

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: P209132

Luminaire Tested: **LDSQ4B20D010 EU4B10209030 4LBSQ1LI**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P209132
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 EU4B10209030 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 3000 K
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1639.6 lumens
Efficiency: N/A
Efficacy: 78.8 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

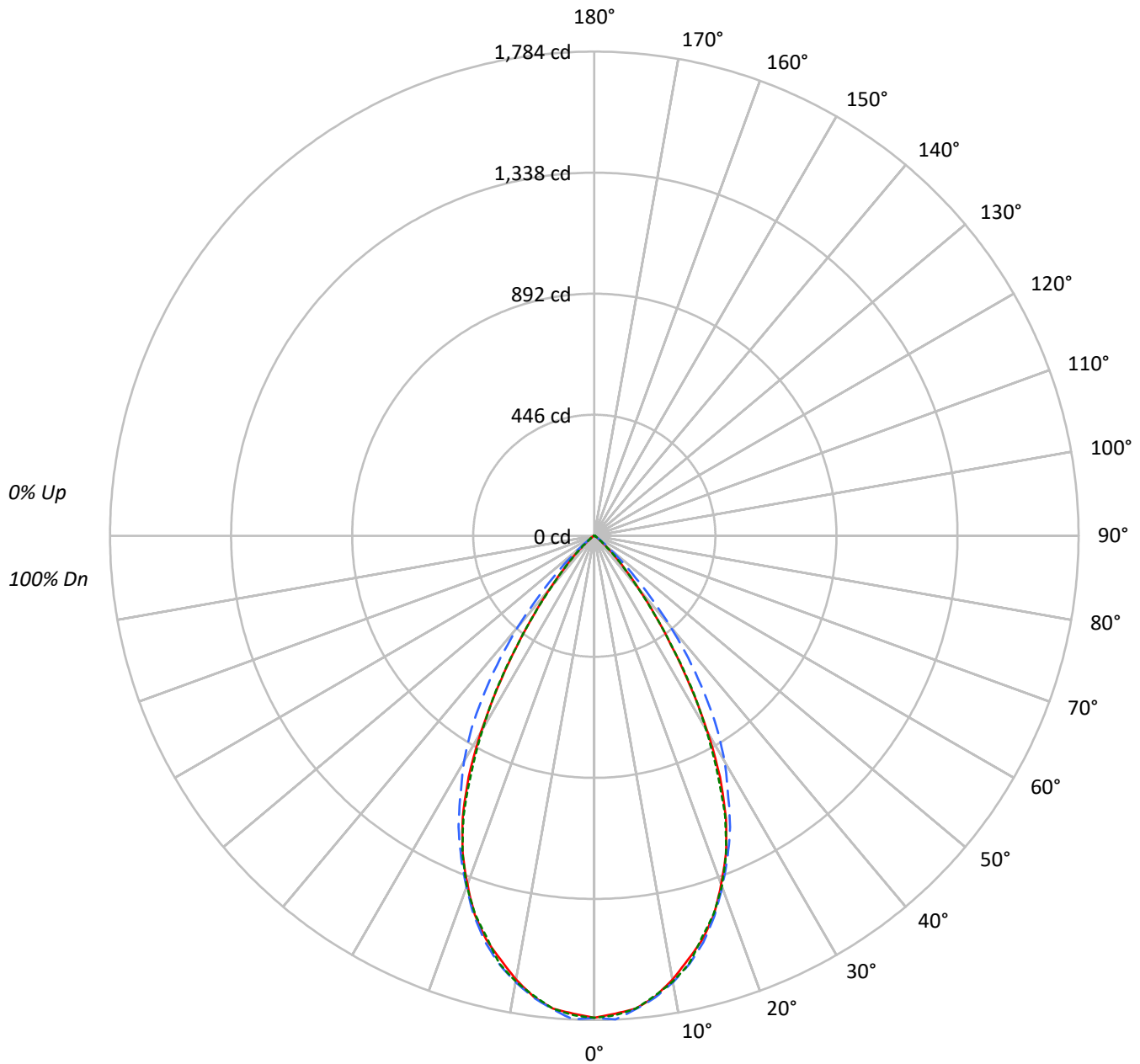
Input Watts (W): 20.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	164.7	10.0
10°-20°	431.6	26.3
20°-30°	527.2	32.2
30°-40°	368.7	22.5
40°-50°	120.8	7.4
50°-60°	19.2	1.2
60°-70°	5.2	0.3
70°-80°	1.7	0.1
80°-90°	0.5	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°	1123.4	68.5
0°-40°	1492.1	91.0
0°-60°	1632.2	99.5
0°-90°	1639.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1639.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1776	1776	1776	1776	1776	
5°	1749	1750	1751	1740	1749	164
15°	1539	1545	1550	1540	1531	429
25°	1148	1165	1184	1162	1140	515
35°	496	586	705	577	501	317
45°	110	135	199	133	108	92
55°	16	17	19	17	15	16
65°	4	6	4	6	4	5
75°	1	1	1	1	1	2
85°	0	0	0	0	0	0
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°	1776.0	1776.0	1776.0	1776.0	1776.0	1776.0	1776.0	1776.0	1776.0	1776.0	1776.0
2.5°	1762.5	1774.9	1771.5	1779.4	1779.4	1770.4	1772.6	1776.0	1780.5	1783.9	1756.9
5°	1749.0	1760.2	1750.1	1761.4	1754.6	1744.4	1761.4	1752.3	1758.0	1751.2	1755.7
7.5°	1712.8	1730.9	1710.6	1724.1	1719.6	1714.0	1720.7	1718.5	1721.9	1716.2	1703.8
10°	1659.8	1674.5	1660.9	1680.1	1671.1	1665.5	1671.1	1676.7	1675.6	1670.0	1676.7
12.5°	1598.9	1615.8	1609.0	1620.3	1610.2	1610.2	1623.7	1620.3	1621.4	1616.9	1624.8
15°	1539.1	1551.5	1541.3	1556.0	1551.5	1539.1	1544.7	1544.7	1553.7	1550.4	1541.3
17.5°	1464.6	1474.8	1463.5	1466.9	1462.4	1460.1	1483.8	1468.0	1477.0	1470.2	1471.4
20°	1366.4	1371.0	1367.6	1376.6	1371.0	1377.7	1375.5	1373.2	1373.2	1376.6	1368.7
22.5°	1267.1	1267.1	1270.5	1272.8	1277.3	1270.5	1284.1	1272.8	1273.9	1281.8	1279.6
25°	1147.5	1144.2	1152.1	1163.3	1167.8	1162.2	1180.3	1171.2	1178.0	1183.6	1171.2
27.5°	1002.0	1002.0	1009.9	1029.1	1032.4	1039.2	1064.0	1064.0	1073.1	1065.2	1074.2
30°	833.9	846.3	856.4	881.2	889.1	903.8	929.8	942.2	962.5	959.1	954.6
32.5°	661.2	678.1	679.3	705.2	726.7	751.5	786.5	815.8	830.5	840.6	829.3
35°	496.5	506.6	515.7	533.7	569.8	602.5	634.1	672.5	698.5	705.2	695.1
37.5°	363.3	365.6	374.6	391.5	418.6	450.2	488.6	530.3	557.4	567.6	556.3
40°	250.5	252.8	257.3	271.9	294.5	317.1	347.5	390.4	415.2	435.5	420.9
42.5°	168.1	170.4	174.9	186.2	198.6	220.0	243.7	270.8	294.5	303.5	295.6
45°	109.5	109.5	111.7	119.6	126.4	143.3	160.2	177.2	192.9	198.6	192.9
47.5°	64.3	65.4	67.7	73.3	81.2	88.0	100.4	111.7	116.2	120.7	118.5
50°	37.2	37.2	40.6	44.0	49.6	54.2	58.7	63.2	65.4	67.7	65.4
