

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: P209135

Luminaire Tested: **LDSQ4B20D010 EU4B10209050 4LBSQ1LI**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P209135
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 EU4B10209050 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 5000 K
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1672.9 lumens
Efficiency: N/A
Efficacy: 80.4 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

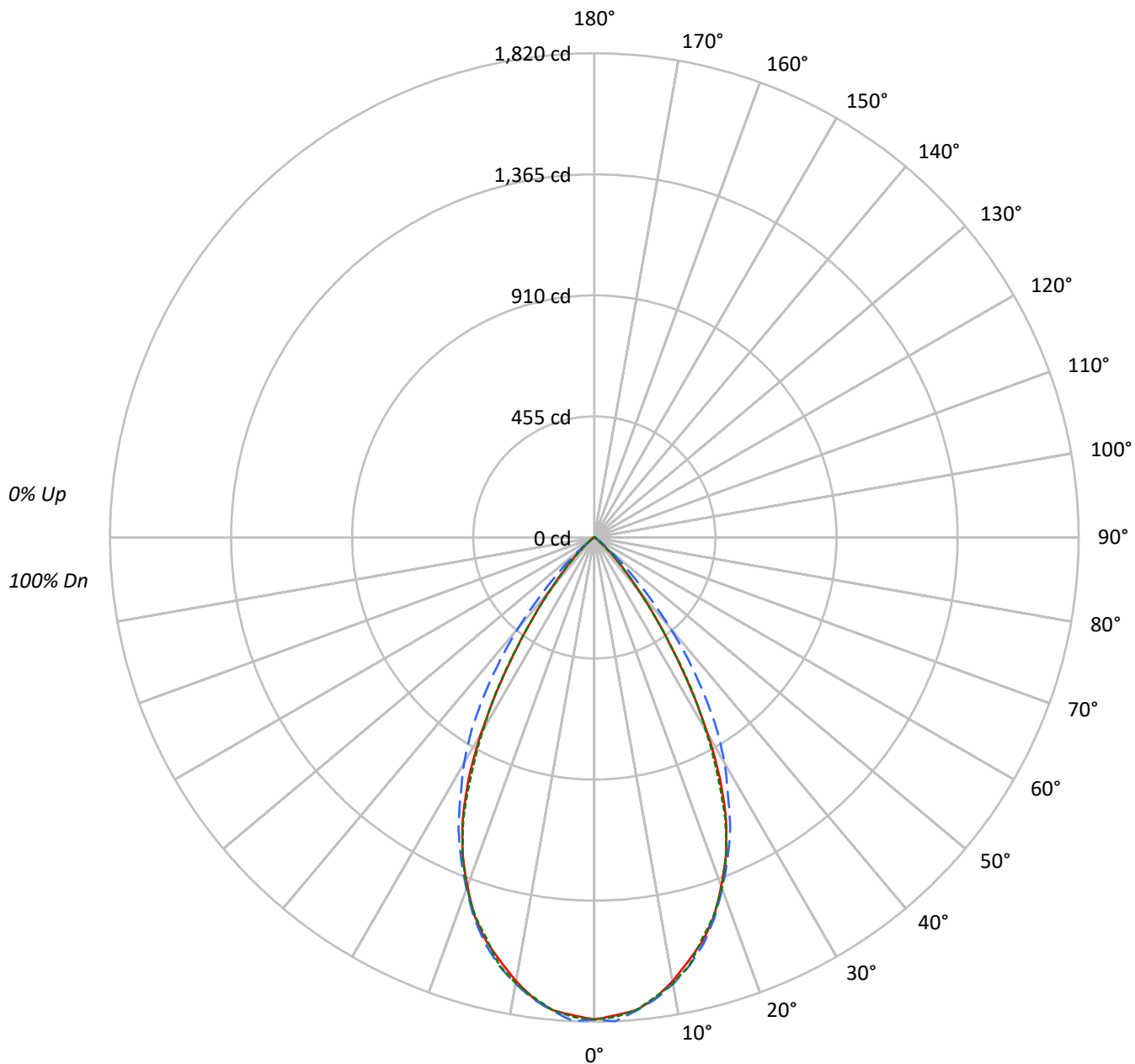
Input Watts (W): 20.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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					0
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	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°	168.0	10.0
10°-20°	440.3	26.3
20°-30°	537.9	32.2
30°-40°	376.2	22.5
40°-50°	123.3	7.4
50°-60°	19.6	1.2
60°-70°	5.4	0.3
70°-80°	1.8	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°	1146.2	68.5
0°-40°	1522.4	91.0
0°-60°	1665.2	99.5
0°-90°	1672.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1672.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1812	1812	1812	1812	1812	
5°	1784	1785	1787	1776	1784	167
15°	1570	1577	1582	1571	1562	438
25°	1171	1189	1208	1186	1163	526
35°	506	598	720	589	511	323
45°	112	138	203	136	110	94
55°	16	17	20	17	15	16
65°	5	6	5	6	5	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°	1812.0	1812.0	1812.0	1812.0	1812.0	1812.0	1812.0	1812.0	1812.0	1812.0	1812.0
2.5°	1798.2	1810.8	1807.4	1815.4	1815.4	1806.2	1808.5	1812.0	1816.6	1820.1	1792.4
5°	1784.4	1795.9	1785.5	1797.0	1790.1	1779.8	1797.0	1787.8	1793.6	1786.7	1791.3
7.5°	1747.5	1765.9	1745.2	1759.0	1754.4	1748.7	1755.6	1753.3	1756.7	1751.0	1738.3
10°	1693.4	1708.4	1694.6	1714.1	1704.9	1699.2	1704.9	1710.7	1709.5	1703.8	1710.7
12.5°	1631.3	1648.5	1641.6	1653.1	1642.8	1642.8	1656.6	1653.1	1654.3	1649.7	1657.7
15°	1570.2	1582.9	1572.5	1587.5	1582.9	1570.2	1576.0	1576.0	1585.2	1581.8	1572.5
17.5°	1494.3	1504.6	1493.1	1496.6	1492.0	1489.7	1513.8	1497.7	1506.9	1500.0	1501.2
20°	1394.1	1398.7	1395.3	1404.5	1398.7	1405.6	1403.3	1401.0	1401.0	1404.5	1396.4
22.5°	1292.8	1292.8	1296.3	1298.6	1303.2	1296.3	1310.1	1298.6	1299.7	1307.8	1305.5
25°	1170.8	1167.3	1175.4	1186.9	1191.5	1185.7	1204.2	1195.0	1201.9	1207.6	1195.0
27.5°	1022.3	1022.3	1030.3	1049.9	1053.4	1060.3	1085.6	1085.6	1094.8	1086.7	1095.9
30°	850.7	863.4	873.8	899.1	907.1	922.1	948.6	961.3	982.0	978.5	973.9
32.5°	674.6	691.9	693.0	719.5	741.4	766.7	802.4	832.3	847.3	857.6	846.1
35°	506.5	516.9	526.1	544.5	581.4	614.7	647.0	686.1	712.6	719.5	709.1
37.5°	370.7	373.0	382.2	399.5	427.1	459.3	498.5	541.1	568.7	579.1	567.5
40°	255.6	257.9	262.5	277.4	300.5	323.5	354.6	398.3	423.6	444.4	429.4
42.5°	171.5	173.8	178.4	189.9	202.6	224.5	248.7	276.3	300.5	309.7	301.6
45°	111.7	111.7	114.0	122.0	128.9	146.2	163.5	180.7	196.9	202.6	196.9
