

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: P209126

Luminaire Tested: **LDSQ4B20D010 EU4B10208030 4LBSQ1LI**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P209126
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 EU4B10208030 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: 1919.6 lumens
Efficiency: N/A
Efficacy: 92.3 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

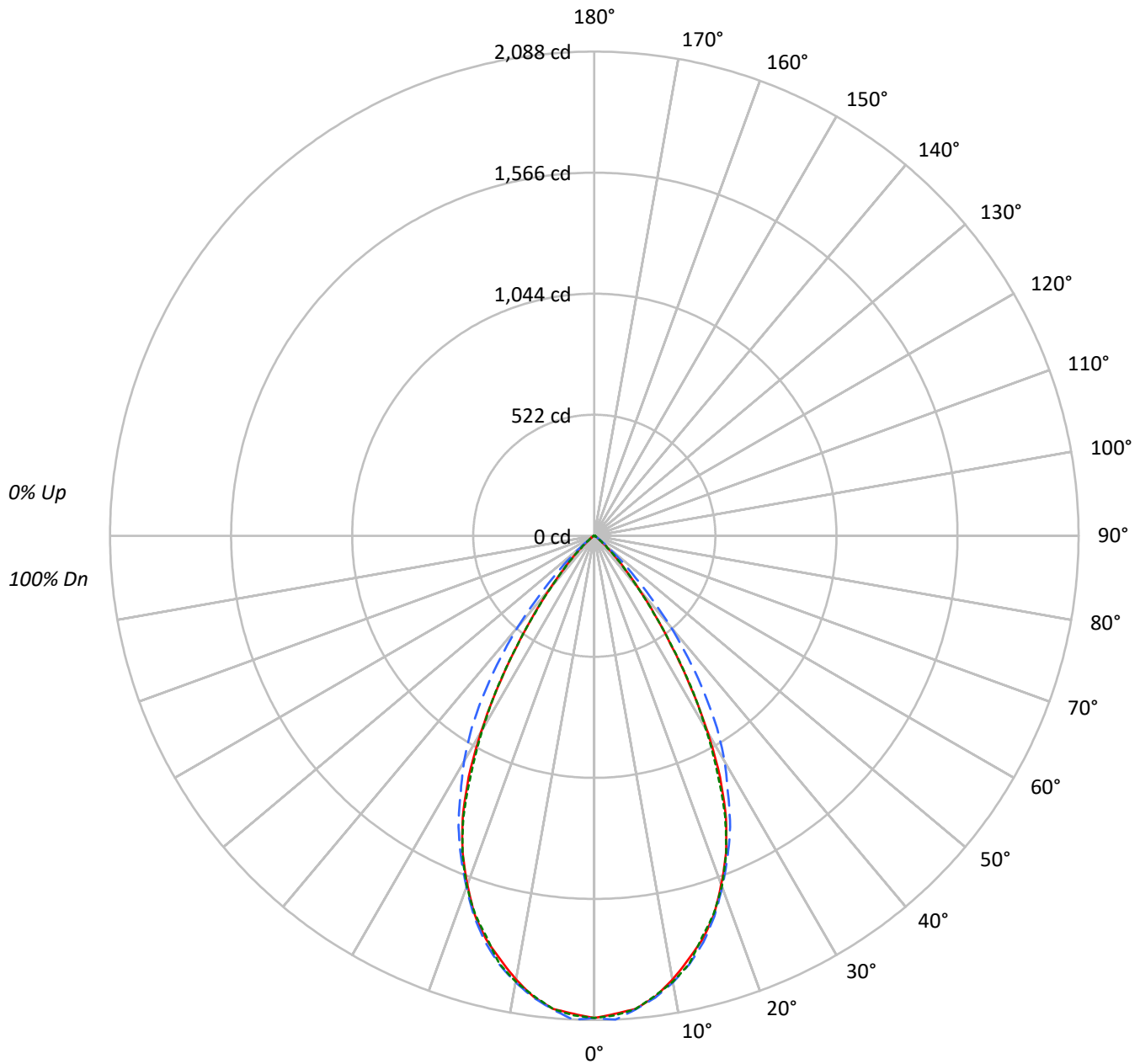
Input Watts (W): 20.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	192.8	10.0
10°-20°	505.2	26.3
20°-30°	617.2	32.2
30°-40°	431.7	22.5
40°-50°	141.5	7.4
50°-60°	22.5	1.2
60°-70°	6.1	0.3
70°-80°	2.0	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°	1315.2	68.5
0°-40°	1746.9	91.0
0°-60°	1910.8	99.5
0°-90°	1919.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1919.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2079	2079	2079	2079	2079	
5°	2048	2048	2050	2038	2048	192
15°	1802	1809	1815	1803	1793	503
25°	1344	1364	1386	1361	1334	603
35°	581	686	826	676	586	371
45°	128	158	232	156	127	107
55°	18	20	22	20	17	18
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°	2079.3	2079.3	2079.3	2079.3	2079.3	2079.3	2079.3	2079.3	2079.3	2079.3	2079.3
2.5°	2063.4	2077.9	2074.0	2083.2	2083.2	2072.7	2075.3	2079.3	2084.5	2088.5	2056.8
5°	2047.6	2060.8	2048.9	2062.1	2054.2	2042.3	2062.1	2051.5	2058.1	2050.2	2055.5
7.5°	2005.3	2026.4	2002.6	2018.5	2013.2	2006.6	2014.5	2011.9	2015.9	2009.2	1994.7
10°	1943.2	1960.4	1944.5	1967.0	1956.4	1949.8	1956.4	1963.0	1961.7	1955.1	1963.0
12.5°	1871.9	1891.7	1883.8	1897.0	1885.1	1885.1	1900.9	1897.0	1898.3	1893.0	1902.2
15°	1801.8	1816.4	1804.5	1821.7	1816.4	1801.8	1808.5	1808.5	1819.0	1815.1	1804.5
17.5°	1714.7	1726.6	1713.3	1717.3	1712.0	1709.4	1737.1	1718.6	1729.2	1721.3	1722.6
20°	1599.7	1605.0	1601.1	1611.6	1605.0	1612.9	1610.3	1607.7	1607.7	1611.6	1602.4
22.5°	1483.5	1483.5	1487.4	1490.1	1495.4	1487.4	1503.3	1490.1	1491.4	1500.7	1498.0
25°	1343.5	1339.5	1348.7	1362.0	1367.2	1360.6	1381.8	1371.2	1379.1	1385.7	1371.2
27.5°	1173.1	1173.1	1182.3	1204.8	1208.7	1216.6	1245.7	1245.7	1256.3	1247.0	1257.6
30°	976.2	990.8	1002.6	1031.7	1041.0	1058.1	1088.5	1103.0	1126.8	1122.9	1117.6
32.5°	774.1	793.9	795.2	825.6	850.7	879.8	920.7	955.1	972.3	984.1	970.9
35°	581.2	593.1	603.7	624.8	667.1	705.4	742.4	787.3	817.7	825.6	813.7
37.5°	425.4	428.0	438.6	458.4	490.1	527.1	572.0	620.9	652.6	664.5	651.3
40°	293.3	295.9	301.2	318.4	344.8	371.2	406.9	457.1	486.1	509.9	492.7
42.5°	196.8	199.5	204.8	218.0	232.5	257.6	285.3	317.0	344.8	355.3	346.1
45°	128.1	128.1	130.8	140.0	148.0	167.8	187.6	207.4	225.9	232.5	225.9
47.5°	75.3	76.6	79.3	85.9	95.1	103.0	117.6	130.8	136.1	141.3	138.7
50°	43.6	43.6	47.6	51.5	58.1	63.4	68.7	74.0	76.6	79.3	76.6
52.5°	23.8	25.1	26.4	27.7	30.4	35.7	39.6	39.6	41.0	42.3	41.0