52.5°	20.3	21.4	22.6	23.7	26.0	30.5	33.9	33.9	35.0	36.1	35.0
55°	15.8	15.8	15.8	15.8	16.9	16.9	16.9	18.1	18.1	19.2	18.1
57.5°	11.3	11.3	11.3	12.4	12.4	12.4	11.3	11.3	11.3	11.3	11.3
60°	9.0	9.0	9.0	9.0	9.0	9.0	9.0	7.9	7.9	7.9	7.9
62.5°	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8
65°	4.5	4.5	5.6	5.6	5.6	5.6	5.6	4.5	4.5	4.5	4.5
67.5°	3.4	3.4	3.4	3.4	4.5	4.5	3.4	3.4	3.4	3.4	3.4
70°	2.3	2.3	2.3	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4
72.5°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
75°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
77.5°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
80°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	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°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
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):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1776.0	1776.0	1776.0	1776.0	1776.0	1776.0	1776.0	1776.0
2.5°	1776.0	1756.9	1759.1	1769.3	1763.6	1769.3	1768.1	1768.1
5°	1756.9	1751.2	1742.2	1738.8	1745.6	1760.2	1758.0	1749.0
7.5°	1720.7	1706.1	1716.2	1720.7	1715.1	1724.1	1728.6	1709.5
10°	1677.9	1672.2	1670.0	1672.2	1670.0	1679.0	1667.7	1667.7
12.5°	1616.9	1607.9	1607.9	1621.4	1613.6	1606.8	1615.8	1614.7
15°	1556.0	1538.0	1538.0	1542.5	1545.8	1541.3	1542.5	1531.2
17.5°	1465.7	1460.1	1452.2	1464.6	1468.0	1463.5	1466.9	1461.2
20°	1381.1	1381.1	1366.4	1372.1	1376.6	1380.0	1382.2	1373.2
22.5°	1272.8	1275.0	1264.9	1276.2	1279.6	1268.3	1270.5	1268.3
25°	1173.5	1172.4	1164.5	1160.0	1162.2	1157.7	1156.6	1139.6
27.5°	1064.0	1052.8	1035.8	1040.3	1021.2	1005.4	1005.4	979.4
30°	945.6	926.4	903.8	881.2	864.3	846.3	836.1	821.4
32.5°	806.8	780.8	752.6	722.1	703.0	675.9	661.2	669.1
35°	669.1	630.8	592.4	561.9	532.6	516.8	498.7	501.0
37.5°	536.0	481.8	448.0	415.2	390.4	370.1	362.2	359.9
40°	391.5	348.7	314.8	291.1	274.2	258.4	249.4	246.0
42.5°	270.8	240.3	213.3	194.1	182.8	172.6	168.1	167.0
45°	176.0	158.0	139.9	126.4	117.3	110.6	109.5	108.3
47.5°	110.6	101.6	90.3	80.1	72.2	67.7	64.3	64.3
50°	63.2	59.8	54.2	48.5	44.0	41.7	38.4	37.2
52.5°	33.9	33.9	31.6	27.1	23.7	21.4	21.4	20.3
55°	18.1	18.1	16.9	16.9	15.8	15.8	15.8	14.7
57.5°	11.3	11.3	12.4	12.4	11.3	11.3	11.3	11.3
60°	7.9	9.0	9.0	9.0	9.0	9.0	9.0	9.0
62.5°	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8
65°	4.5	5.6	5.6	5.6	5.6	4.5	4.5	4.5
67.5°	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4
70°	3.4	3.4	3.4	3.4	3.4	2.3	2.3	2.3
72.5°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
75°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
77.5°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
80°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
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°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
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)