

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: P209130

Luminaire Tested: **LDSQ4B20D010 EU4B10209024 4LBSQ1LI**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P209130
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 EU4B10209024 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 2400 K
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1386.9 lumens
Efficiency: N/A
Efficacy: 66.7 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

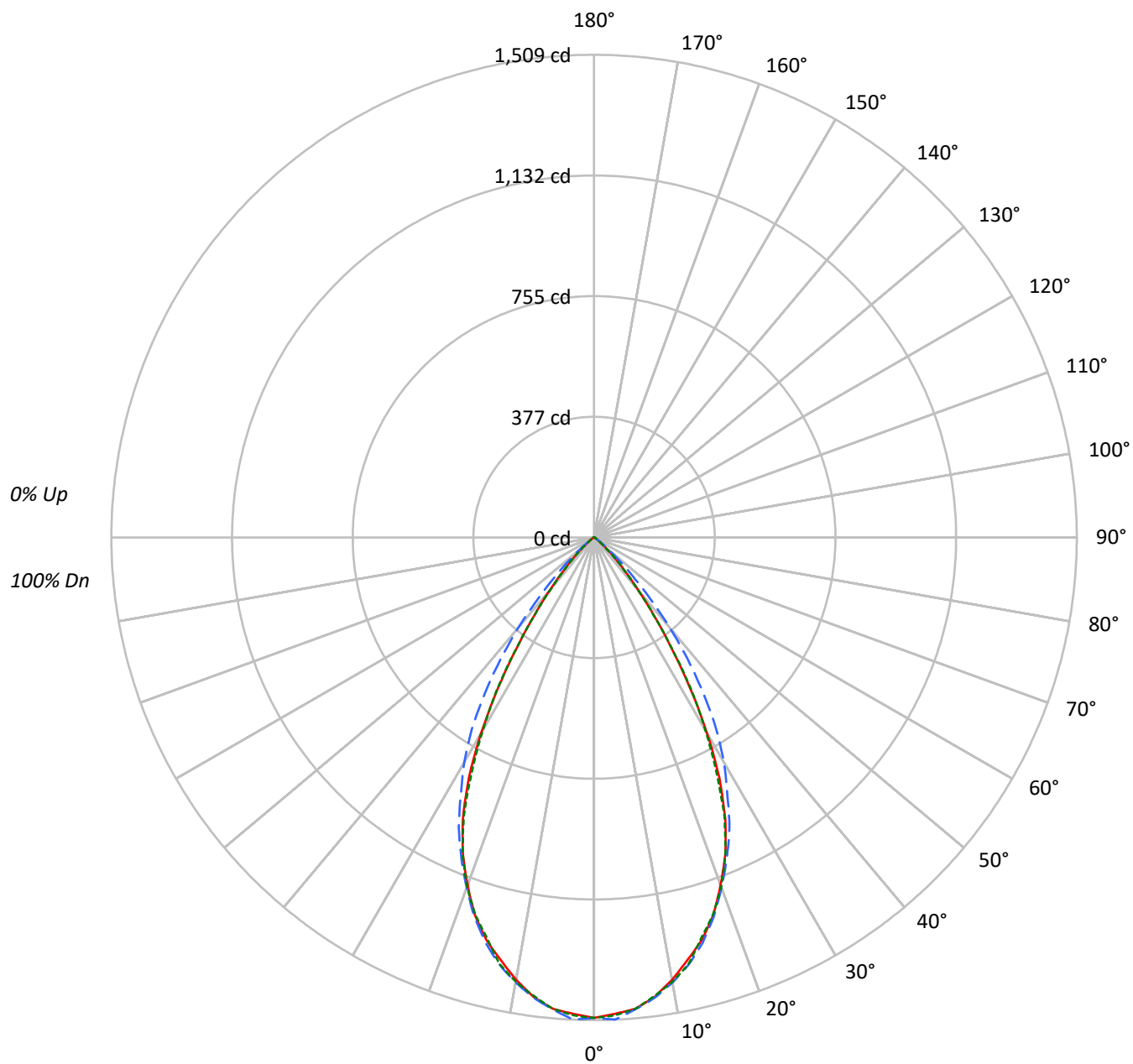
Input Watts (W): 20.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	139.3	10.0
10°-20°	365.0	26.3
20°-30°	445.9	32.2
30°-40°	311.9	22.5
40°-50°	102.2	7.4
50°-60°	16.2	1.2
60°-70°	4.4	0.3
70°-80°	1.5	0.1
80°-90°	0.4	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°	950.2	68.5
0°-40°	1262.1	91.0
0°-60°	1380.6	99.5
0°-90°	1386.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1386.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1502	1502	1502	1502	1502	
5°	1479	1480	1481	1472	1479	139
15°	1302	1307	1311	1303	1295	363
25°	971	985	1001	983	964	436
35°	420	496	596	488	424	268
45°	93	114	168	113	92	78
55°	13	14	16	14	12	13
65°	4	5	4	5	4	4
75°	1	1	1	1	1	1
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°	1502.2	1502.2	1502.2	1502.2	1502.2	1502.2	1502.2	1502.2	1502.2	1502.2	1502.2
2.5°	1490.8	1501.3	1498.4	1505.1	1505.1	1497.5	1499.4	1502.2	1506.0	1508.9	1486.0
5°	1479.3	1488.9	1480.3	1489.8	1484.1	1475.5	1489.8	1482.2	1487.0	1481.2	1485.1
7.5°	1448.8	1464.1	1446.9	1458.3	1454.5	1449.7	1455.5	1453.6	1456.4	1451.6	1441.2
10°	1403.9	1416.3	1404.9	1421.1	1413.5	1408.7	1413.5	1418.2	1417.3	1412.5	1418.2
12.5°	1352.4	1366.7	1361.0	1370.5	1361.9	1361.9	1373.4	1370.5	1371.5	1367.7	1374.3
15°	1301.8	1312.3	1303.7	1316.1	1312.3	1301.8	1306.6	1306.6	1314.2	1311.4	1303.7
17.5°	1238.8	1247.4	1237.9	1240.7	1236.9	1235.0	1255.0	1241.7	1249.3	1243.6	1244.5
20°	1155.8	1159.6	1156.7	1164.4	1159.6	1165.3	1163.4	1161.5	1161.5	1164.4	1157.7
22.5°	1071.8	1071.8	1074.7	1076.6	1080.4	1074.7	1086.1	1076.6	1077.5	1084.2	1082.3
25°	970.6	967.8	974.4	984.0	987.8	983.0	998.3	990.7	996.4	1001.2	990.7
27.5°	847.5	847.5	854.2	870.4	873.3	879.0	900.0	900.0	907.6	901.0	908.6
30°	705.3	715.8	724.4	745.4	752.1	764.5	786.4	796.9	814.1	811.2	807.4
32.5°	559.3	573.6	574.6	596.5	614.6	635.6	665.2	690.0	702.4	711.0	701.5
35°	419.9	428.5	436.2	451.4	482.0	509.7	536.4	568.8	590.8	596.5	587.9
37.5°	307.3	309.2	316.9	331.2	354.1	380.8	413.3	448.6	471.5	480.1	470.5
40°	211.9	213.8	217.6	230.0	249.1	268.2	294.0	330.2	351.2	368.4	356.0
42.5°	142.2	144.1	147.9	157.5	168.0	186.1	206.2	229.1	249.1	256.7	250.1
45°	92.6	92.6	94.5	101.2	106.9	121.2	135.5	149.8	163.2	168.0	163.2
47.5°	54.4	55.4	57.3	62.0	68.7	74.4	84.9	94.5	98.3	102.1	100.2
50°	31.5	31.5	34.4	37.2	42.0	45.8	49.6	53.4	55.4	57.3	55.4
