

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: P311020

Luminaire Tested: **24FCZ2-60HE-UNV-L82765-CP187-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: P311020
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1805-783-15)
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-CP187-W2A-U-6500K
Description: 2'X4' TROFFER LED MODULE, RIBBED LENS, 0.187" 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: 5394.0 lumens
Efficiency: N/A
Efficacy: 108.5 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.29 / 1.38
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')
CIE Type: Direct

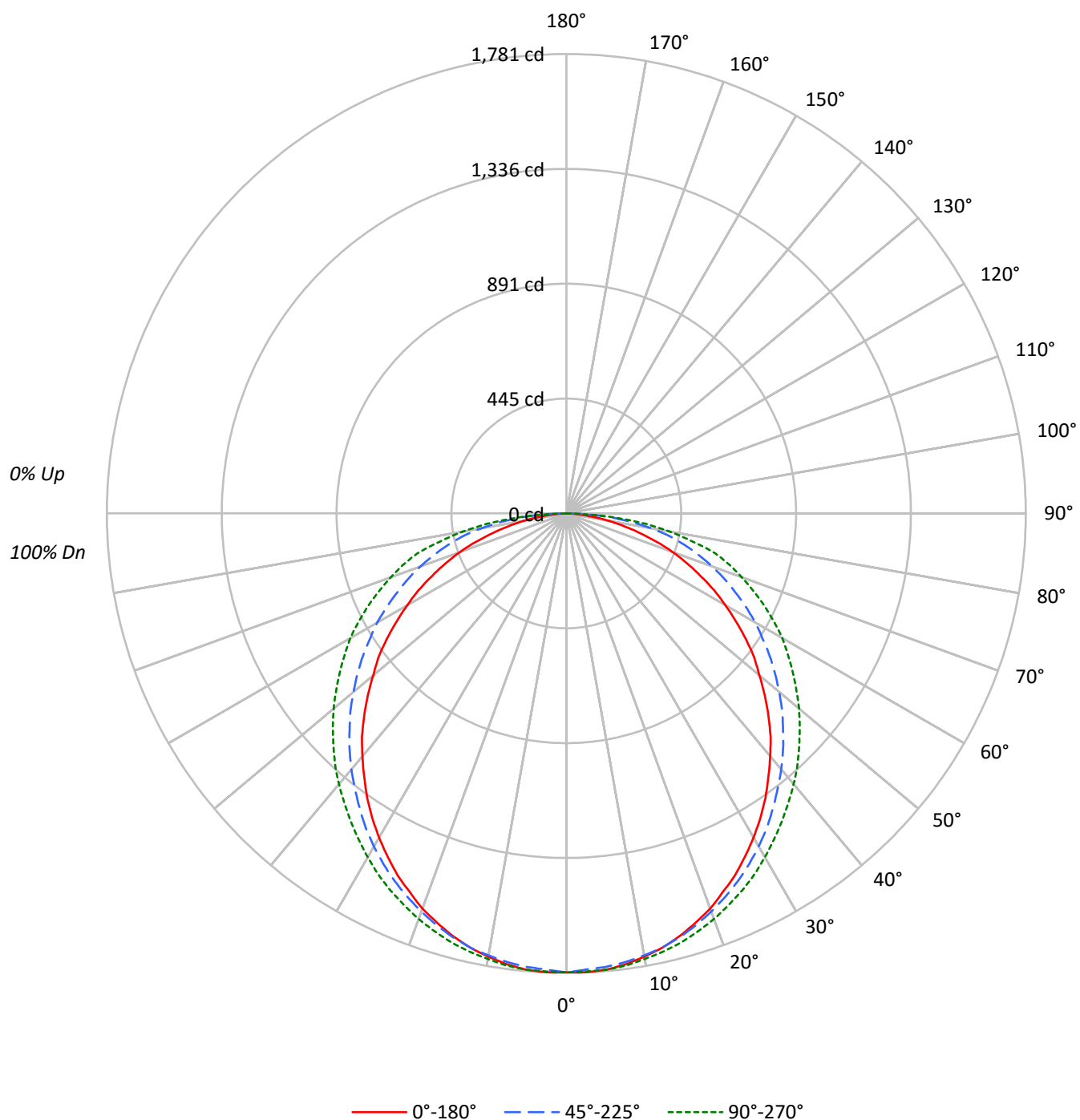
Input Watts (W): 49.7
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P311020

