

Scaled data based on original data using
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Test Report Prepared for
Cooper Lighting Solutions

Brand: NEO-RAY

Report Number: P646654

Luminaire Tested: S123DR-S775D930-X4F0-XX-UDD-G-W

Issue Date: 3/20/2023

Test Information

Test Method: LM-79-2019
Report Number: P646654
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2301-905-1)
Test Lab: INNOVATION CENTER
Issue Date: 3/20/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: S123DR-S775D930-X4F0-XX-UDD-G-W
Description: DEFINE 3 DIRECT RECESSED WITH WALL GRAZE FLUSH OPTIC
STANDARD LIGHT ENGINE
Light Source: 3000K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2823.0 lumens
Efficiency: N/A
Efficacy: 109.8 lumens/watt
Spacing Criteria (0/90/45): 0.65 / 1.19 / 0.89
Luminous Opening: Rectangular (W 4' x L: 0.22' x H: 0')
CIE Type: Direct

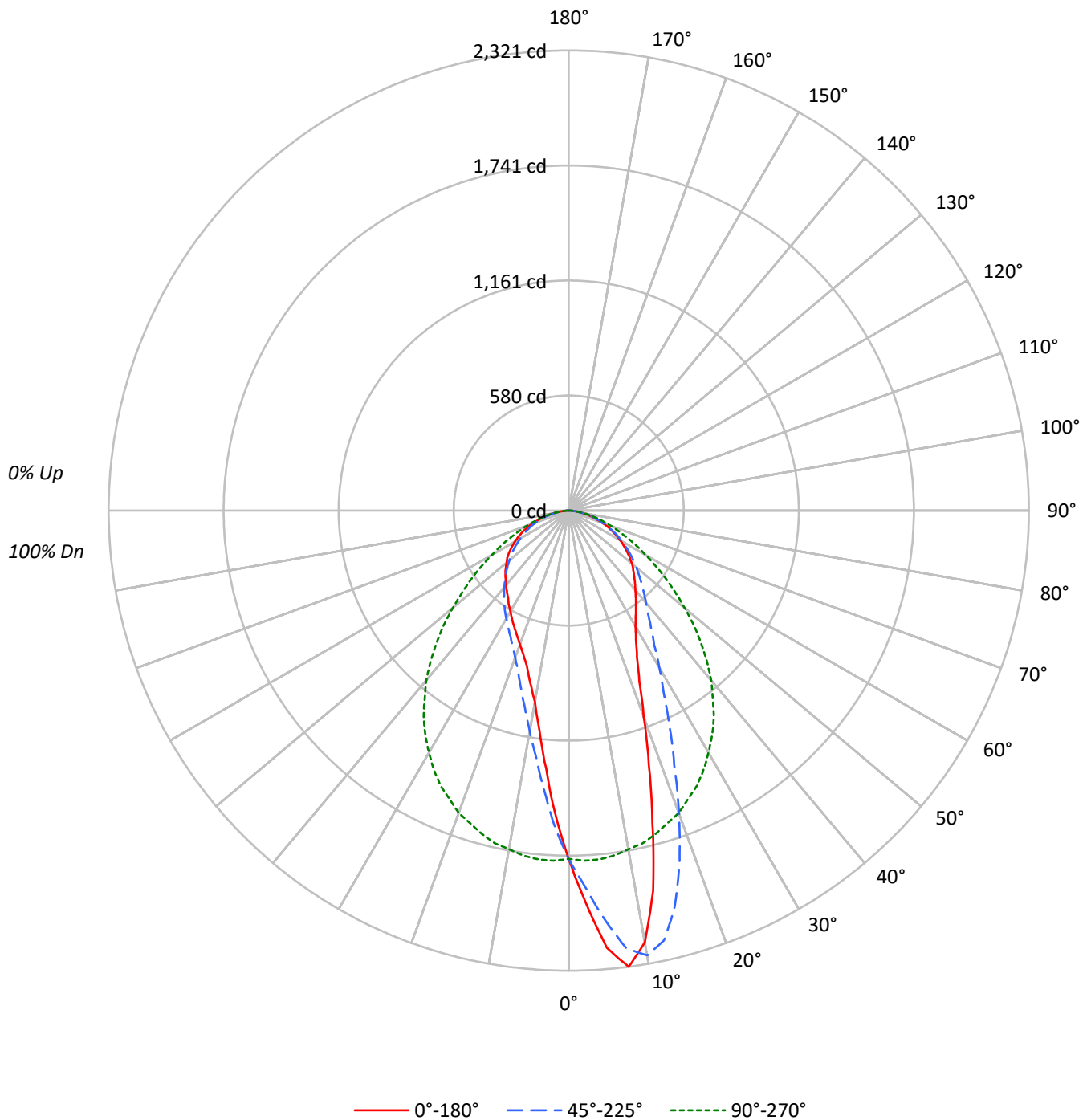
Input Watts (W): 25.7
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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
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	110	106	102	98	107	103	100	97	99	96	94	95	93	91	92	90	88	86		
2	101	94	88	82	99	92	86	82	88	84	80	85	81	78	82	79	76	74		
3	93	84	76	70	91	82	75	70	79	73	69	77	72	67	74	70	66	64		
4	86	75	67	61	84	74	67	61	72	65	60	69	64	59	67	62	58	56		
5	80	68	60	54	78	67	59	54	65	58	53	63	57	52	61	56	52	50		
6	74	62	54	48	73	61	53	48	60	53	47	58	52	47	56	51	47	45		
7	70	57	49	43	68	56	49	43	55	48	43	53	47	43	52	47	42	40		
8	65	53	45	39	64	52	44	39	51	44	39	49	43	39	48	43	39	37		
9	61	49	41	36	60	48	41	36	47	40	36	46	40	36	45	40	35	34		
10	58	45	38	33	57	45	38	33	44	37	33	43	37	33	42	37	33	31		

