

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: P313318

Luminaire Tested: **24FCZ2-60HE-UNV-L83050-HRP-CA08-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: P313318
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: 24FCZ2-60HE-UNV-L83050-HRP-CA08-W2A-U-4500K
Description: 2'X4' TROFFER LED MODULE, HIGH EFFICIENCY RND PERF. LENS, 0.08" ACRYLIC 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: 4541.0 lumens
Efficiency: N/A
Efficacy: 91.0 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

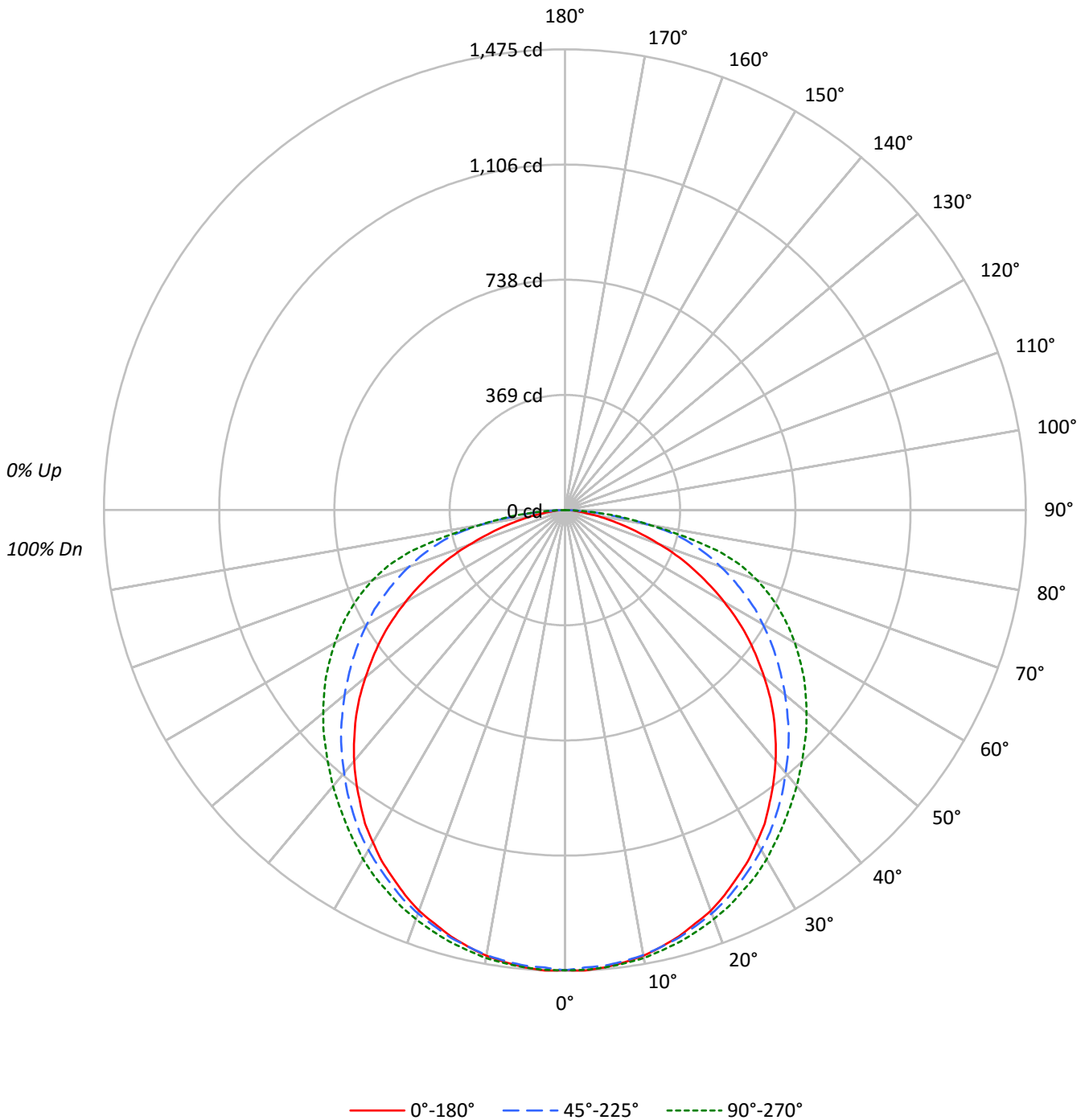
Input Watts (W): 49.9
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	1982	1982	1982
5°	1985	1977	1985
10°	1979	1977	1990
15°	1968	1973	1991
20°	1954	1968	1995
25°	1930	1959	1998
30°	1908	1952	2005
35°	1877	1942	2008
40°	1843	1930	2027
45°	1801	1928	2058
50°	1743	1926	2113
55°	1681	1940	2190
60°	1586	1970	2287
65°	1465	2016	2415
70°	1279	2087	2573
75°	1038	2194	2659
80°	766	2151	2151
85°	587	1585	1791



