

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: P834634

Luminaire Tested: **ORLG-24-4-INS-ASY2-LD4-2LO-27-120-EDD-90**

Issue Date: 5/16/2024

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

**Test Information**

Test Method: LM-79-08
Report Number: P834634
Test Lab: INNOVATION CENTER(G2)
Issue Date: 5/16/2024
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: ORLG-24-4-INS-ASY2-LD4-2LO-27-120-EDD-90
Description: 2FT x 4FT ORL LED LUMINAIRE WITH asymmetric/symmetric lens v2
Light Source: 2700K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

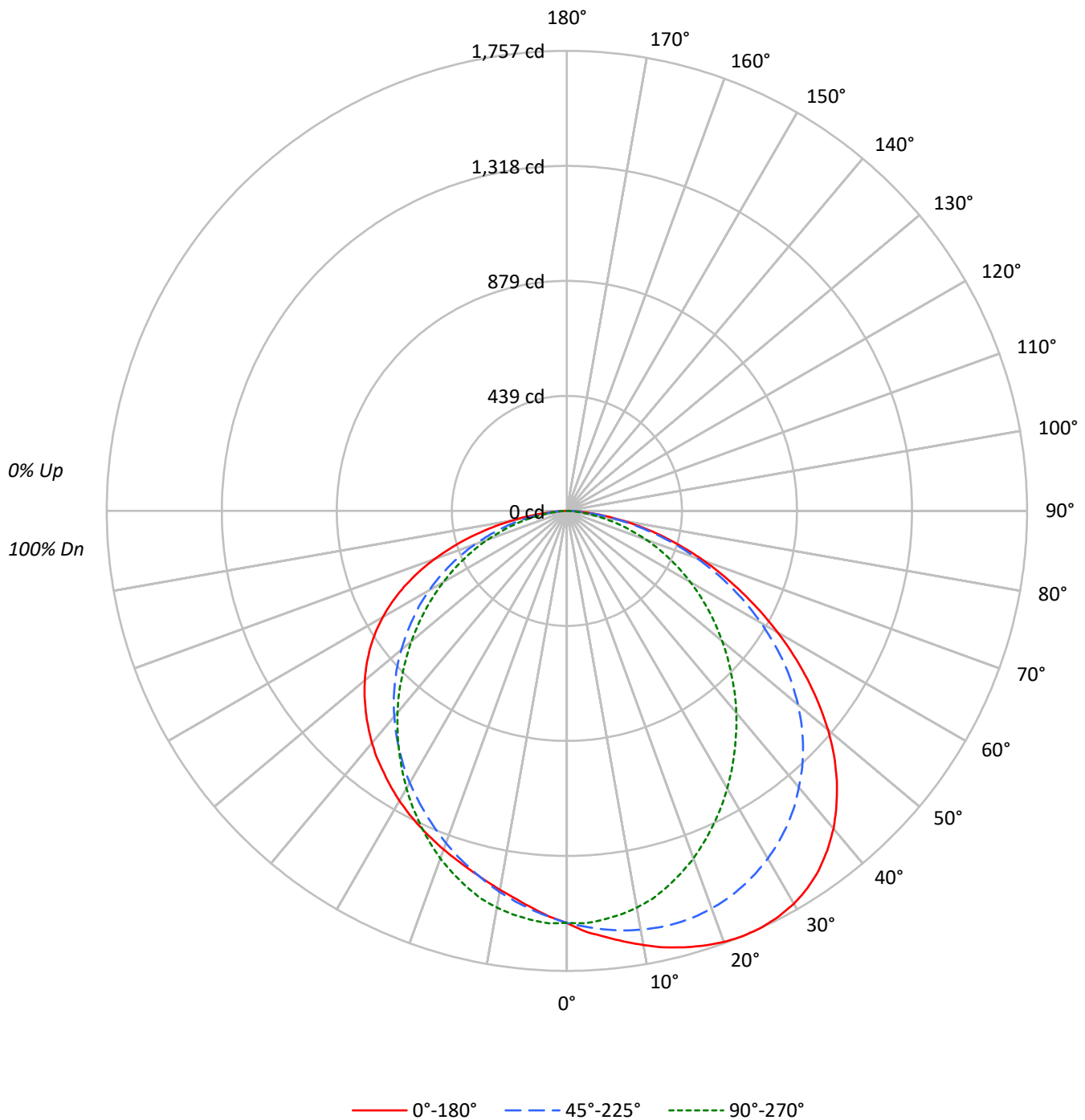
Lumens per Lamp: N/A
Luminaire Lumens: 4628.1 lumens
Efficiency: N/A
Efficacy: 98.9 lumens/watt
Spacing Criteria (0/90/45): 1.41 / 1.17 / 1.4
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')
CIE Type: Direct

