

Scaled data based on original data using

LM-41-14 Approved Method for Photometric Testing Of Indoor Fluorescent Luminaires

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: io LED

Report Number: P209127

Luminaire Tested: **LDSQ4B20D010 EU4B10208035 4LBSQ1LI**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P209127
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P35088)
Test Lab: INNOVATION CENTER-P3
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LDSQ4B20D010 EU4B10208035 4LBSQ1LI
Description: PORTFOLIO LD4 SERIES 4" RECESSED FIXTURE WITH A SQUARE LOW
IRIDESCENT TRIM.
MEDIUM DISTRIBUTION WITH SPECULAR CLEAR TRIM
WATTAGE D010TR-21.86 W DE010-20.46 W D5LT-21.24 W DMX-20.89 W DL2-22.5 W
DL3-21.8 6 W DLE-22.46 W
Light Source: HIGH LUMEN LED 3500 K
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1967.2 lumens
Efficiency: N/A
Efficacy: 94.6 lumens/watt
Spacing Criteria (0/90/45): 0.91 / 0.9 / 0.94
Luminous Opening: Point Source (0' x 0' x 0')
CIE Type: Direct

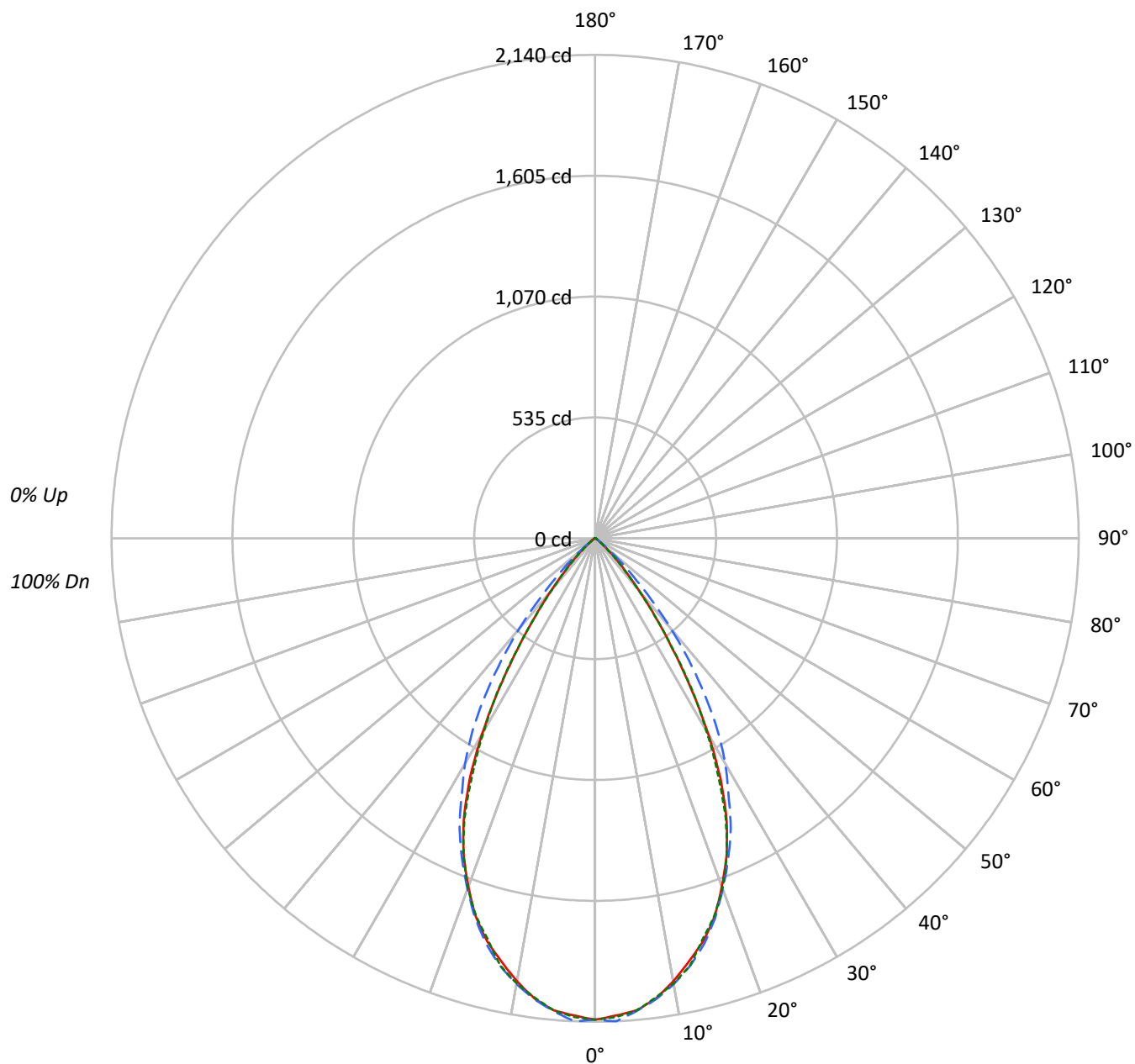
Input Watts (W): 20.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	113	111	108	106	111	108	106	104	104	103	101	101	99	98	97	96	95	93			
2	108	103	99	95	105	101	97	94	98	95	92	95	92	90	92	90	88	87			
3	102	96	91	87	100	94	90	86	92	88	84	89	86	83	87	84	82	80			
4	97	89	84	79	95	88	83	79	86	81	78	84	80	77	82	79	76	75			
5	92	83	77	73	90	82	77	73	81	76	72	79	75	71	77	74	71	69			
6	87	78	72	68	86	77	71	67	76	71	67	74	70	66	73	69	66	64			
7	83	73	67	63	81	73	67	63	71	66	62	70	65	62	69	65	62	60			
8	79	69	63	59	77	68	62	58	67	62	58	66	61	58	65	61	58	56			
9	75	65	59	55	74	64	59	55	63	58	55	63	58	54	62	57	54	53			
10	71	61	55	51	70	61	55	51	60	55	51	59	54	51	58	54	51	50			

