

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: P313192

Luminaire Tested: **24FCZ2-45HE-UNV-L83050-HRP-CA08-W2A-U-4000K**

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: P313192
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1808-918-20)
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-HRP-CA08-W2A-U-4000K
Description: 2'X4' TROFFER LED MODULE, HIGH EFFICIENCY RND PERF. LENS, 0.08" ACRYLIC SHEET
Light Source: (336) 4000K 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: 3345.0 lumens
Efficiency: N/A
Efficacy: 96.7 lumens/watt
Spacing Criteria (0/90/45): 1.24 / 1.3 / 1.4
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')
CIE Type: Direct

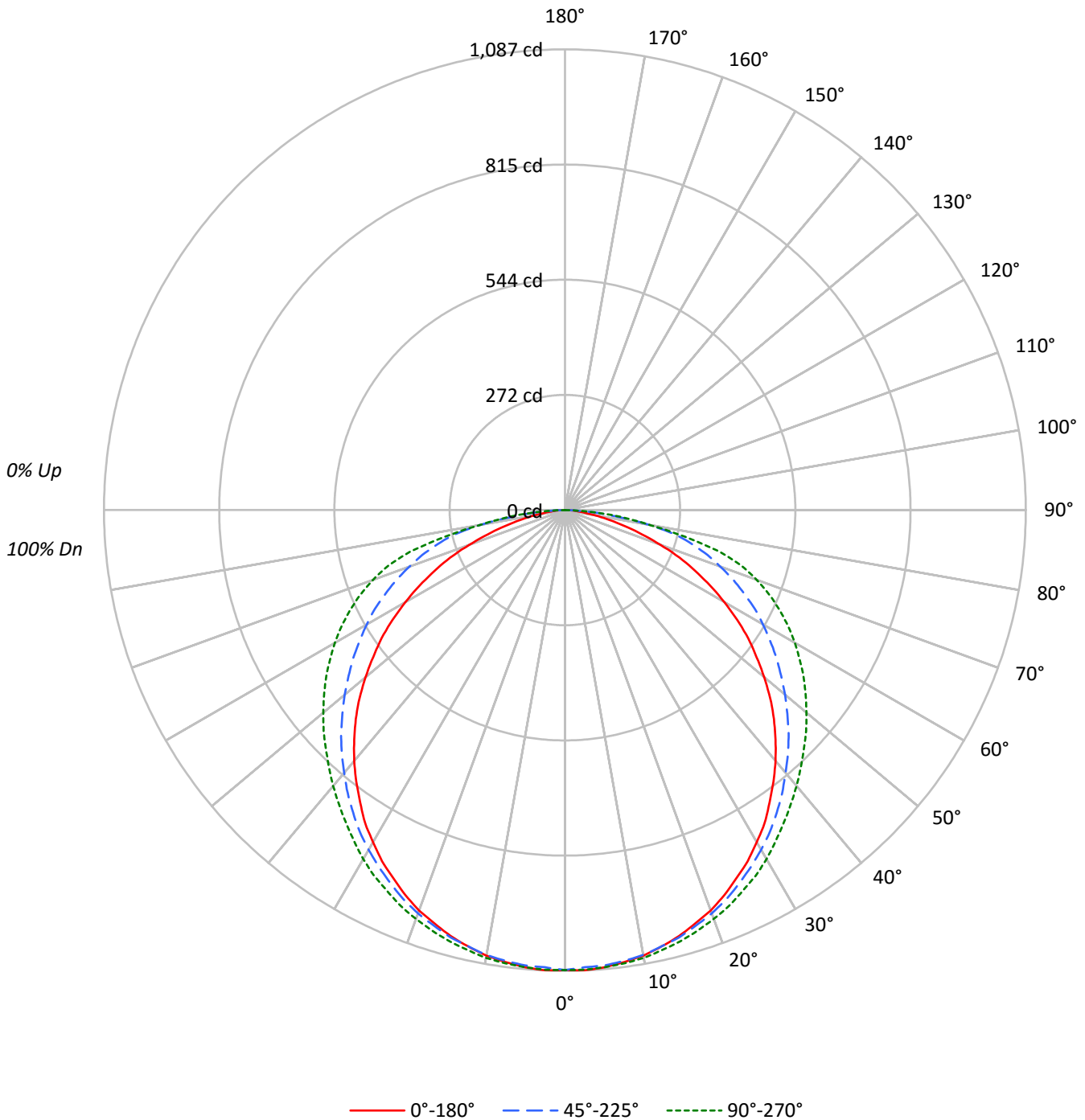
Input Watts (W): 34.6
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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					10					0
RW	70	50	30	10	70	50	30	10	50	30	10	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	100	100	100	100	100		
	1	108	103	98	94	105	101	96	93	96	93	90	92	90	87	89	86	84	82	82	82	82	82	82		
	2	98	89	82	76	95	87	80	75	83	78	73	80	75	71	77	73	70	67	67	67	67	67	67		
	3	89	78	69	62	86	76	68	62	73	66	61	70	64	59	68	63	58	56	56	56	56	56	56		
	4	81	68	59	52	79	67	59	52	65	57	51	62	56	50	60	54	50	48	48	48	48	48	48		
	5	74	61	52	45	72	60	51	45	58	50	44	56	49	44	54	48	43	41	41	41	41	41	41		
	6	69	55	46	39	67	54	45	39	52	44	38	50	43	38	49	42	38	36	36	36	36	36	36		
	7	63	50	41	34	62	49	40	34	47	39	34	46	39	34	44	38	33	31	31	31	31	31	31		
	8	59	45	36	30	57	44	36	30	43	36	30	42	35	30	41	34	30	28	28	28	28	28	28		
	9	55	41	33	27	54	41	33	27	40	32	27	39	32	27	38	31	27	25	25	25	25	25	25		
	10	52	38	30	25	50	38	30	25	37	30	25	36	29	24	35	29	24	23	23	23	23	23	23		