52.5°	17.2	18.1	19.1	20.0	22.0	25.8	28.6	28.6	29.6	30.5	29.6
55°	13.4	13.4	13.4	13.4	14.3	14.3	14.3	15.3	15.3	16.2	15.3
57.5°	9.5	9.5	9.5	10.5	10.5	10.5	9.5	9.5	9.5	9.5	9.5
60°	7.6	7.6	7.6	7.6	7.6	7.6	7.6	6.7	6.7	6.7	6.7
62.5°	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7
65°	3.8	3.8	4.8	4.8	4.8	4.8	4.8	3.8	3.8	3.8	3.8
67.5°	2.9	2.9	2.9	2.9	3.8	3.8	2.9	2.9	2.9	2.9	2.9
70°	1.9	1.9	1.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
72.5°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
75°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
77.5°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
80°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	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°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
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°	1502.2	1502.2	1502.2	1502.2	1502.2	1502.2	1502.2	1502.2
2.5°	1502.2	1486.0	1487.9	1496.5	1491.7	1496.5	1495.6	1495.6
5°	1486.0	1481.2	1473.6	1470.7	1476.5	1488.9	1487.0	1479.3
7.5°	1455.5	1443.1	1451.6	1455.5	1450.7	1458.3	1462.1	1445.9
10°	1419.2	1414.4	1412.5	1414.4	1412.5	1420.2	1410.6	1410.6
12.5°	1367.7	1360.0	1360.0	1371.5	1364.8	1359.1	1366.7	1365.8
15°	1316.1	1300.9	1300.9	1304.7	1307.5	1303.7	1304.7	1295.1
17.5°	1239.8	1235.0	1228.3	1238.8	1241.7	1237.9	1240.7	1236.0
20°	1168.2	1168.2	1155.8	1160.6	1164.4	1167.2	1169.1	1161.5
22.5°	1076.6	1078.5	1069.9	1079.4	1082.3	1072.8	1074.7	1072.8
25°	992.6	991.6	984.9	981.1	983.0	979.2	978.3	963.9
27.5°	900.0	890.5	876.1	880.0	863.7	850.4	850.4	828.4
30°	799.8	783.6	764.5	745.4	731.1	715.8	707.2	694.8
32.5°	682.4	660.4	636.6	610.8	594.6	571.7	559.3	566.0
35°	566.0	533.5	501.1	475.3	450.5	437.1	421.8	423.8
37.5°	453.3	407.5	378.9	351.2	330.2	313.0	306.4	304.5
40°	331.2	294.9	266.3	246.2	231.9	218.6	210.9	208.1
42.5°	229.1	203.3	180.4	164.2	154.6	146.0	142.2	141.3
45°	148.9	133.6	118.3	106.9	99.3	93.5	92.6	91.6
47.5°	93.5	85.9	76.4	67.8	61.1	57.3	54.4	54.4
50°	53.4	50.6	45.8	41.0	37.2	35.3	32.4	31.5
52.5°	28.6	28.6	26.7	22.9	20.0	18.1	18.1	17.2
55°	15.3	15.3	14.3	14.3	13.4	13.4	13.4	12.4
57.5°	9.5	9.5	10.5	10.5	9.5	9.5	9.5	9.5
60°	6.7	7.6	7.6	7.6	7.6	7.6	7.6	7.6
62.5°	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7
65°	3.8	4.8	4.8	4.8	4.8	3.8	3.8	3.8
67.5°	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
70°	2.9	2.9	2.9	2.9	2.9	1.9	1.9	1.9
72.5°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
75°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
77.5°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
80°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
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°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
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)