

Scaled data based on original data using  
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State  
Lighting Products

Test Report Prepared for  
Cooper Lighting Solutions  
(formerly Eaton)

Brand: NEO-RAY

Report Number: P199494

Luminaire Tested: **S124-DIW-U2-2-40-0048-1D-UDD-1-NA-W**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P199494  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (P28062 P28061)  
Test Lab: INNOVATION CENTER(G2)  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S124-DIW-U2-2-40-0048-1D-UDD-1-NA-W  
Description: DEFINE 4-INCH DIRECT/INDIRECT WALL LED LUMINAIRE  
UPLIGHT LL2-4000K, NO LENS  
DOWNLIGHT LL2-4000K, SATIN WHITE DIFFUSER  
Light Source: -  
757G  
Ballast/Driver: ELECTRONIC DRIVERS

**Summary**

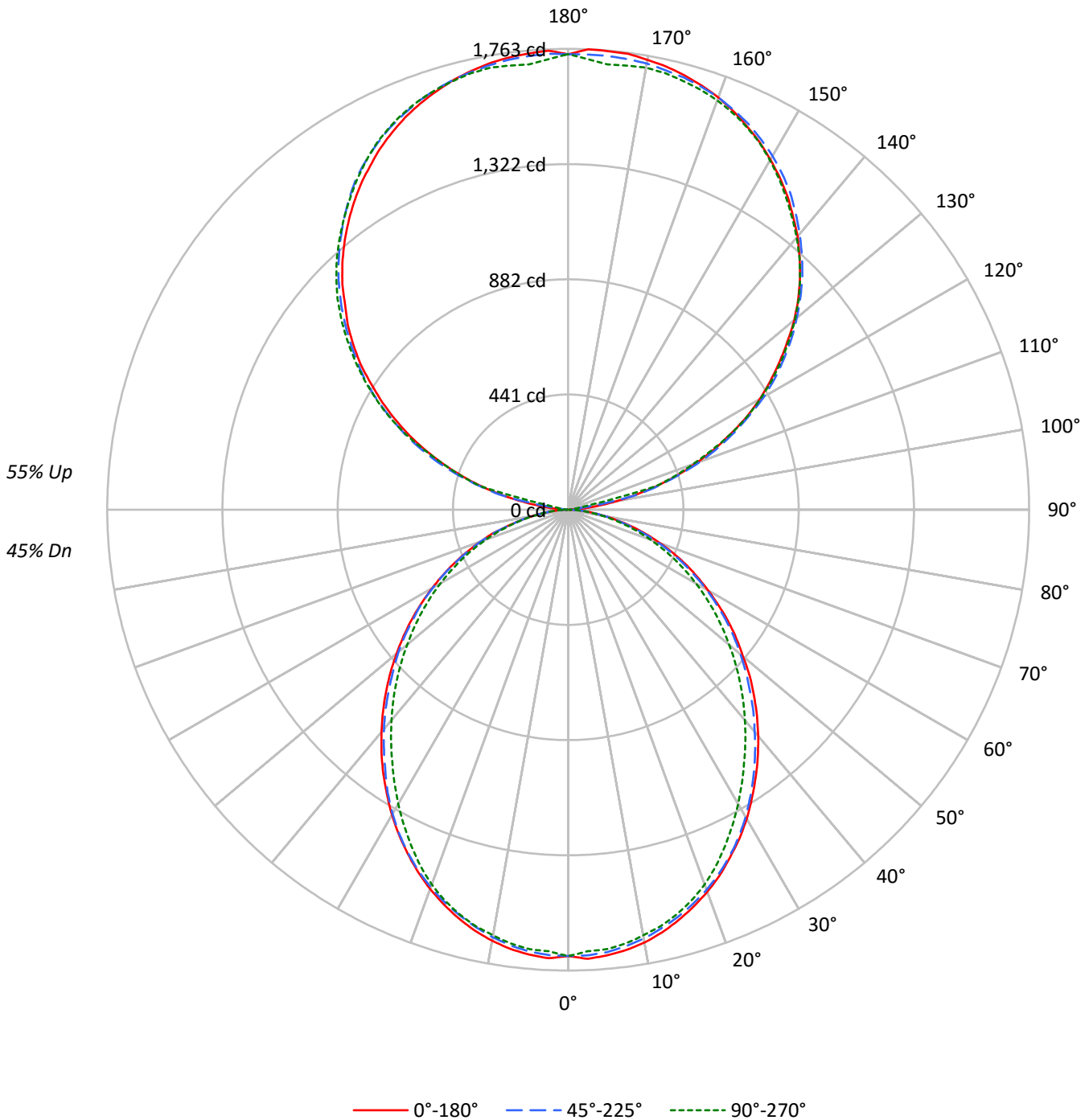
Lumens per Lamp: N/A  
Luminaire Lumens: 9457.4 lumens  
Efficiency: N/A  
Efficacy: 117.5 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.14 / 1.28  
Luminous Opening: Rectangular w/ Sides (W: 0.33' x L: 4.08' x H: 0.38')  
CIE Type: General Diffuse