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	21170	21170	21170	21170	21170
5°	26773	25037	21359	17129	15817
10°	27033	27870	21217	13835	11990
15°	20360	25792	21073	11594	10140
20°	14187	20856	20803	10109	9210
25°	10818	15999	20345	9268	8639
30°	9358	12717	19613	8757	8178
35°	8683	10650	18768	8346	7855
40°	8220	9529	17582	7964	7745
45°	7948	8849	16074	7627	7697
50°	7809	8360	14289	7335	7657
55°	7518	7897	12537	7073	7691
60°	7249	7466	10806	6817	7564
65°	6811	6997	9320	6532	7416
70°	6292	6493	7927	6176	6979
75°	5694	5884	6792	5656	6378
80°	4698	5038	5378	4920	5378
85°	3719	4065	3940	4286	4286

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 80°

Vertical Angle: 45°

Luminance: 18352 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	166.1	5.9
10°-20°	413.3	14.6
20°-30°	489.2	17.3
30°-40°	491.6	17.4
40°-50°	450.9	16.0
50°-60°	372.2	13.2
60°-70°	263.3	9.3
70°-80°	140.6	5.0
80°-90°	35.7	1.3
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°	1068.6	37.9
0°-40°	1560.3	55.3
0°-60°	2383.3	84.4
0°-90°	2823.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2823.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1757	1757	1757	1757	1757	
5°	2214	2070	1766	1416	1308	211
15°	1632	2068	1689	929	813	451
25°	814	1203	1530	697	650	384
35°	590	724	1276	567	534	371
45°	466	519	943	448	452	361
55°	358	376	597	337	366	320
65°	239	245	327	229	260	237
75°	122	126	146	122	137	129
85°	27	29	28	31	31	32
90°	0	0	0	0	0	

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CANDELA DISTRIBUTION (FULL):