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	139.6	3.1
10°-20°	400.8	8.8
20°-30°	610.2	13.4
30°-40°	740.9	16.3
40°-50°	782.7	17.2
50°-60°	738.6	16.3
60°-70°	614.1	13.5
70°-80°	404.0	8.9
80°-90°	110.1	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°	1150.5	25.3
0°-40°	1891.4	41.7
0°-60°	3412.7	75.2
0°-90°	4541.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4541.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1473	1473	1473	1473	1473	
5°	1470	1470	1464	1470	1470	140
15°	1412	1414	1416	1430	1430	398
25°	1300	1308	1319	1342	1346	600
35°	1142	1156	1182	1213	1222	715
45°	947	966	1013	1063	1082	729
55°	717	747	827	905	933	638
65°	460	513	633	726	758	455
75°	200	291	422	500	511	215
85°	38	84	103	114	116	47
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1473.3	1473.3	1473.3	1473.3	1473.3
2.5°	1475.2	1473.3	1465.7	1473.3	1473.3
5°	1469.5	1469.5	1463.8	1469.5	1469.5
7.5°	1460.0	1460.0	1456.2	1463.8	1463.8
10°	1448.6	1448.6	1446.7	1456.2	1456.2
12.5°	1431.5	1433.4	1431.5	1442.9	1442.9
15°	1412.5	1414.4	1416.3	1429.6	1429.6
17.5°	1387.8	1391.6	1395.4	1410.6	1412.5
20°	1365.0	1366.9	1374.5	1391.6	1393.5
22.5°	1334.6	1340.3	1349.8	1366.9	1372.6
25°	1300.3	1307.9	1319.3	1342.2	1346.0
27.5°	1268.0	1273.7	1288.9	1313.6	1321.2
30°	1228.1	1237.6	1256.6	1281.3	1290.8
32.5°	1190.1	1199.6	1222.4	1249.0	1256.6
35°	1142.5	1155.9	1182.5	1212.9	1222.4
37.5°	1096.9	1110.2	1142.5	1176.8	1188.2
40°	1049.4	1064.6	1098.8	1138.7	1154.0
42.5°	998.1	1019.0	1057.0	1100.7	1117.8
45°	946.7	965.7	1013.3	1062.7	1081.7
47.5°	891.6	914.4	965.7	1024.7	1047.5
50°	832.7	861.2	920.1	984.8	1009.5
52.5°	773.7	806.1	872.6	944.8	971.4
55°	716.7	747.1	827.0	904.9	933.4
57.5°	654.0	692.0	779.4	863.1	891.6
60°	589.3	631.2	731.9	819.4	849.8
62.5°	524.7	572.2	686.3	773.7	806.1
65°	460.1	513.3	633.1	726.2	758.5
67.5°	397.3	456.3	583.6	676.8	709.1
70°	325.1	399.2	530.4	621.7	654.0
72.5°	258.5	344.1	479.1	564.6	593.1
75°	199.6	290.9	422.0	500.0	511.4
77.5°	146.4	237.6	363.1	389.7	391.6
80°	98.9	190.1	277.6	273.8	277.6
82.5°	64.6	142.6	174.9	195.8	197.7
85°	38.0	83.6	102.7	114.1	116.0
87.5°	19.0	28.5	36.1	38.0	41.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)