Input Watts (W): 80.5  
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	50	30	10	50	30	10	0		
RCR																										
0	106	106	106	106	97	97	97	97	80	80	80	65	65	65	51	51	51	45					45			
1	97	92	89	85	88	85	82	79	71	68	66	58	56	54	45	44	43	38					38			
2	88	81	75	70	80	74	69	65	62	58	55	51	48	46	40	38	37	32					32			
3	80	71	64	58	73	65	59	54	55	50	46	45	41	39	36	33	31	27					27			
4	74	63	55	49	67	58	51	46	49	43	39	40	36	33	32	29	27	23					23			
5	68	56	48	42	62	52	45	39	43	38	34	36	32	29	29	26	24	20					20			
6	62	50	42	37	57	46	39	34	39	34	30	32	28	25	26	23	21	18					18			
7	57	45	37	32	53	42	35	30	36	30	26	29	25	22	24	21	19	16					16			
8	53	41	34	28	49	38	31	27	32	27	23	27	23	20	22	19	17	14					14			
9	50	38	30	25	45	35	28	24	30	24	21	25	21	18	20	17	15	13					13			
10	46	34	27	23	43	32	26	21	27	22	19	23	19	16	19	16	14	12					12			

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°
0°	13503	13503	13503
5°	13478	12198	13454
10°	13289	11081	13232
15°	13000	10085	12934
20°	12668	9110	12576
25°	12265	8124	12153
30°	11843	7195	11691
35°	11340	6338	11180
40°	10834	5581	10646
45°	10288	4884	10088
50°	9673	4226	9501
55°	9122	3615	8883
60°	8437	3029	8198
65°	7762	2457	7456
70°	6900	1891	6575
75°	5803	1329	5379
80°	4360	809	4082
85°	2559	358	2421



