

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: P209134

Luminaire Tested: **LDSQ4B20D010 EU4B10209040 4LBSQ1LI**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P209134
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 EU4B10209040 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 4000 K
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1665.3 lumens
Efficiency: N/A
Efficacy: 80.1 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

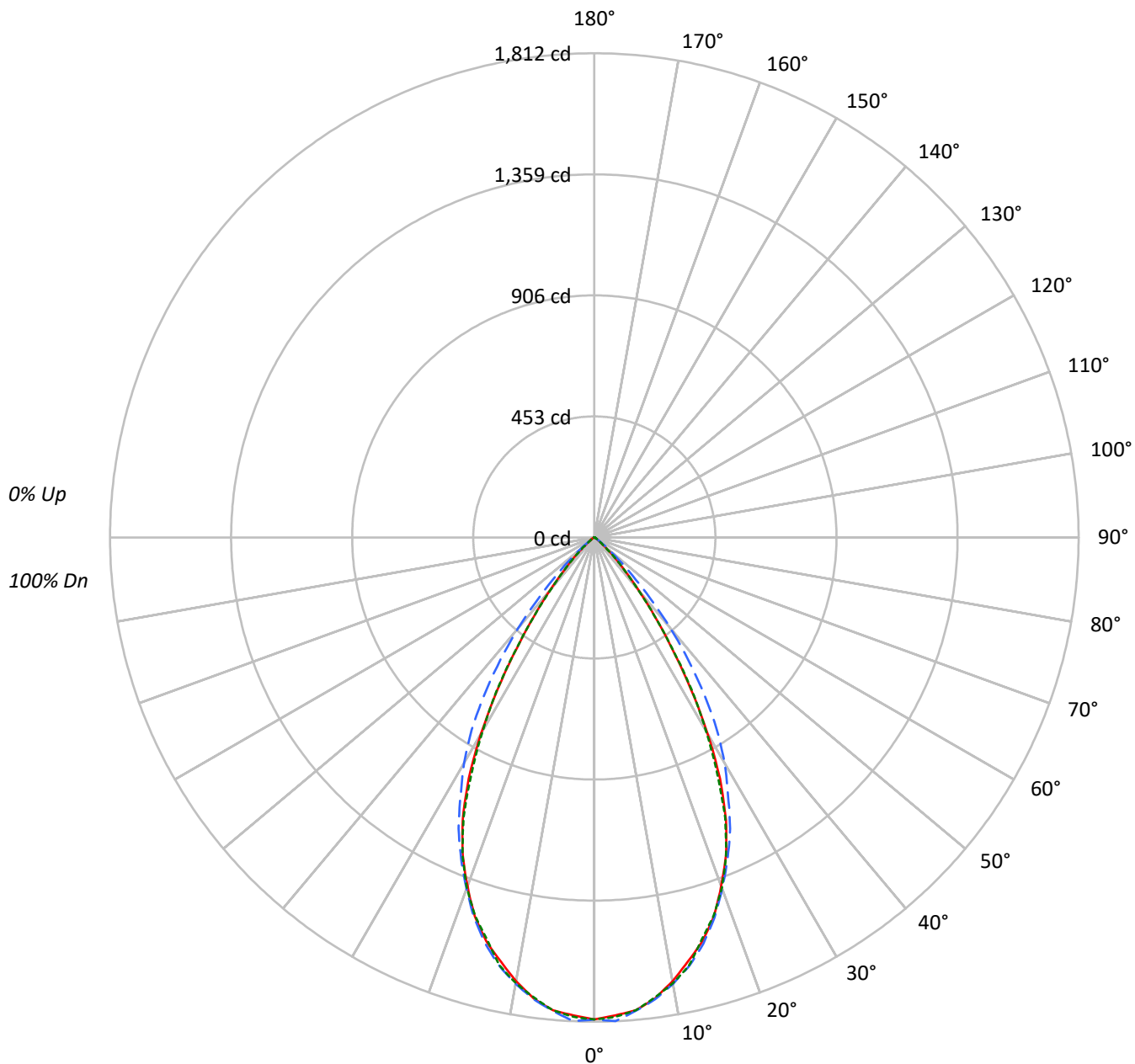
Input Watts (W): 20.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	167.2	10.0
10°-20°	438.3	26.3
20°-30°	535.4	32.2
30°-40°	374.5	22.5
40°-50°	122.7	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°	1141.0	68.5
0°-40°	1515.5	91.0
0°-60°	1657.7	99.5
0°-90°	1665.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1665.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1804	1804	1804	1804	1804	
5°	1776	1777	1779	1768	1776	167
15°	1563	1570	1575	1564	1555	436
25°	1166	1183	1202	1180	1158	524
35°	504	595	716	586	509	322
45°	111	137	202	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°	1803.8	1803.8	1803.8	1803.8	1803.8	1803.8	1803.8	1803.8	1803.8	1803.8	1803.8
2.5°	1790.1	1802.7	1799.2	1807.3	1807.3	1798.1	1800.4	1803.8	1808.4	1811.8	1784.3
5°	1776.3	1787.8	1777.5	1788.9	1782.0	1771.7	1788.9	1779.8	1785.5	1778.6	1783.2
7.5°	1739.6	1758.0	1737.4	1751.1	1746.5	1740.8	1747.7	1745.4	1748.8	1743.1	1730.5
10°	1685.8	1700.7	1686.9	1706.4	1697.2	1691.5	1697.2	1703.0	1701.8	1696.1	1703.0
12.5°	1623.9	1641.1	1634.2	1645.7	1635.4	1635.4	1649.1	1645.7	1646.8	1642.2	1650.3
15°	1563.2	1575.8	1565.5	1580.4	1575.8	1563.2	1568.9	1568.9	1578.1	1574.6	1565.5
17.5°	1487.5	1497.8	1486.4	1489.8	1485.2	1482.9	1507.0	1491.0	1500.1	1493.3	1494.4
20°	1387.8	1392.4	1389.0	1398.1	1392.4	1399.3	1397.0	1394.7	1394.7	1398.1	1390.1
22.5°	1287.0	1287.0	1290.4	1292.7	1297.3	1290.4	1304.2	1292.7	1293.8	1301.9	1299.6
25°	1165.5	1162.1	1170.1	1181.5	1186.1	1180.4	1198.7	1189.6	1196.4	1202.2	1189.6
27.5°	1017.7	1017.7	1025.7	1045.2	1048.6	1055.5	1080.7	1080.7	1089.9	1081.8	1091.0
30°	846.9	859.5	869.8	895.0	903.1	918.0	944.3	956.9	977.5	974.1	969.5