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	Luminaire represents a point source (luminous area is zero).		
5°	No luminance values can be calculated.		
10°			
15°			
20°			
25°			
30°			
35°			
40°			
45°			
50°			
55°			
60°			
65°			
70°			
75°			
80°			
85°			



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	197.6	10.0
10°-20°	517.7	26.3
20°-30°	632.5	32.2
30°-40°	442.4	22.5
40°-50°	145.0	7.4
50°-60°	23.0	1.2
60°-70°	6.3	0.3
70°-80°	2.1	0.1
80°-90°	0.6	0.0
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°	1347.8	68.5
0°-40°	1790.2	91.0
0°-60°	1958.2	99.5
0°-90°	1967.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1967.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2131	2131	2131	2131	2131	
5°	2098	2099	2101	2088	2098	197
15°	1846	1854	1860	1848	1837	515
25°	1377	1398	1420	1394	1367	618
35°	596	703	846	692	601	380
45°	131	162	238	160	130	110
55°	19	20	23	20	18	19
65°	5	7	5	7	5	6
75°	1	1	1	1	1	2
85°	0	0	0	0	0	1
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	2130.8	2130.8	2130.8	2130.8	2130.8	2130.8	2130.8	2130.8	2130.8	2130.8	2130.8
2.5°	2114.5	2129.4	2125.3	2134.8	2134.8	2124.0	2126.7	2130.8	2136.2	2140.2	2107.7
5°	2098.3	2111.8	2099.6	2113.2	2105.0	2092.8	2113.2	2102.3	2109.1	2101.0	2106.4
7.5°	2054.9	2076.6	2052.2	2068.5	2063.1	2056.3	2064.4	2061.7	2065.8	2059.0	2044.1
10°	1991.3	2008.9	1992.7	2015.7	2004.9	1998.1	2004.9	2011.6	2010.3	2003.5	2011.6
12.5°	1918.2	1938.5	1930.4	1943.9	1931.8	1931.8	1948.0	1943.9	1945.3	1939.9	1949.4
15°	1846.5	1861.4	1849.2	1866.8	1861.4	1846.5	1853.2	1853.2	1864.1	1860.0	1849.2
17.5°	1757.1	1769.3	1755.8	1759.8	1754.4	1751.7	1780.1	1761.2	1772.0	1763.9	1765.2
20°	1639.4	1644.8	1640.7	1651.5	1644.8	1652.9	1650.2	1647.5	1647.5	1651.5	1642.1
22.5°	1520.2	1520.2	1524.3	1527.0	1532.4	1524.3	1540.5	1527.0	1528.3	1537.8	1535.1
25°	1376.7	1372.7	1382.1	1395.7	1401.1	1394.3	1416.0	1405.2	1413.3	1420.0	1405.2
27.5°	1202.1	1202.1	1211.6	1234.6	1238.7	1246.8	1276.6	1276.6	1287.4	1277.9	1288.7
30°	1000.4	1015.3	1027.5	1057.3	1066.7	1084.3	1115.5	1130.4	1154.7	1150.7	1145.2
32.5°	793.3	813.6	814.9	846.1	871.8	901.6	943.5	978.7	996.3	1008.5	995.0
35°	595.6	607.8	618.6	640.3	683.6	722.9	760.8	806.8	838.0	846.1	833.9
37.5°	435.9	438.6	449.4	469.7	502.2	540.1	586.2	636.2	668.7	680.9	667.4
40°	300.5	303.2	308.6	326.2	353.3	380.4	416.9	468.4	498.2	522.5	504.9
42.5°	201.7	204.4	209.8	223.4	238.3	264.0	292.4	324.9	353.3	364.1	354.7
45°	131.3	131.3	134.0	143.5	151.6	171.9	192.2	212.5	231.5	238.3	231.5
47.5°	77.2	78.5	81.2	88.0	97.5	105.6	120.5	134.0	139.4	144.8	142.1
50°	44.7	44.7	48.7	52.8	59.6	65.0	70.4	75.8	78.5	81.2	78.5
52.5°	24.4	25.7	27.1	28.4	31.1	36.6	40.6	40.6	42.0	43.3	42.0