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	160.7	1.7
10°-20°	453.2	4.8
20°-30°	663.9	7.0
30°-40°	760.9	8.0
40°-50°	750.1	7.9
50°-60°	646.6	6.8
60°-70°	471.4	5.0
70°-80°	257.1	2.7
80°-90°	67.5	0.7
90°-100°	44.5	0.5
100°-110°	352.2	3.7
110°-120°	681.6	7.2
120°-130°	886.3	9.4
130°-140°	962.1	10.2
140°-150°	910.4	9.6
150°-160°	742.7	7.9
160°-170°	480.7	5.1
170°-180°	165.4	1.7
0°-30°	1277.8	13.5
0°-40°	2038.7	21.6
0°-60°	3435.4	36.3
0°-90°	4231.4	44.7
90°-120°	1078.3	11.4
90°-150°	3837.2	40.6
90°-180°	5226.0	55.3
0°-180°	9457.4	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1707	1707	1707	1707	1707	
5°	1712	1699	1688	1697	1708	162
15°	1627	1614	1603	1606	1619	458
25°	1466	1462	1419	1449	1452	675
35°	1250	1237	1174	1219	1232	782
45°	1004	984	928	967	985	775
55°	748	736	683	720	729	668
65°	496	485	448	473	477	491
75°	255	246	226	235	236	271
85°	58	59	55	56	55	66
90°	2	4	3	4	2	7
95°	61	16	16	16	55	77
105°	351	360	346	352	341	371
115°	684	702	688	693	667	678
125°	987	1008	995	985	969	883
135°	1253	1267	1254	1242	1221	966
145°	1463	1480	1454	1459	1431	915
155°	1619	1629	1616	1612	1593	747
165°	1720	1712	1698	1702	1701	486
175°	1761	1742	1710	1742	1752	168
180°	1742	1742	1742	1742	1742	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
0°	1707.4	1707.4	1707.4	1707.4	1707.4	1707.4	1707.4	1707.4	1707.4
2.5°	1719.8	1700.2	1706.4	1702.2	1690.9	1702.2	1705.3	1699.1	1717.7
5°	1711.5	1692.9	1699.1	1692.9	1687.8	1691.9	1697.1	1689.8	1708.4
7.5°	1699.1	1679.5	1684.7	1679.5	1674.4	1678.5	1681.6	1675.4	1695.0
10°	1681.6	1660.9	1666.1	1659.9	1653.7	1657.8	1660.9	1654.7	1674.4
12.5°	1656.8	1637.2	1641.3	1637.2	1632.0	1633.1	1635.1	1628.9	1649.6
15°	1626.9	1607.3	1614.5	1610.4	1603.1	1607.3	1606.2	1599.0	1618.6
17.5°	1592.8	1574.2	1582.5	1578.4	1568.0	1574.2	1574.2	1562.9	1583.5
20°	1555.6	1536.0	1547.4	1537.1	1525.7	1531.9	1537.1	1523.6	1544.3
22.5°	1514.4	1493.7	1507.1	1488.5	1476.2	1483.4	1495.8	1481.3	1499.9
25°	1465.8	1449.3	1461.7	1435.9	1419.4	1429.7	1449.3	1434.9	1452.4
27.5°	1418.4	1401.8	1412.2	1383.3	1360.5	1374.0	1398.7	1386.4	1401.8
30°	1365.7	1352.3	1357.4	1323.4	1299.6	1314.1	1343.0	1335.8	1348.2
32.5°	1307.9	1297.6	1297.6	1261.4	1236.7	1253.2	1284.2	1282.1	1290.3
35°	1250.1	1243.9	1236.7	1197.4	1173.7	1189.2	1219.1	1227.4	1232.5
37.5°	1191.2	1187.1	1173.7	1135.5	1112.8	1129.3	1157.2	1169.6	1172.7
40°	1130.3	1128.3	1109.7	1073.6	1050.9	1067.4	1096.3	1111.8	1110.7
42.5°	1068.4	1070.5	1047.8	1012.7	990.0	1006.5	1033.3	1054.0	1048.8
45°	1004.4	1010.6	983.8	951.8	928.0	945.6	967.2	993.1	984.8
47.5°	942.5	949.7	921.8	888.8	866.1	884.7	906.3	934.2	921.8
50°	872.3	886.7	859.9	826.9	804.1	821.7	847.5	871.2	856.8
52.5°	811.4	821.7	798.0	766.0	744.3	758.7	784.5	808.3	792.8
55°	748.4	759.8	736.0	704.0	683.4	697.8	720.5	744.3	728.8
57.5°	682.3	693.7	672.0	643.1	623.5	639.0	662.7	679.2	664.8
60°	618.3	632.8	609.0	581.2	564.7	577.0	595.6	615.2	600.8
62.5°	556.4	569.8	547.1	521.3	505.8	517.2	536.8	552.3	538.8
65°	496.5	504.8	485.2	461.4	448.0	455.2	472.8	490.3	476.9
67.5°	435.6	443.9	424.3	403.6	390.2	397.4	411.9	428.4	416.0
70°	373.7	380.9	364.4	345.8	334.5	341.7	355.1	367.5	356.1
72.5°	314.8	320.0	304.5	290.1	281.8	287.0	296.3	307.6	302.5
75°	255.0	261.2	245.7	233.3	226.1	228.1	235.4	244.7	236.4
77.5°	198.2	204.4	192.0	182.7	178.6	179.6	184.8	192.0	181.7
80°	145.6	150.7	143.5	135.2	131.1	133.2	136.3	140.4	136.3
82.5°	98.1	103.2	98.1	92.9	89.8	91.9	92.9	95.0	91.9
85°	57.8	61.9	58.8	55.7	54.7	54.7	55.7	57.8	54.7
87.5°	25.8	28.9	26.8	24.8	21.7	22.7	23.7	25.8	23.7
90°	2.1	5.2	4.1	3.1	3.1	3.1	4.1	5.2	2.1
92.5°	19.6	10.3	10.3	10.3	10.3	10.3	10.3	11.4	13.4
95°	60.9	39.2	15.5	16.5	16.5	16.5	16.5	26.8	54.7
97.5°	118.7	138.3	29.9	19.6	19.6	19.6	29.9	131.1	110.5
100°	187.9	206.5	150.7	47.5	35.1	44.4	132.1	195.1	178.6
102.5°	265.3	289.0	277.7	155.9	89.8	133.2	269.4	276.7	258.1
105°	351.0	371.6	360.3	365.4	345.8	352.0	352.0	356.1	340.7
107.5°	435.6	453.2	447.0	442.8	427.4	431.5	441.8	439.8	422.2
110°	520.3	537.8	537.8	524.4	505.8	513.0	529.6	519.2	504.8