Input Watts (W): 46.8
Input Voltage (V): 120
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: 28.75 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
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10
RCR																				
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100		
1	109	104	100	96	106	102	98	94	97	94	91	94	91	88	90	88	86	84		
2	99	90	84	78	96	89	82	77	85	80	75	82	77	73	79	75	72	70		
3	90	79	71	65	87	78	70	64	75	68	63	72	66	62	69	65	61	58		
4	82	70	61	55	80	69	61	54	66	59	53	64	58	53	62	56	52	50		
5	76	63	54	47	73	61	53	47	59	52	46	57	51	46	55	50	45	43		
6	70	56	47	41	68	55	47	41	54	46	40	52	45	40	50	44	40	37		
7	65	51	42	36	63	50	42	36	49	41	36	47	40	35	46	40	35	33		
8	60	46	38	32	59	46	38	32	44	37	32	43	36	31	42	36	31	29		
9	56	43	34	29	55	42	34	29	41	34	29	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°	90°	180°
0°	2117	2117	2117
5°	2204	2118	2055
10°	2300	2102	2008
15°	2404	2069	1979
20°	2509	2023	1971
25°	2607	1964	1974
30°	2692	1903	1986
35°	2754	1835	2003
40°	2782	1767	2033
45°	2774	1692	2066
50°	2725	1621	2108
55°	2632	1547	2152
60°	2503	1467	2185
65°	2351	1377	2182
70°	2188	1270	2117
75°	1986	1116	1952
80°	1705	917	1647
85°	1301	627	1132



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	149.2	3.2
10°-20°	430.9	9.3
20°-30°	660.2	14.3
30°-40°	805.7	17.4
40°-50°	842.5	18.2
50°-60°	762.6	16.5
60°-70°	577.5	12.5
70°-80°	321.8	7.0
80°-90°	77.6	1.7
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°	1240.3	26.8
0°-40°	2046.0	44.2
0°-60°	3651.1	78.9
0°-90°	4628.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4628.1	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1573	1573	1573	1573	1573	
5°	1632	1605	1568	1530	1522	157
15°	1726	1630	1485	1416	1421	489
25°	1756	1584	1323	1276	1330	810
35°	1676	1466	1117	1116	1220	1047
45°	1458	1275	889	928	1086	1122
55°	1122	1013	659	717	918	1001
65°	738	694	433	492	685	732
75°	382	361	215	256	376	405
85°	84	74	41	54	73	101
90°	0	0	0	0	0	

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CANDELA DISTRIBUTION (FULL):