32.5°	671.6	688.8	689.9	716.3	738.0	763.2	798.8	828.6	843.5	853.8	842.3
35°	504.2	514.6	523.7	542.1	578.7	612.0	644.1	683.0	709.4	716.3	705.9
37.5°	369.0	371.3	380.5	397.7	425.2	457.3	496.2	538.6	566.1	576.4	565.0
40°	254.4	256.7	261.3	276.2	299.1	322.0	353.0	396.5	421.7	442.4	427.5
42.5°	170.8	173.0	177.6	189.1	201.7	223.5	247.5	275.0	299.1	308.3	300.3
45°	111.2	111.2	113.5	121.5	128.4	145.5	162.7	179.9	196.0	201.7	196.0
47.5°	65.3	66.5	68.8	74.5	82.5	89.4	102.0	113.5	118.0	122.6	120.3
50°	37.8	37.8	41.3	44.7	50.4	55.0	59.6	64.2	66.5	68.8	66.5
52.5°	20.6	21.8	22.9	24.1	26.4	30.9	34.4	34.4	35.5	36.7	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°	11.5	11.5	11.5	12.6	12.6	12.6	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	8.0	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°	1803.8	1803.8	1803.8	1803.8	1803.8	1803.8	1803.8	1803.8
2.5°	1803.8	1784.3	1786.6	1796.9	1791.2	1796.9	1795.8	1795.8
5°	1784.3	1778.6	1769.4	1766.0	1772.9	1787.8	1785.5	1776.3
7.5°	1747.7	1732.8	1743.1	1747.7	1741.9	1751.1	1755.7	1736.2
10°	1704.1	1698.4	1696.1	1698.4	1696.1	1705.3	1693.8	1693.8
12.5°	1642.2	1633.1	1633.1	1646.8	1638.8	1631.9	1641.1	1639.9
15°	1580.4	1562.0	1562.0	1566.6	1570.0	1565.5	1566.6	1555.1
17.5°	1488.7	1482.9	1474.9	1487.5	1491.0	1486.4	1489.8	1484.1
20°	1402.7	1402.7	1387.8	1393.6	1398.1	1401.6	1403.9	1394.7
22.5°	1292.7	1295.0	1284.7	1296.1	1299.6	1288.1	1290.4	1288.1
25°	1191.9	1190.7	1182.7	1178.1	1180.4	1175.8	1174.7	1157.5
27.5°	1080.7	1069.2	1052.0	1056.6	1037.1	1021.1	1021.1	994.7
30°	960.4	940.9	918.0	895.0	877.8	859.5	849.2	834.3
32.5°	819.4	793.0	764.4	733.4	714.0	686.5	671.6	679.6
35°	679.6	640.6	601.7	570.7	540.9	524.9	506.5	508.8
37.5°	544.4	489.3	455.0	421.7	396.5	375.9	367.9	365.6
40°	397.7	354.1	319.7	295.7	278.5	262.4	253.3	249.8
42.5°	275.0	244.1	216.6	197.1	185.7	175.3	170.8	169.6
45°	178.8	160.4	142.1	128.4	119.2	112.3	111.2	110.0
47.5°	112.3	103.1	91.7	81.4	73.3	68.8	65.3	65.3
50°	64.2	60.7	55.0	49.3	44.7	42.4	39.0	37.8
52.5°	34.4	34.4	32.1	27.5	24.1	21.8	21.8	20.6
55°	18.3	18.3	17.2	17.2	16.0	16.0	16.0	14.9
57.5°	11.5	11.5	12.6	12.6	11.5	11.5	11.5	11.5
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)