	0°	10°	20°	22.5°	30°	40°	45°	50°	60°	67.5°	70°
0°	1757.0	1757.0	1757.0	1757.0	1757.0	1757.0	1757.0	1757.0	1757.0	1757.0	1757.0
2.5°	1980.4	1976.3	1955.9	1942.9	1946.1	1916.8	1898.8	1884.2	1874.4	1850.7	1838.5
5°	2213.5	2225.0	2211.9	2205.4	2172.0	2119.0	2070.0	2059.4	2013.8	1957.5	1938.0
7.5°	2321.2	2327.7	2319.5	2319.5	2308.9	2261.6	2227.4	2200.5	2122.2	2049.7	2016.2
10°	2209.5	2224.1	2255.9	2270.6	2291.8	2285.3	2277.9	2267.3	2214.4	2130.4	2092.1
12.5°	1964.1	1982.0	2045.6	2054.6	2127.1	2197.2	2220.1	2246.1	2251.0	2180.1	2138.5
15°	1632.2	1682.0	1739.8	1767.6	1859.7	2007.3	2067.6	2138.5	2222.5	2193.2	2160.5
17.5°	1344.4	1363.2	1425.1	1483.8	1576.0	1746.4	1858.1	1964.1	2144.2	2173.6	2153.2
20°	1106.4	1123.5	1205.0	1200.9	1323.2	1514.8	1626.5	1748.8	2014.6	2110.0	2105.9
22.5°	929.4	956.3	1002.0	1027.3	1115.3	1285.7	1391.7	1544.2	1867.0	2017.9	2034.2
25°	813.7	833.2	861.0	883.0	951.5	1091.7	1203.4	1328.9	1681.1	1897.2	1938.0
27.5°	734.6	742.7	770.5	783.5	829.2	949.8	1036.2	1151.2	1509.1	1761.9	1818.9
30°	672.6	678.3	702.8	706.9	742.7	830.0	914.0	1007.7	1341.2	1622.4	1687.7
32.5°	629.4	633.5	652.2	653.9	680.8	744.4	803.1	891.1	1182.2	1473.2	1554.0
35°	590.3	592.7	606.6	610.7	627.8	675.9	724.0	791.7	1055.8	1338.7	1427.6
37.5°	556.0	559.3	567.4	572.3	586.2	624.5	657.1	713.4	934.3	1198.5	1297.1
40°	522.6	528.3	534.0	534.0	549.5	578.9	605.8	652.2	830.0	1076.2	1163.4
42.5°	494.1	499.8	502.2	503.0	511.2	538.1	560.9	592.7	750.9	967.8	1053.4
45°	466.4	468.8	471.2	472.9	478.6	502.2	519.3	549.5	675.9	867.5	950.6
47.5°	441.1	441.1	442.7	445.2	449.2	466.4	481.0	503.0	611.5	777.8	846.3
50°	416.6	416.6	414.2	415.8	418.2	431.3	446.0	463.9	551.1	695.5	756.6
52.5°	387.3	387.3	388.1	385.6	388.1	399.5	410.9	428.8	499.8	619.6	671.8
55°	357.9	361.2	358.7	357.1	360.4	367.7	375.9	391.3	451.7	559.3	600.9
57.5°	328.6	330.2	329.4	331.8	330.2	336.7	344.1	354.7	408.5	491.6	530.8
60°	300.8	300.8	299.2	300.8	300.8	304.1	309.8	320.4	364.4	433.7	466.4
62.5°	269.9	270.7	271.5	270.7	269.9	273.9	278.8	286.2	326.1	377.5	401.9
65°	238.9	239.7	242.1	241.3	240.5	244.6	245.4	253.6	283.7	327.8	345.7
67.5°	211.2	209.5	210.3	212.0	212.8	213.6	215.2	223.4	244.6	280.5	295.1
70°	178.6	180.2	179.4	181.8	180.2	182.6	184.3	190.0	210.3	234.0	243.8
72.5°	149.2	150.0	150.0	152.5	151.6	154.1	155.7	158.2	172.8	194.0	198.1
75°	122.3	122.3	123.9	124.7	124.7	124.7	126.4	128.0	140.2	153.3	157.4
77.5°	92.9	97.0	96.2	97.0	97.8	100.3	98.7	101.9	109.3	116.6	119.0
80°	67.7	67.7	68.5	69.3	70.9	72.6	72.6	75.8	79.1	83.2	85.6
82.5°	43.2	44.0	46.5	47.3	48.1	50.5	50.5	50.5	54.6	56.3	56.3
85°	26.9	25.3	26.9	27.7	28.5	29.4	29.4	31.0	31.8	32.6	32.6
87.5°	13.0	13.0	13.0	13.0	13.9	13.9	13.9	13.9	14.7	14.7	14.7
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):

