

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: P209133

Luminaire Tested: **LDSQ4B20D010 EU4B10209035 4LBSQ1LI**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P209133
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 EU4B10209035 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: 1663.0 lumens
Efficiency: N/A
Efficacy: 80.0 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

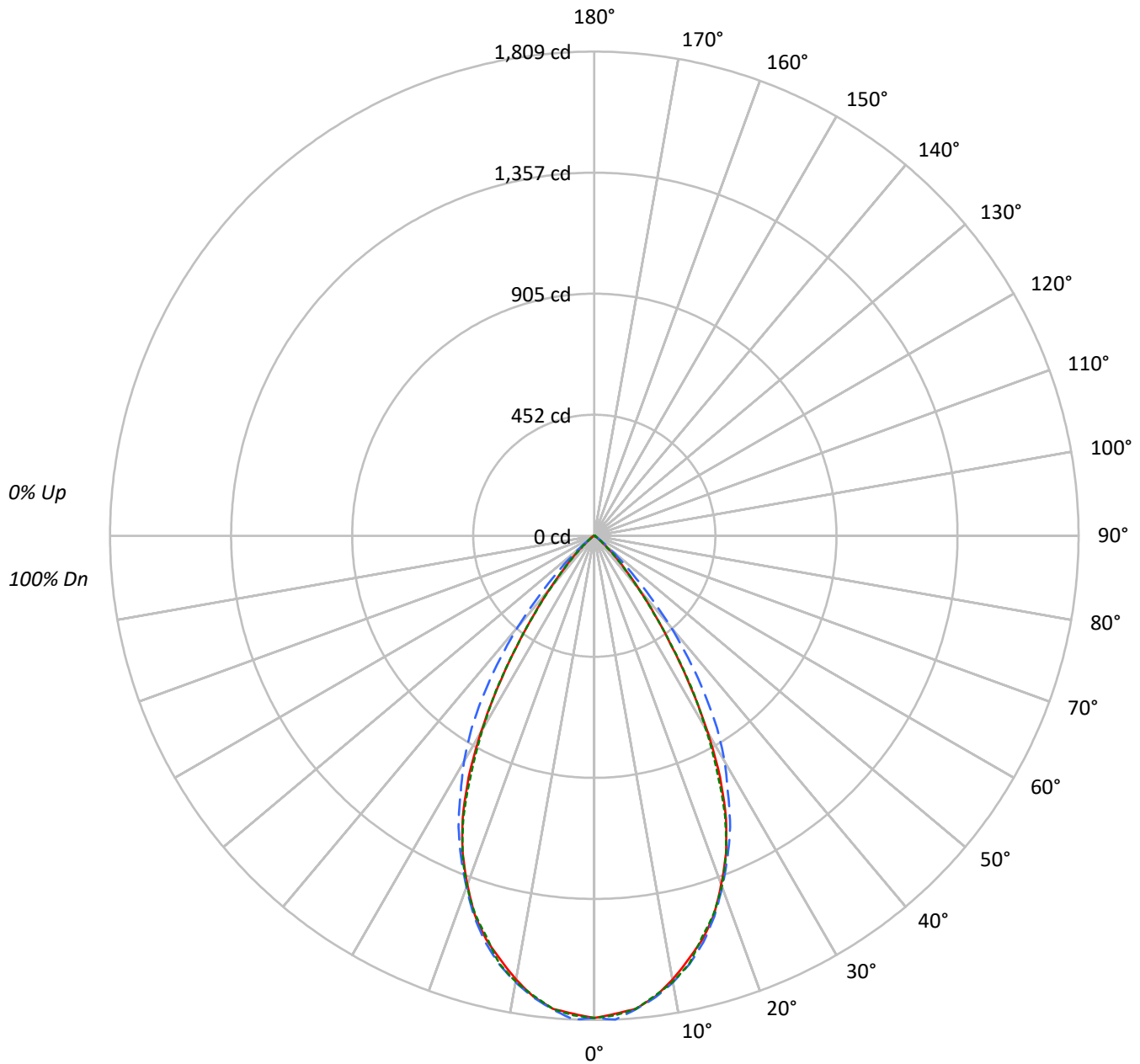
Input Watts (W): 20.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	65			
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°	167.0	10.0
10°-20°	437.7	26.3
20°-30°	534.7	32.2
30°-40°	374.0	22.5
40°-50°	122.6	7.4
50°-60°	19.5	1.2
60°-70°	5.3	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°	1139.4	68.5
0°-40°	1513.4	91.0
0°-60°	1655.5	99.5
0°-90°	1663.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1663.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1801	1801	1801	1801	1801	
5°	1774	1774	1776	1765	1774	166
15°	1561	1567	1572	1562	1553	435
25°	1164	1182	1200	1179	1156	523
35°	504	594	715	585	508	321
45°	111	137	201	135	110	93
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°	1801.4	1801.4	1801.4	1801.4	1801.4	1801.4	1801.4	1801.4	1801.4	1801.4	1801.4
2.5°	1787.6	1800.2	1796.8	1804.8	1804.8	1795.6	1797.9	1801.4	1805.9	1809.4	1781.9
5°	1773.9	1785.3	1775.0	1786.5	1779.6	1769.3	1786.5	1777.3	1783.1	1776.2	1780.8
7.5°	1737.3	1755.6	1735.0	1748.7	1744.1	1738.4	1745.3	1743.0	1746.4	1740.7	1728.1
10°	1683.5	1698.4	1684.6	1704.1	1694.9	1689.2	1694.9	1700.7	1699.5	1693.8	1700.7
12.5°	1621.7	1638.9	1632.0	1643.4	1633.1	1633.1	1646.9	1643.4	1644.6	1640.0	1648.0
15°	1561.0	1573.6	1563.3	1578.2	1573.6	1561.0	1566.8	1566.8	1575.9	1572.5	1563.3
17.5°	1485.5	1495.8	1484.4	1487.8	1483.2	1480.9	1505.0	1488.9	1498.1	1491.2	1492.4
20°	1385.9	1390.5	1387.1	1396.2	1390.5	1397.4	1395.1	1392.8	1392.8	1396.2	1388.2
22.5°	1285.2	1285.2	1288.7	1290.9	1295.5	1288.7	1302.4	1290.9	1292.1	1300.1	1297.8
25°	1163.9	1160.5	1168.5	1179.9	1184.5	1178.8	1197.1	1187.9	1194.8	1200.5	1187.9
27.5°	1016.3	1016.3	1024.3	1043.7	1047.2	1054.0	1079.2	1079.2	1088.4	1080.4	1089.5
30°	845.8	858.3	868.6	893.8	901.8	916.7	943.0	955.6	976.2	972.8	968.2
32.5°	670.7	687.8	689.0	715.3	737.0	762.2	797.7	827.4	842.3	852.6	841.2
35°	503.6	513.9	523.0	541.3	577.9	611.1	643.2	682.1	708.4	715.3	705.0
