

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: P309663

Luminaire Tested: **24FCZ2-60HE-UNV-L82765-HRP-CP187-W2A-U-3000K**

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: P309663
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-L82765-HRP-CP187-W2A-U-3000K
Description: 2'X4' TROFFER LED MODULE, HIGH EFFICIENCY RND PERF. LENS, 0.187"
POLYCARB SHEET
Light Source: (336) 3000K 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: 3696.0 lumens
Efficiency: N/A
Efficacy: 78.1 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

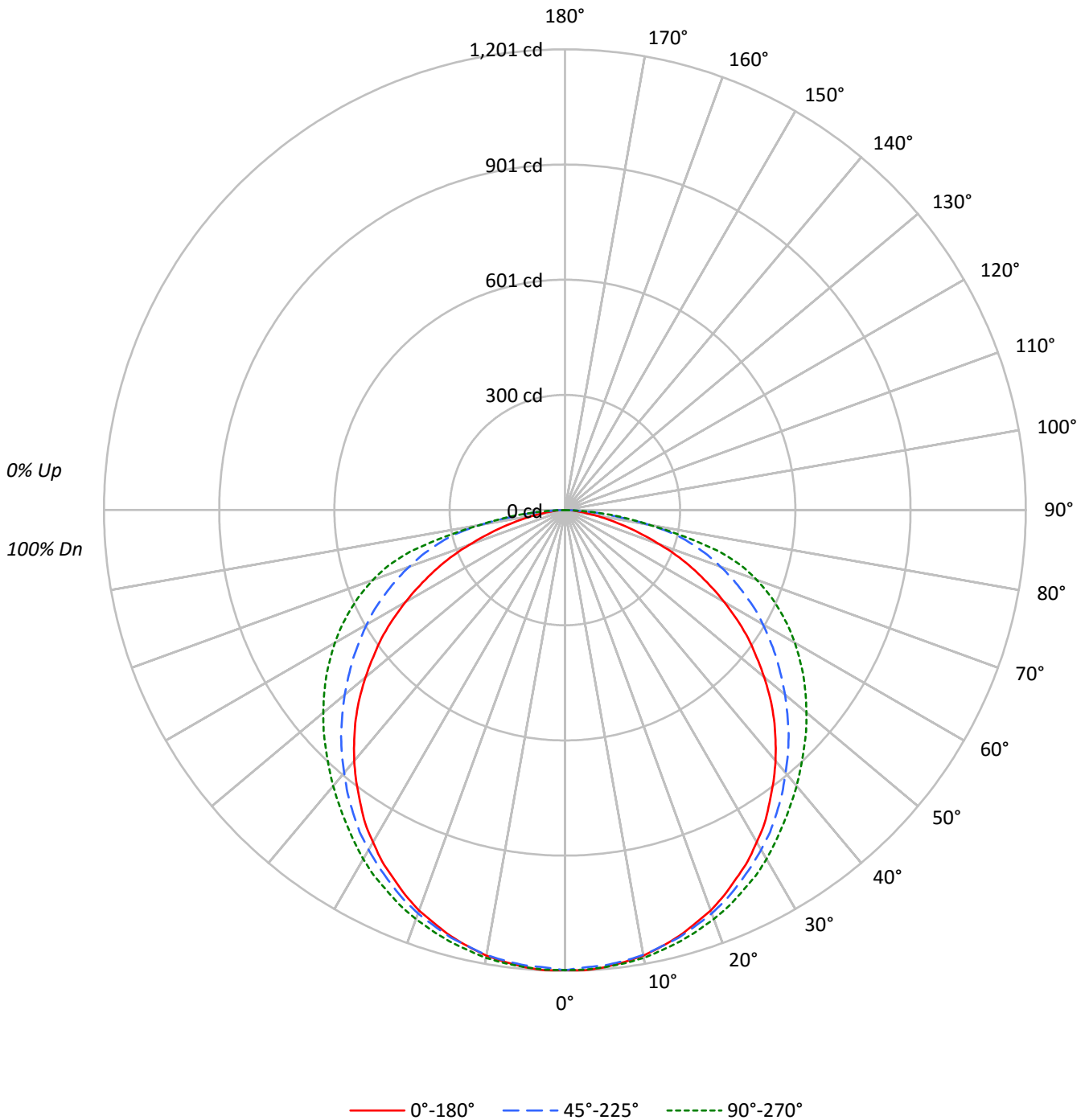
Input Watts (W): 47.3
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	0
RCR																		
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	108	103	98	94	105	101	96	93	96	93	90	92	90	87	89	86	84	82
2	98	89	82	76	95	87	80	75	83	78	73	80	75	71	77	73	70	67
3	89	78	69	62	86	76	68	62	73	66	61	70	64	59	68	63	58	56
4	81	68	59	52	79	67	59	52	65	57	51	62	56	50	60	54	50	48
5	74	61	52	45	72	60	51	45	58	50	44	56	49	44	54	48	43	41
6	69	55	46	39	67	54	45	39	52	44	38	50	43	38	49	42	38	36
7	63	50	41	34	62	49	40	34	47	39	34	46	39	34	44	38	33	31
8	59	45	36	30	57	44	36	30	43	36	30	42	35	30	41	34	30	28
9	55	41	33	27	54	41	33	27	40	32	27	39	32	27	38	31	27	25
10	52	38	30	25	50	38	30	25	37	30	25	36	29	24	35	29	24	23