	80°	90°	100°	110°	112.5°	120°	130°	135°	140°	150°	157.5°
0°	1757.0	1757.0	1757.0	1757.0	1757.0	1757.0	1757.0	1757.0	1757.0	1757.0	1757.0
2.5°	1797.7	1767.6	1722.7	1686.0	1687.7	1654.2	1629.8	1598.0	1588.2	1578.4	1565.4
5°	1835.2	1765.9	1673.0	1598.8	1576.0	1520.5	1450.4	1416.2	1395.8	1359.9	1346.1
7.5°	1881.7	1754.5	1612.7	1496.9	1471.6	1379.5	1296.3	1255.6	1217.2	1192.0	1161.0
10°	1911.9	1734.1	1551.5	1398.2	1373.8	1268.6	1160.2	1130.8	1082.7	1051.7	1022.4
12.5°	1934.7	1718.7	1488.7	1310.2	1270.2	1168.3	1059.1	1019.1	984.1	939.2	918.0
15°	1955.1	1689.3	1424.3	1218.1	1176.5	1066.4	965.3	929.4	897.6	858.5	839.8
17.5°	1947.7	1653.4	1353.4	1136.5	1094.9	986.5	889.5	848.7	827.5	793.3	780.2
20°	1938.8	1622.4	1286.5	1059.1	1013.4	912.3	817.7	788.4	767.2	745.2	733.8
22.5°	1910.2	1573.5	1218.9	988.1	944.9	843.8	763.1	738.7	722.4	706.9	697.1
25°	1862.1	1530.3	1152.8	917.2	883.0	788.4	719.9	697.1	686.5	671.0	662.0
27.5°	1802.6	1473.2	1086.8	859.3	820.2	736.2	677.5	662.8	651.4	639.2	630.2
30°	1727.6	1409.7	1022.4	803.1	767.2	693.0	642.5	629.4	618.8	606.6	596.0
32.5°	1632.2	1345.2	962.1	750.9	720.7	656.3	609.8	599.2	590.3	575.6	569.9
35°	1525.4	1275.9	902.5	701.2	672.6	616.4	578.0	567.4	558.5	546.3	541.4
37.5°	1417.0	1193.6	843.8	658.8	633.5	582.9	546.3	535.7	527.5	516.9	514.5
40°	1302.0	1117.8	785.9	615.6	593.5	550.3	514.5	506.3	498.1	491.6	490.0
42.5°	1186.3	1030.5	735.4	579.7	556.0	516.1	483.5	474.5	469.6	466.4	467.2
45°	1077.0	943.3	683.2	538.1	521.8	485.1	454.9	447.6	443.5	441.1	444.3
47.5°	958.8	854.4	634.3	503.0	486.7	454.1	425.6	419.1	417.4	416.6	422.3
50°	854.4	762.3	581.3	467.2	453.3	419.9	397.1	391.3	389.7	392.2	400.3
52.5°	755.8	676.7	533.2	433.7	419.9	389.7	368.5	364.4	363.6	369.3	377.5
55°	657.9	596.8	481.0	397.1	383.2	357.1	340.8	336.7	335.9	347.3	354.7
57.5°	574.8	519.3	432.1	362.0	351.4	326.9	312.3	309.0	311.4	322.0	329.4
60°	493.3	448.4	387.3	324.5	316.3	295.1	283.7	282.9	285.4	297.6	304.9
62.5°	419.9	385.6	339.2	290.2	284.5	265.8	255.2	256.8	259.3	271.5	278.0
65°	357.1	326.9	291.9	256.0	248.7	235.6	228.3	229.1	234.0	244.6	251.1
67.5°	296.0	271.5	251.9	223.4	217.7	206.3	200.6	203.8	206.3	216.9	223.4
70°	244.6	225.0	210.3	189.1	185.1	175.3	171.2	175.3	177.7	186.7	194.9
72.5°	196.5	184.3	172.8	157.4	153.3	146.8	145.9	147.6	151.6	160.6	163.9
75°	152.5	145.9	136.2	126.4	123.9	120.7	119.8	121.5	125.6	130.4	133.7
77.5°	115.8	110.1	102.7	98.7	95.4	93.8	94.6	97.0	98.7	103.5	106.0
80°	84.0	77.5	75.8	70.1	69.3	68.5	70.1	70.9	73.4	76.6	78.3
82.5°	55.4	50.5	48.9	48.1	47.3	46.5	48.9	49.7	51.4	53.8	54.6
85°	30.2	28.5	28.5	27.7	28.5	30.2	30.2	31.0	31.0	31.8	31.0
87.5°	13.9	12.2	13.0	13.0	13.0	13.9	13.9	14.7	14.7	14.7	13.9
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):

	160°	170°	180°
0°	1757.0	1757.0	1757.0
2.5°	1564.6	1558.9	1536.0
5°	1333.8	1314.3	1307.7
7.5°	1157.7	1156.1	1121.9
10°	1008.5	1011.0	980.0
12.5°	914.8	894.4	891.9
15°	834.9	816.1	812.9
17.5°	775.3	763.9	760.7
20°	730.5	724.0	718.3
22.5°	694.6	686.5	681.6
25°	658.8	651.4	649.8
27.5°	627.8	618.8	618.8
30°	596.0	590.3	587.8
32.5°	567.4	562.6	562.6
35°	539.7	537.3	534.0
37.5°	514.5	514.5	512.8
40°	490.0	492.4	492.4
42.5°	468.8	471.2	471.2
45°	446.0	450.0	451.7
47.5°	423.1	429.7	431.3
50°	402.8	407.6	408.5
52.5°	380.7	386.5	390.5
55°	357.9	363.6	366.1
57.5°	333.5	339.2	340.0
60°	306.6	312.3	313.9
62.5°	282.1	285.4	287.0
65°	251.9	256.8	260.1
67.5°	224.2	228.3	228.3
70°	194.0	195.7	198.1
72.5°	165.5	166.3	166.3
75°	134.5	136.2	137.0
77.5°	106.0	106.8	106.8
80°	78.3	77.5	77.5
82.5°	54.6	52.2	52.2
85°	31.0	30.2	31.0
87.5°	13.9	13.9	13.9
90°	0.0	0.0	0.0

(END OF REPORT)