47.5°	65.6	66.8	69.1	74.8	82.9	89.8	102.5	114.0	118.6	123.2	120.9
50°	38.0	38.0	41.4	44.9	50.7	55.3	59.9	64.5	66.8	69.1	66.8
52.5°	20.7	21.9	23.0	24.2	26.5	31.1	34.5	34.5	35.7	36.8	35.7
55°	16.1	16.1	16.1	16.1	17.3	17.3	17.3	18.4	18.4	19.6	18.4
57.5°	11.5	11.5	11.5	12.7	12.7	12.7	11.5	11.5	11.5	11.5	11.5
60°	9.2	9.2	9.2	9.2	9.2	9.2	9.2	8.1	8.1	8.1	8.1
62.5°	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9
65°	4.6	4.6	5.8	5.8	5.8	5.8	5.8	4.6	4.6	4.6	4.6
67.5°	3.5	3.5	3.5	3.5	4.6	4.6	3.5	3.5	3.5	3.5	3.5
70°	2.3	2.3	2.3	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
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°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
77.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
80°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	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°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
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°	1812.0	1812.0	1812.0	1812.0	1812.0	1812.0	1812.0	1812.0
2.5°	1812.0	1792.4	1794.7	1805.1	1799.3	1805.1	1803.9	1803.9
5°	1792.4	1786.7	1777.5	1774.0	1780.9	1795.9	1793.6	1784.4
7.5°	1755.6	1740.6	1751.0	1755.6	1749.8	1759.0	1763.6	1744.1
10°	1711.8	1706.1	1703.8	1706.1	1703.8	1713.0	1701.5	1701.5
12.5°	1649.7	1640.5	1640.5	1654.3	1646.2	1639.3	1648.5	1647.4
15°	1587.5	1569.1	1569.1	1573.7	1577.2	1572.5	1573.7	1562.2
17.5°	1495.4	1489.7	1481.6	1494.3	1497.7	1493.1	1496.6	1490.8
20°	1409.1	1409.1	1394.1	1399.9	1404.5	1407.9	1410.2	1401.0
22.5°	1298.6	1300.9	1290.5	1302.0	1305.5	1294.0	1296.3	1294.0
25°	1197.3	1196.1	1188.0	1183.4	1185.7	1181.1	1180.0	1162.7
27.5°	1085.6	1074.1	1056.8	1061.4	1041.8	1025.7	1025.7	999.2
30°	964.7	945.1	922.1	899.1	881.8	863.4	853.0	838.1
32.5°	823.1	796.6	767.9	736.8	717.2	689.6	674.6	682.7
35°	682.7	643.5	604.4	573.3	543.4	527.3	508.8	511.1
37.5°	546.8	491.6	457.0	423.6	398.3	377.6	369.5	367.2
40°	399.5	355.7	321.2	297.0	279.7	263.6	254.4	251.0
42.5°	276.3	245.2	217.6	198.0	186.5	176.1	171.5	170.4
45°	179.6	161.2	142.7	128.9	119.7	112.8	111.7	110.5
47.5°	112.8	103.6	92.1	81.7	73.7	69.1	65.6	65.6
50°	64.5	61.0	55.3	49.5	44.9	42.6	39.1	38.0
52.5°	34.5	34.5	32.2	27.6	24.2	21.9	21.9	20.7
55°	18.4	18.4	17.3	17.3	16.1	16.1	16.1	15.0
57.5°	11.5	11.5	12.7	12.7	11.5	11.5	11.5	11.5
60°	8.1	9.2	9.2	9.2	9.2	9.2	9.2	9.2
62.5°	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9
65°	4.6	5.8	5.8	5.8	5.8	4.6	4.6	4.6
67.5°	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
70°	3.5	3.5	3.5	3.5	3.5	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°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
77.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
80°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
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°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
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)