	0°	10°	20°	22.5°	30°	40°	45°	50°	60°	67.5°	70°
0°	1573.4	1573.4	1573.4	1573.4	1573.4	1573.4	1573.4	1573.4	1573.4	1573.4	1573.4
2.5°	1608.1	1600.5	1594.3	1596.7	1598.1	1593.3	1589.2	1589.9	1585.7	1593.7	1575.1
5°	1631.8	1624.9	1617.7	1620.5	1617.7	1610.5	1604.7	1602.9	1591.9	1596.4	1577.5
7.5°	1658.3	1650.7	1640.1	1643.2	1637.3	1623.9	1616.4	1611.9	1595.0	1595.4	1574.4
10°	1683.8	1677.2	1662.8	1664.8	1654.2	1636.3	1624.3	1618.1	1594.3	1590.9	1569.2
12.5°	1707.5	1698.5	1683.1	1684.1	1668.6	1644.9	1629.4	1620.5	1589.5	1579.2	1557.9
15°	1725.7	1717.1	1698.5	1698.2	1678.3	1647.3	1629.8	1617.4	1578.2	1562.0	1539.7
17.5°	1741.2	1733.3	1710.2	1709.6	1685.5	1646.3	1625.3	1609.8	1561.7	1541.7	1517.0
20°	1752.2	1744.3	1718.5	1716.1	1687.2	1641.1	1616.0	1596.4	1540.0	1516.3	1488.8
22.5°	1757.4	1749.4	1720.2	1716.8	1683.1	1630.8	1602.6	1579.6	1515.2	1484.3	1455.7
25°	1756.3	1748.8	1715.7	1712.3	1675.2	1615.3	1583.7	1557.2	1483.9	1447.5	1419.3
27.5°	1747.7	1741.9	1707.1	1702.7	1660.7	1594.3	1560.6	1531.4	1449.2	1408.6	1378.0
30°	1732.9	1728.5	1691.7	1687.5	1642.8	1571.3	1533.8	1500.1	1411.7	1366.0	1335.0
32.5°	1709.2	1705.1	1667.9	1664.2	1618.8	1541.7	1502.5	1467.8	1370.8	1320.2	1289.3
35°	1676.5	1674.1	1638.0	1633.9	1587.8	1508.0	1466.4	1428.2	1328.2	1271.1	1241.5
37.5°	1633.5	1633.5	1598.8	1594.3	1549.3	1466.8	1425.8	1385.2	1280.0	1219.5	1190.3
40°	1583.7	1588.2	1552.7	1548.3	1504.6	1422.4	1377.7	1335.0	1228.1	1165.1	1136.6
42.5°	1523.8	1528.0	1498.4	1494.3	1453.3	1371.1	1329.5	1283.1	1173.7	1109.8	1080.2
45°	1457.8	1463.3	1436.8	1433.7	1395.6	1315.1	1275.2	1228.1	1117.0	1052.0	1023.1
47.5°	1384.2	1391.4	1368.4	1366.7	1331.3	1257.7	1216.0	1168.2	1057.5	991.8	964.7
50°	1301.7	1312.0	1293.1	1293.1	1261.4	1188.2	1152.1	1104.3	995.6	929.9	903.1
52.5°	1213.3	1226.4	1212.3	1212.6	1186.8	1121.1	1083.6	1036.9	930.9	866.3	841.5
55°	1121.8	1134.5	1125.6	1127.0	1106.7	1046.8	1012.8	966.4	864.9	802.0	778.6
57.5°	1026.2	1040.0	1034.1	1036.9	1022.8	969.1	933.7	893.1	796.8	734.6	714.6
60°	930.3	943.3	940.2	944.0	935.1	888.6	856.3	814.4	728.4	668.6	651.0
62.5°	833.3	845.3	844.6	848.8	843.9	805.4	776.5	740.8	657.5	602.5	586.4
65°	738.4	748.7	748.0	752.5	751.4	720.5	694.3	661.7	586.7	536.1	522.0
67.5°	646.2	654.8	652.4	657.5	658.9	634.2	611.5	582.2	519.3	470.1	458.1
70°	556.1	561.9	558.8	562.3	565.4	546.8	527.5	501.8	447.4	404.1	394.1
72.5°	467.7	471.8	467.0	470.5	473.2	459.8	444.0	421.6	376.6	339.1	330.8
75°	382.1	387.9	378.0	381.4	383.5	370.0	360.8	342.5	303.7	274.8	269.3
77.5°	299.2	302.6	297.1	295.8	297.1	287.5	280.3	266.2	237.0	213.2	209.8
80°	220.1	222.2	216.7	215.3	216.3	209.4	203.9	193.6	173.0	155.1	153.7
82.5°	147.5	148.6	143.8	142.4	143.1	141.0	134.5	127.2	117.6	102.5	102.1
85°	84.3	84.3	80.8	79.4	80.1	76.7	74.3	70.5	66.7	56.4	57.1
87.5°	31.0	31.0	29.2	28.9	32.3	28.5	27.5	25.8	26.8	21.3	22.7
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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CANDELA DISTRIBUTION (continued):