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
112.5°	604.9	618.3	621.4	614.2	592.5	602.9	612.1	595.6	586.3
115°	684.4	704.0	701.9	703.0	687.5	687.5	692.7	680.3	666.9
117.5°	770.1	784.5	781.4	782.5	772.1	768.0	767.0	758.7	744.3
120°	845.4	862.0	864.0	856.8	849.6	841.3	846.5	835.1	819.6
122.5°	916.7	935.2	938.3	931.1	923.9	914.6	918.7	906.3	891.9
125°	986.9	1007.5	1007.5	1002.3	995.1	985.8	984.8	974.5	969.3
127.5°	1057.1	1080.8	1076.7	1071.5	1065.3	1055.0	1049.8	1043.6	1035.4
130°	1128.3	1144.8	1140.7	1136.5	1132.4	1120.0	1115.9	1109.7	1100.4
132.5°	1193.3	1202.6	1204.7	1196.4	1196.4	1180.9	1179.9	1172.7	1156.2
135°	1253.2	1262.5	1266.6	1254.2	1254.2	1238.7	1241.8	1231.5	1221.2
137.5°	1310.0	1317.2	1322.3	1307.9	1308.9	1294.5	1299.6	1282.1	1278.0
140°	1364.7	1367.8	1377.1	1361.6	1359.5	1347.1	1354.3	1336.8	1331.6
142.5°	1413.2	1417.3	1428.7	1412.2	1407.0	1397.7	1407.0	1385.3	1382.2
145°	1462.7	1463.8	1480.3	1460.7	1454.5	1447.3	1458.6	1432.8	1430.7
147.5°	1506.1	1504.0	1523.6	1507.1	1500.9	1493.7	1506.1	1476.2	1476.2
150°	1546.4	1544.3	1562.9	1549.5	1543.3	1537.1	1544.3	1516.4	1516.4
152.5°	1585.6	1578.4	1596.9	1585.6	1583.5	1574.2	1580.4	1553.6	1557.7
155°	1618.6	1611.4	1628.9	1619.6	1615.5	1608.3	1612.4	1586.6	1592.8
157.5°	1650.6	1639.3	1654.7	1650.6	1643.4	1639.3	1639.3	1618.6	1625.8
160°	1678.5	1665.1	1678.5	1672.3	1666.1	1660.9	1665.1	1644.4	1653.7
162.5°	1701.2	1688.8	1696.0	1687.8	1684.7	1676.4	1684.7	1668.2	1678.5
165°	1719.8	1706.4	1711.5	1700.2	1698.1	1691.9	1702.2	1690.9	1701.2
167.5°	1736.3	1723.9	1721.8	1710.5	1710.5	1702.2	1714.6	1708.4	1718.7
170°	1747.6	1737.3	1733.2	1716.7	1716.7	1709.5	1727.0	1721.8	1734.2
172.5°	1759.0	1745.6	1738.4	1720.8	1713.6	1714.6	1736.3	1732.2	1744.6
175°	1761.1	1750.7	1742.5	1723.9	1710.5	1719.8	1741.5	1742.5	1751.8
177.5°	1763.1	1752.8	1742.5	1727.0	1724.9	1722.9	1745.6	1744.6	1758.0
180°	1742.5	1742.5	1742.5	1742.5	1742.5	1742.5	1742.5	1742.5	1742.5

(END OF REPORT)