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1614	1614	1614
5°	1615	1609	1615
10°	1611	1609	1619
15°	1601	1606	1621
20°	1591	1602	1624
25°	1571	1594	1626
30°	1553	1589	1632
35°	1527	1581	1634
40°	1500	1571	1650
45°	1466	1569	1675
50°	1419	1568	1720
55°	1368	1579	1782
60°	1291	1603	1861
65°	1192	1641	1966
70°	1041	1698	2094
75°	845	1786	2164
80°	624	1750	1750
85°	477	1291	1457



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	113.6	3.1
10°-20°	326.2	8.8
20°-30°	496.6	13.4
30°-40°	603.0	16.3
40°-50°	637.1	17.2
50°-60°	601.2	16.3
60°-70°	499.8	13.5
70°-80°	328.8	8.9
80°-90°	89.6	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°	936.4	25.3
0°-40°	1539.4	41.7
0°-60°	2777.7	75.2
0°-90°	3696.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3696.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1199	1199	1199	1199	1199	
5°	1196	1196	1191	1196	1196	114
15°	1150	1151	1153	1164	1164	324
25°	1058	1065	1074	1092	1096	488
35°	930	941	962	987	995	582
45°	771	786	825	865	880	593
55°	583	608	673	736	760	520
65°	374	418	515	591	617	370
75°	162	237	344	407	416	175
85°	31	68	84	93	94	38
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1199.2	1199.2	1199.2	1199.2	1199.2
2.5°	1200.7	1199.2	1193.0	1199.2	1199.2
5°	1196.1	1196.1	1191.4	1196.1	1196.1
7.5°	1188.3	1188.3	1185.2	1191.4	1191.4
10°	1179.1	1179.1	1177.5	1185.2	1185.2
12.5°	1165.1	1166.7	1165.1	1174.4	1174.4
15°	1149.7	1151.2	1152.8	1163.6	1163.6
17.5°	1129.5	1132.6	1135.7	1148.1	1149.7
20°	1111.0	1112.5	1118.7	1132.6	1134.2
22.5°	1086.2	1090.9	1098.6	1112.5	1117.2
25°	1058.4	1064.6	1073.8	1092.4	1095.5
27.5°	1032.1	1036.7	1049.1	1069.2	1075.4
30°	999.6	1007.3	1022.8	1042.9	1050.6
32.5°	968.6	976.4	994.9	1016.6	1022.8
35°	929.9	940.8	962.4	987.2	994.9
37.5°	892.8	903.6	929.9	957.8	967.1
40°	854.1	866.5	894.3	926.8	939.2
42.5°	812.3	829.4	860.3	895.9	909.8
45°	770.6	786.0	824.7	864.9	880.4
47.5°	725.7	744.3	786.0	834.0	852.6
50°	677.7	700.9	748.9	801.5	821.6
52.5°	629.8	656.1	710.2	769.0	790.7
55°	583.3	608.1	673.1	736.5	759.7
57.5°	532.3	563.2	634.4	702.5	725.7
60°	479.7	513.7	595.7	666.9	691.7
62.5°	427.1	465.7	558.6	629.8	656.1
65°	374.5	417.8	515.3	591.1	617.4
67.5°	323.4	371.4	475.0	550.8	577.1
70°	264.6	324.9	431.7	506.0	532.3
72.5°	210.4	280.1	389.9	459.6	482.8
75°	162.5	236.7	343.5	406.9	416.2
77.5°	119.1	193.4	295.5	317.2	318.7
80°	80.5	154.7	225.9	222.8	225.9
82.5°	52.6	116.0	142.4	159.4	160.9
85°	30.9	68.1	83.6	92.8	94.4
87.5°	15.5	23.2	29.4	30.9	34.0
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)