37.5°	368.5	370.8	380.0	397.1	424.6	456.6	495.5	537.9	565.4	575.7	564.2
40°	254.1	256.4	260.9	275.8	298.7	321.6	352.5	396.0	421.2	441.8	426.9
42.5°	170.5	172.8	177.4	188.8	201.4	223.2	247.2	274.7	298.7	307.9	299.8
45°	111.0	111.0	113.3	121.3	128.2	145.3	162.5	179.7	195.7	201.4	195.7
47.5°	65.2	66.4	68.7	74.4	82.4	89.3	101.9	113.3	117.9	122.5	120.2
50°	37.8	37.8	41.2	44.6	50.4	54.9	59.5	64.1	66.4	68.7	66.4
52.5°	20.6	21.7	22.9	24.0	26.3	30.9	34.3	34.3	35.5	36.6	35.5
55°	16.0	16.0	16.0	16.0	17.2	17.2	17.2	18.3	18.3	19.5	18.3
57.5°	11.4	11.4	11.4	12.6	12.6	12.6	11.4	11.4	11.4	11.4	11.4
60°	9.2	9.2	9.2	9.2	9.2	9.2	9.2	8.0	8.0	8.0	8.0
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	5.7	5.7	5.7	5.7	5.7	4.6	4.6	4.6	4.6
67.5°	3.4	3.4	3.4	3.4	4.6	4.6	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°	1801.4	1801.4	1801.4	1801.4	1801.4	1801.4	1801.4	1801.4
2.5°	1801.4	1781.9	1784.2	1794.5	1788.8	1794.5	1793.4	1793.4
5°	1781.9	1776.2	1767.0	1763.6	1770.5	1785.3	1783.1	1773.9
7.5°	1745.3	1730.4	1740.7	1745.3	1739.6	1748.7	1753.3	1733.8
10°	1701.8	1696.1	1693.8	1696.1	1693.8	1702.9	1691.5	1691.5
12.5°	1640.0	1630.8	1630.8	1644.6	1636.6	1629.7	1638.9	1637.7
15°	1578.2	1559.9	1559.9	1564.5	1567.9	1563.3	1564.5	1553.0
17.5°	1486.6	1480.9	1472.9	1485.5	1488.9	1484.4	1487.8	1482.1
20°	1400.8	1400.8	1385.9	1391.7	1396.2	1399.7	1402.0	1392.8
22.5°	1290.9	1293.2	1282.9	1294.4	1297.8	1286.4	1288.7	1286.4
25°	1190.2	1189.1	1181.1	1176.5	1178.8	1174.2	1173.1	1155.9
27.5°	1079.2	1067.8	1050.6	1055.2	1035.7	1019.7	1019.7	993.4
30°	959.1	939.6	916.7	893.8	876.7	858.3	848.0	833.2
32.5°	818.3	792.0	763.4	732.5	713.0	685.5	670.7	678.7
35°	678.7	639.7	600.8	569.9	540.2	524.2	505.8	508.1
37.5°	543.6	488.7	454.3	421.2	396.0	375.4	367.4	365.1
40°	397.1	353.6	319.3	295.3	278.1	262.1	252.9	249.5
42.5°	274.7	243.8	216.3	196.8	185.4	175.1	170.5	169.4
45°	178.5	160.2	141.9	128.2	119.0	112.2	111.0	109.9
47.5°	112.2	103.0	91.6	81.3	73.2	68.7	65.2	65.2
50°	64.1	60.7	54.9	49.2	44.6	42.3	38.9	37.8
52.5°	34.3	34.3	32.0	27.5	24.0	21.7	21.7	20.6
55°	18.3	18.3	17.2	17.2	16.0	16.0	16.0	14.9
57.5°	11.4	11.4	12.6	12.6	11.4	11.4	11.4	11.4
60°	8.0	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	5.7	5.7	5.7	5.7	4.6	4.6	4.6
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)