55°	18.5	18.5	18.5	18.5	19.8	19.8	19.8	21.1	21.1	22.5	21.1
57.5°	13.2	13.2	13.2	14.5	14.5	14.5	13.2	13.2	13.2	13.2	13.2
60°	10.6	10.6	10.6	10.6	10.6	10.6	10.6	9.2	9.2	9.2	9.2
62.5°	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9
65°	5.3	5.3	6.6	6.6	6.6	6.6	6.6	5.3	5.3	5.3	5.3
67.5°	4.0	4.0	4.0	4.0	5.3	5.3	4.0	4.0	4.0	4.0	4.0
70°	2.6	2.6	2.6	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
72.5°	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
75°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
77.5°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
80°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	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°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
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°	2079.3	2079.3	2079.3	2079.3	2079.3	2079.3	2079.3	2079.3
2.5°	2079.3	2056.8	2059.4	2071.3	2064.7	2071.3	2070.0	2070.0
5°	2056.8	2050.2	2039.6	2035.7	2043.6	2060.8	2058.1	2047.6
7.5°	2014.5	1997.4	2009.2	2014.5	2007.9	2018.5	2023.8	2001.3
10°	1964.3	1957.7	1955.1	1957.7	1955.1	1965.7	1952.4	1952.4
12.5°	1893.0	1882.4	1882.4	1898.3	1889.0	1881.1	1891.7	1890.4
15°	1821.7	1800.5	1800.5	1805.8	1809.8	1804.5	1805.8	1792.6
17.5°	1716.0	1709.4	1700.1	1714.7	1718.6	1713.3	1717.3	1710.7
20°	1616.9	1616.9	1599.7	1606.3	1611.6	1615.6	1618.2	1607.7
22.5°	1490.1	1492.7	1480.8	1494.1	1498.0	1484.8	1487.4	1484.8
25°	1373.8	1372.5	1363.3	1358.0	1360.6	1355.3	1354.0	1334.2
27.5°	1245.7	1232.5	1212.7	1218.0	1195.5	1177.0	1177.0	1146.6
30°	1107.0	1084.5	1058.1	1031.7	1011.9	990.8	978.9	961.7
32.5°	944.5	914.1	881.1	845.4	823.0	791.3	774.1	783.4
35°	783.4	738.4	693.5	657.9	623.5	605.0	583.9	586.5
37.5°	627.5	564.1	524.4	486.1	457.1	433.3	424.0	421.4
40°	458.4	408.2	368.6	340.8	321.0	302.5	291.9	288.0
42.5°	317.0	281.4	249.7	227.2	214.0	202.1	196.8	195.5
45°	206.1	184.9	163.8	148.0	137.4	129.5	128.1	126.8
47.5°	129.5	118.9	105.7	93.8	84.5	79.3	75.3	75.3
50°	74.0	70.0	63.4	56.8	51.5	48.9	44.9	43.6
52.5°	39.6	39.6	37.0	31.7	27.7	25.1	25.1	23.8
55°	21.1	21.1	19.8	19.8	18.5	18.5	18.5	17.2
57.5°	13.2	13.2	14.5	14.5	13.2	13.2	13.2	13.2
60°	9.2	10.6	10.6	10.6	10.6	10.6	10.6	10.6
62.5°	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9
65°	5.3	6.6	6.6	6.6	6.6	5.3	5.3	5.3
67.5°	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
70°	4.0	4.0	4.0	4.0	4.0	2.6	2.6	2.6
72.5°	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
75°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
77.5°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
80°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
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°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
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)