	80°	90°	100°	110°	112.5°	120°	130°	135°	140°	150°	157.5°
0°	1573.4	1573.4	1573.4	1573.4	1573.4	1573.4	1573.4	1573.4	1573.4	1573.4	1573.4
2.5°	1580.2	1576.8	1573.7	1563.0	1567.5	1556.5	1555.8	1551.7	1548.6	1542.8	1550.3
5°	1575.1	1568.2	1559.3	1546.5	1550.3	1537.3	1534.5	1529.7	1525.6	1518.0	1523.8
7.5°	1566.8	1555.5	1541.4	1525.2	1530.4	1514.2	1510.1	1504.9	1501.5	1492.5	1497.7
10°	1554.8	1538.6	1522.1	1502.5	1506.3	1488.8	1483.6	1478.1	1475.0	1467.1	1472.3
12.5°	1536.2	1516.6	1494.3	1472.9	1477.1	1460.6	1453.7	1447.8	1446.8	1440.3	1446.5
15°	1512.1	1485.0	1461.9	1439.2	1444.1	1424.8	1421.7	1415.9	1417.6	1413.1	1420.7
17.5°	1481.5	1450.2	1425.1	1400.7	1405.5	1389.4	1387.0	1384.2	1385.9	1385.2	1393.5
20°	1447.2	1412.8	1383.9	1359.8	1362.6	1349.8	1350.9	1350.2	1353.6	1357.4	1368.7
22.5°	1408.3	1369.4	1339.2	1314.4	1318.5	1307.5	1312.3	1313.7	1319.6	1328.2	1342.6
25°	1364.6	1323.0	1291.4	1268.0	1271.8	1264.5	1272.8	1276.2	1285.5	1300.0	1314.7
27.5°	1318.9	1274.9	1241.2	1218.8	1226.0	1218.8	1231.2	1238.1	1252.2	1268.0	1286.2
30°	1270.4	1224.6	1189.9	1170.0	1176.8	1170.3	1190.3	1199.5	1213.6	1235.3	1257.0
32.5°	1219.5	1171.3	1137.3	1121.8	1126.6	1125.6	1148.0	1158.3	1177.2	1201.9	1225.0
35°	1167.2	1117.0	1082.6	1069.5	1075.4	1076.8	1103.6	1115.6	1136.3	1166.2	1190.9
37.5°	1113.2	1062.0	1028.3	1017.6	1022.8	1027.9	1059.2	1071.3	1094.6	1127.3	1154.5
40°	1057.2	1005.9	972.9	964.3	969.5	975.0	1009.0	1025.5	1051.0	1086.4	1116.0
42.5°	1000.4	949.2	917.2	911.0	916.2	926.8	962.9	978.4	1005.2	1044.4	1077.1
45°	942.6	889.3	861.5	856.7	862.2	874.5	910.0	928.5	957.1	1000.1	1035.2
47.5°	884.2	832.2	805.8	802.7	808.2	821.9	861.1	878.0	908.3	954.0	991.8
50°	825.0	774.5	749.0	748.0	753.2	767.9	805.4	825.4	856.7	907.9	946.8
52.5°	765.2	716.7	693.7	693.7	698.5	713.6	751.4	772.1	804.4	858.4	901.4
55°	705.3	659.3	637.3	639.0	645.9	658.9	695.7	717.4	750.1	806.1	851.5
57.5°	645.5	601.8	581.9	584.3	590.8	603.9	640.0	664.4	694.0	752.1	798.5
60°	586.4	545.1	527.5	530.3	536.1	549.2	586.7	607.7	637.3	696.4	742.8
62.5°	526.5	489.0	472.5	476.0	481.1	494.2	529.6	549.9	579.1	637.3	684.0
65°	467.4	432.6	418.5	422.0	426.8	438.8	472.2	491.8	519.6	576.4	621.1
67.5°	408.9	377.3	365.6	369.0	372.8	384.1	411.7	433.0	459.1	513.1	555.4
70°	351.1	322.9	312.6	316.0	319.5	329.8	353.9	373.5	397.6	447.1	486.3
72.5°	294.0	266.5	261.4	264.5	267.2	276.2	299.2	314.7	335.7	379.7	413.4
75°	238.3	214.6	211.2	214.3	216.7	223.5	242.8	256.2	273.7	311.9	339.4
77.5°	184.7	164.7	163.4	165.8	168.2	173.0	188.1	202.2	216.0	244.2	268.6
80°	134.5	118.3	118.3	120.7	120.0	125.9	136.5	147.9	157.9	178.1	196.0
82.5°	88.7	76.0	77.7	79.4	80.5	82.9	89.4	98.0	104.2	116.6	128.3
85°	49.2	40.6	42.3	43.7	43.0	45.7	49.2	54.3	57.4	63.3	69.5
87.5°	18.2	15.1	15.5	16.5	17.2	18.6	18.6	21.7	22.0	22.7	24.1
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	160°	170°	180°
0°	1573.4	1573.4	1573.4
2.5°	1535.9	1544.1	1550.3
5°	1509.4	1516.3	1521.8
7.5°	1483.6	1489.8	1494.6
10°	1459.2	1466.1	1469.5
12.5°	1434.1	1442.0	1444.7
15°	1409.3	1417.2	1420.7
17.5°	1383.9	1394.2	1398.0
20°	1360.1	1373.2	1376.3
22.5°	1336.1	1349.5	1353.3
25°	1309.9	1325.8	1329.5
27.5°	1282.1	1301.0	1304.8
30°	1254.2	1274.9	1278.6
32.5°	1224.3	1246.7	1250.1
35°	1193.0	1215.4	1219.5
37.5°	1158.3	1182.7	1190.9
40°	1122.2	1148.6	1157.2
42.5°	1084.3	1113.2	1122.2
45°	1043.8	1075.4	1085.7
47.5°	1002.8	1038.6	1047.5
50°	958.5	996.6	1007.3
52.5°	912.0	953.6	964.3
55°	863.9	905.8	917.5
57.5°	811.6	854.9	867.3
60°	756.9	800.3	812.0
62.5°	700.9	740.1	751.4
65°	638.3	675.1	685.4
67.5°	571.9	605.6	614.2
70°	501.4	530.6	538.2
72.5°	427.8	448.1	458.1
75°	351.8	368.0	375.5
77.5°	275.5	286.8	293.0
80°	200.8	207.4	212.5
82.5°	131.4	134.1	137.9
85°	70.8	70.8	73.3
87.5°	24.1	23.0	24.1
90°	0.0	0.0	0.0

(END OF REPORT)