CATALOG NUMBER: 24FCZ2-60HE-UNV-L82765-CP187-W2A-U-6500K

Luminous Intensity Polar Plot





TEST NUMBER: P311020

CATALOG NUMBER: 24FCZ2-60HE-UNV-L82765-CP187-W2A-U-6500K

COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				20
RC	80				70				50				30				0
RW	70	50	30	10	70	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		100
1	108	103	98	94	105	100	96	92	96	92	89		92	89	87		82
2	98	89	81	75	95	87	80	74	83	78	73		80	75	71		67
3	89	77	69	62	86	76	68	61	73	66	60		70	64	59		56
4	81	68	59	52	79	67	58	52	64	57	51		62	56	50		47
5	74	61	52	45	72	60	51	44	58	50	44		56	49	43		41
6	69	55	46	39	67	54	45	39	52	44	38		50	43	38		36
7	64	50	41	34	62	49	40	34	47	39	34		46	39	34		31
8	59	45	37	31	57	45	36	30	43	36	30		42	35	30		28
9	55	41	33	27	54	41	33	27	40	32	27		39	32	27		25
10	52	38	30	25	50	38	30	25	37	30	25		36	29	25		23

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2393	2393	2393
5°	2398	2383	2398
10°	2384	2377	2396
15°	2363	2368	2398
20°	2334	2352	2396
25°	2298	2335	2394
30°	2255	2316	2391
35°	2211	2293	2393
40°	2160	2276	2408
45°	2108	2261	2428
50°	2045	2255	2465
55°	1994	2259	2515
60°	1917	2278	2601
65°	1829	2302	2695
70°	1732	2373	2844
75°	1544	2475	3107
80°	1317	2620	3175
85°	939	2597	3040



TEST NUMBER: P311020

CATALOG NUMBER: 24FCZ2-60HE-UNV-L82765-CP187-W2A-U-6500K

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	168.4	3.1
10°-20°	481.4	8.9
20°-30°	727.1	13.5
30°-40°	876.3	16.2
40°-50°	920.0	17.1
50°-60°	860.7	16.0
60°-70°	710.8	13.2
70°-80°	484.3	9.0
80°-90°	165.2	3.1
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°	1376.8	25.5
0°-40°	2253.1	41.8
0°-60°	4033.7	74.8
0°-90°	5394.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5394.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1779	1779	1779	1779	1779	
5°	1775	1774	1765	1775	1775	168
15°	1697	1698	1700	1718	1722	478
25°	1548	1555	1573	1604	1612	712
35°	1346	1360	1396	1442	1457	841
45°	1108	1131	1188	1253	1276	854
55°	850	884	963	1042	1072	759
65°	574	623	723	814	846	570
75°	297	365	476	566	598	317
85°	61	120	168	190	197	76
90°	0	0	0	0	0	



TEST NUMBER: P311020

CATALOG NUMBER: 24FCZ2-60HE-UNV-L82765-CP187-W2A-U-6500K

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1778.9	1778.9	1778.9	1778.9	1778.9
2.5°	1780.7	1778.9	1769.9	1778.9	1777.1
5°	1775.3	1773.5	1764.6	1775.3	1775.3
7.5°	1762.8	1762.8	1753.8	1766.4	1768.2
10°	1744.9	1744.9	1739.5	1753.8	1753.8
12.5°	1723.4	1723.4	1723.4	1737.7	1739.5
15°	1696.6	1698.4	1700.2	1718.0	1721.6
17.5°	1664.4	1667.9	1673.3	1694.8	1698.4
20°	1630.4	1633.9	1642.9	1667.9	1673.3
22.5°	1587.4	1596.4	1608.9	1637.5	1642.9
25°	1548.0	1555.2	1573.1	1603.5	1612.5
27.5°	1499.7	1510.4	1533.7	1565.9	1578.5
30°	1451.4	1462.1	1490.8	1528.3	1539.1
32.5°	1399.5	1415.6	1446.0	1485.4	1497.9
35°	1345.8	1360.1	1395.9	1442.4	1456.8
37.5°	1286.7	1306.4	1345.8	1395.9	1413.8
40°	1229.5	1251.0	1295.7	1349.4	1370.9
42.5°	1172.2	1193.7	1243.8	1304.6	1326.1
45°	1107.8	1131.0	1188.3	1252.7	1276.0
47.5°	1043.4	1072.0	1134.6	1202.6	1227.7
50°	977.1	1009.4	1077.4	1148.9	1177.6
52.5°	918.1	948.5	1020.1	1097.0	1123.9
55°	850.1	884.1	962.8	1041.6	1072.0
57.5°	780.3	817.9	902.0	987.9	1018.3
60°	712.3	753.4	846.5	932.4	966.4
62.5°	646.1	687.2	783.9	873.3	907.3
65°	574.5	622.8	723.0	814.3	846.5
67.5°	506.5	558.4	664.0	753.4	785.6
70°	440.2	490.4	603.1	690.8	723.0
72.5°	368.7	425.9	538.7	630.0	664.0
75°	297.1	365.1	476.0	565.5	597.7
77.5°	230.9	300.7	411.6	485.0	501.1
80°	170.0	241.6	338.2	390.1	409.8
82.5°	109.2	180.8	257.7	295.3	311.4
85°	60.8	119.9	168.2	189.7	196.9
87.5°	25.1	51.9	68.0	77.0	77.0
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)