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1460	1460	1460
5°	1462	1456	1462
10°	1458	1456	1466
15°	1449	1453	1467
20°	1440	1450	1470
25°	1422	1443	1472
30°	1405	1438	1477
35°	1382	1431	1479
40°	1358	1422	1493
45°	1327	1420	1516
50°	1284	1419	1557
55°	1238	1429	1613
60°	1168	1451	1685
65°	1079	1485	1779
70°	942	1537	1895
75°	764	1616	1958
80°	564	1585	1585
85°	432	1167	1318



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	102.8	3.1
10°-20°	295.2	8.8
20°-30°	449.5	13.4
30°-40°	545.7	16.3
40°-50°	576.6	17.2
50°-60°	544.1	16.3
60°-70°	452.4	13.5
70°-80°	297.6	8.9
80°-90°	81.1	2.4
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°	847.5	25.3
0°-40°	1393.3	41.7
0°-60°	2513.9	75.2
0°-90°	3345.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3345.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1085	1085	1085	1085	1085	
5°	1082	1082	1078	1082	1082	103
15°	1040	1042	1043	1053	1053	293
25°	958	964	972	989	992	442
35°	842	851	871	893	900	527
45°	697	711	746	783	797	537
55°	528	550	609	667	688	470
65°	339	378	466	535	559	335
75°	147	214	311	368	377	158
85°	28	62	76	84	85	34
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1085.3	1085.3	1085.3	1085.3	1085.3
2.5°	1086.7	1085.3	1079.7	1085.3	1085.3
5°	1082.5	1082.5	1078.3	1082.5	1082.5
7.5°	1075.5	1075.5	1072.7	1078.3	1078.3
10°	1067.1	1067.1	1065.7	1072.7	1072.7
12.5°	1054.5	1055.9	1054.5	1062.9	1062.9
15°	1040.5	1041.9	1043.3	1053.1	1053.1
17.5°	1022.3	1025.1	1027.9	1039.1	1040.5
20°	1005.5	1006.9	1012.5	1025.1	1026.5
22.5°	983.1	987.3	994.3	1006.9	1011.1
25°	957.9	963.5	971.9	988.7	991.5
27.5°	934.0	938.2	949.5	967.7	973.3
30°	904.6	911.6	925.6	943.9	950.9
32.5°	876.6	883.6	900.4	920.0	925.6
35°	841.6	851.4	871.0	893.4	900.4
37.5°	808.0	817.8	841.6	866.8	875.2
40°	773.0	784.2	809.4	838.8	850.0
42.5°	735.2	750.6	778.6	810.8	823.4
45°	697.4	711.4	746.4	782.8	796.8
47.5°	656.8	673.6	711.4	754.8	771.6
50°	613.4	634.4	677.8	725.4	743.6
52.5°	570.0	593.8	642.8	696.0	715.6
55°	527.9	550.3	609.2	666.6	687.6
57.5°	481.7	509.7	574.2	635.8	656.8
60°	434.1	464.9	539.1	603.6	626.0
62.5°	386.5	421.5	505.5	570.0	593.8
65°	338.9	378.1	466.3	534.9	558.7
67.5°	292.7	336.1	429.9	498.5	522.3
70°	239.5	294.1	390.7	457.9	481.7
72.5°	190.5	253.5	352.9	415.9	436.9
75°	147.0	214.3	310.9	368.3	376.7
77.5°	107.8	175.0	267.5	287.1	288.5
80°	72.8	140.0	204.5	201.7	204.5
82.5°	47.6	105.0	128.8	144.2	145.6
85°	28.0	61.6	75.6	84.0	85.4
87.5°	14.0	21.0	26.6	28.0	30.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)