55°	19.0	19.0	19.0	19.0	20.3	20.3	20.3	21.7	21.7	23.0	21.7
57.5°	13.5	13.5	13.5	14.9	14.9	14.9	13.5	13.5	13.5	13.5	13.5
60°	10.8	10.8	10.8	10.8	10.8	10.8	10.8	9.5	9.5	9.5	9.5
62.5°	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1
65°	5.4	5.4	6.8	6.8	6.8	6.8	6.8	5.4	5.4	5.4	5.4
67.5°	4.1	4.1	4.1	4.1	5.4	5.4	4.1	4.1	4.1	4.1	4.1
70°	2.7	2.7	2.7	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
72.5°	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
75°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
77.5°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
80°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
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):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	2130.8	2130.8	2130.8	2130.8	2130.8	2130.8	2130.8	2130.8
2.5°	2130.8	2107.7	2110.4	2122.6	2115.9	2122.6	2121.3	2121.3
5°	2107.7	2101.0	2090.1	2086.1	2094.2	2111.8	2109.1	2098.3
7.5°	2064.4	2046.8	2059.0	2064.4	2057.6	2068.5	2073.9	2050.9
10°	2013.0	2006.2	2003.5	2006.2	2003.5	2014.3	2000.8	2000.8
12.5°	1939.9	1929.0	1929.0	1945.3	1935.8	1927.7	1938.5	1937.2
15°	1866.8	1845.1	1845.1	1850.5	1854.6	1849.2	1850.5	1837.0
17.5°	1758.5	1751.7	1742.2	1757.1	1761.2	1755.8	1759.8	1753.1
20°	1656.9	1656.9	1639.4	1646.1	1651.5	1655.6	1658.3	1647.5
22.5°	1527.0	1529.7	1517.5	1531.1	1535.1	1521.6	1524.3	1521.6
25°	1407.9	1406.5	1397.0	1391.6	1394.3	1388.9	1387.6	1367.3
27.5°	1276.6	1263.0	1242.7	1248.1	1225.1	1206.2	1206.2	1175.0
30°	1134.4	1111.4	1084.3	1057.3	1036.9	1015.3	1003.1	985.5
32.5°	967.9	936.8	902.9	866.4	843.4	810.9	793.3	802.8
35°	802.8	756.7	710.7	674.2	639.0	620.0	598.3	601.1
37.5°	643.0	578.0	537.4	498.2	468.4	444.0	434.5	431.8
40°	469.7	418.3	377.7	349.3	329.0	310.0	299.2	295.1
42.5°	324.9	288.3	255.9	232.8	219.3	207.1	201.7	200.4
45°	211.2	189.5	167.9	151.6	140.8	132.7	131.3	130.0
47.5°	132.7	121.8	108.3	96.1	86.6	81.2	77.2	77.2
50°	75.8	71.7	65.0	58.2	52.8	50.1	46.0	44.7
52.5°	40.6	40.6	37.9	32.5	28.4	25.7	25.7	24.4
55°	21.7	21.7	20.3	20.3	19.0	19.0	19.0	17.6
57.5°	13.5	13.5	14.9	14.9	13.5	13.5	13.5	13.5
60°	9.5	10.8	10.8	10.8	10.8	10.8	10.8	10.8
62.5°	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1
65°	5.4	6.8	6.8	6.8	6.8	5.4	5.4	5.4
67.5°	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
70°	4.1	4.1	4.1	4.1	4.1	2.7	2.7	2.7
72.5°	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
75°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
77.5°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
80°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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— 0°-180° - - 45°-225° - - - 90°-270°









(END OF REPORT)