	652.1	676.2	719.6	755.8	759.4
55°	599.1	625.6	671.4	706.4	713.6
57.5°	550.9	573.8	623.2	659.4	667.8
60°	497.8	523.2	576.2	609.9	620.8
62.5°	447.2	473.7	529.2	562.9	572.6
65°	394.2	424.3	478.6	518.3	528.0
67.5°	348.4	377.3	435.2	473.7	483.4
70°	295.3	327.9	389.4	429.1	438.8
72.5°	249.5	283.3	344.8	383.3	397.8
75°	200.1	238.7	300.2	341.1	350.8
77.5°	151.9	196.5	259.2	290.5	290.5
80°	108.5	155.5	213.4	227.8	230.2
82.5°	71.1	116.9	157.9	156.7	156.7
85°	41.0	75.9	94.0	91.6	91.6
87.5°	15.7	31.3	33.8	33.8	32.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)