

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: P646653

Luminaire Tested: S123DR-S775D927-X4F0-XX-UDD-G-W

Issue Date: 3/20/2023

Test Information

Test Method: LM-79-2019
Report Number: P646653
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-S775D927-X4F0-XX-UDD-G-W
Description: DEFINE 3 DIRECT RECESSED WITH WALL GRAZE FLUSH OPTIC
STANDARD LIGHT ENGINE
Light Source: 2700K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2742.9 lumens
Efficiency: N/A
Efficacy: 106.7 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

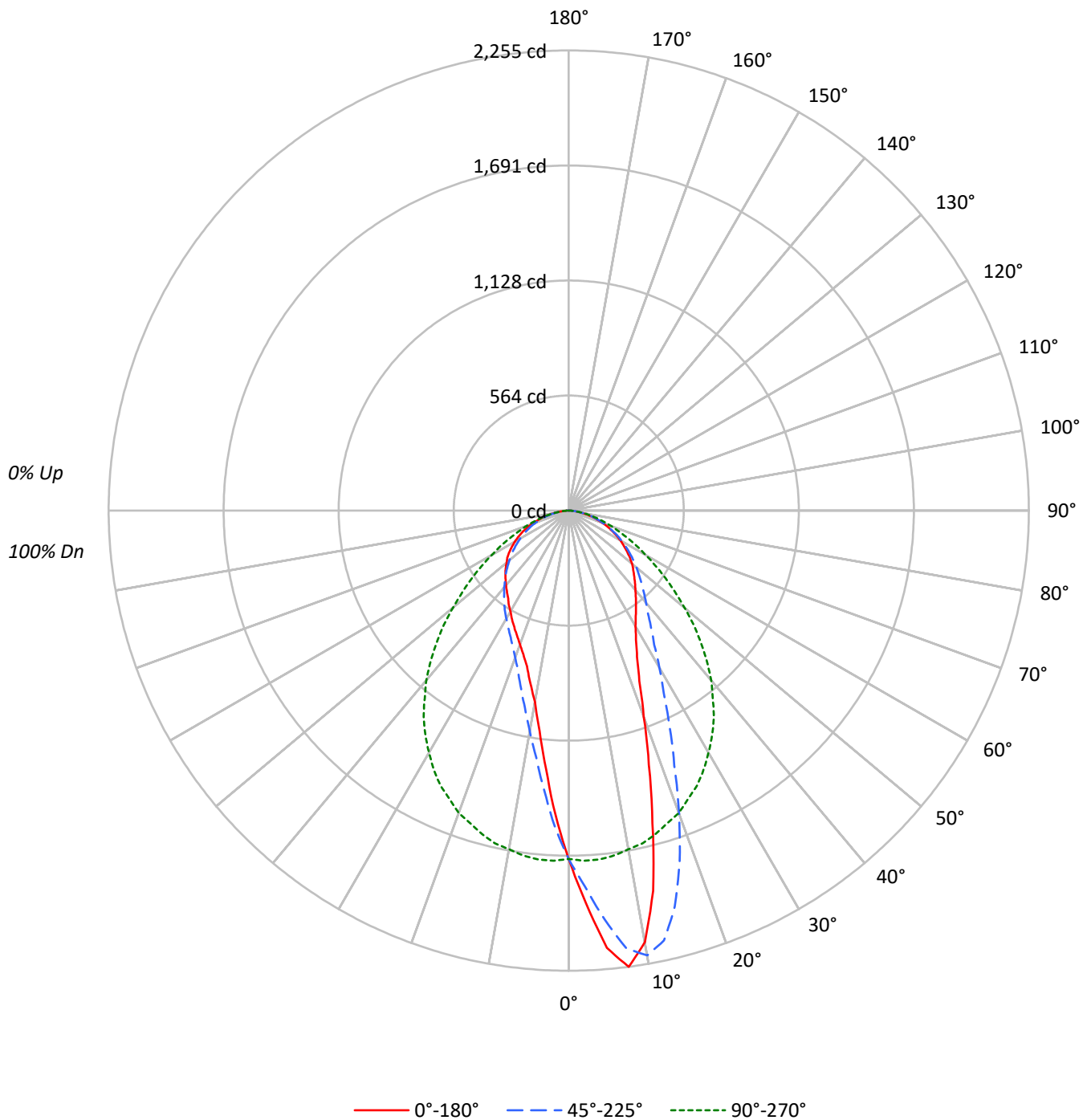
Input Watts (W): 25.7
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



TEST NUMBER: P646653

CATALOG NUMBER: S123DR-S775D927-X4F0-XX-UDD-G-W

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	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°	20570	20570	20570	20570	20570
5°	26014	24328	20754	16643	15369
10°	26266	27081	20616	13444	11650
15°	19783	25061	20475	11265	9852
20°	13784	20265	20213	9822	8949
25°	10511	15546	19768	9005	8394
30°	9094	12355	19057	8509	7947
35°	8436	10348	18237	8111	7633
40°	7987	9258	17083	7737	7526
45°	7721	8598	15619	7411	7479
50°	7588	8122	13885	7127	7440
55°	7306	7672	12182	6874	7472
60°	7044	7254	10500	6625	7350
65°	6617	6797	9058	6346	7205
70°	6112	6306	7701	6000	6782
75°	5531	5717	6601	5493	6196
80°	4566	4892	5225	4781	5225
85°	3608	3940	3829	4161	4161

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 80°

Vertical Angle: 45°

Luminance: 17832 cd/sqm



TEST NUMBER: P646653

CATALOG NUMBER: S123DR-S775D927-X4F0-XX-UDD-G-W

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	161.4	5.9
10°-20°	401.6	14.6
20°-30°	475.3	17.3
30°-40°	477.7	17.4
40°-50°	438.1	16.0
50°-60°	361.6	13.2
60°-70°	255.9	9.3
70°-80°	136.7	5.0
80°-90°	34.7	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°	1038.3	37.9
0°-40°	1516.0	55.3
0°-60°	2315.7	84.4
0°-90°	2742.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2742.9	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1707	1707	1707	1707	1707	
5°	2151	2011	1716	1376	1271	205
15°	1586	2009	1641	903	790	438
25°	791	1169	1487	677	631	373
35°	574	704	1240	551	519	360
45°	453	505	917	435	439	351
55°	348	365	580	327	356	311
65°	232	238	318	223	253	231
75°	119	123	142	118	133	125
85°	26	28	28	30	30	31
90°	0	0	0	0	0	

TEST NUMBER: P646653

CATALOG NUMBER: S123DR-S775D927-X4F0-XX-UDD-G-W

CANDELA DISTRIBUTION (FULL):

	0°	10°	20°	22.5°	30°	40°	45°	50°	60°	67.5°	70°
0°	1707.2	1707.2	1707.2	1707.2	1707.2	1707.2	1707.2	1707.2	1707.2	1707.2	1707.2
2.5°	1924.2	1920.2	1900.4	1887.8	1890.9	1862.4	1845.0	1830.7	1821.2	1798.3	1786.4
5°	2150.8	2161.9	2149.2	2142.9	2110.4	2058.9	2011.4	2001.1	1956.7	1902.0	1883.0
7.5°	2255.3	2261.7	2253.8	2253.8	2243.5	2197.5	2164.2	2138.1	2062.0	1991.5	1959.1
10°	2146.8	2161.1	2192.0	2206.2	2226.8	2220.5	2213.4	2203.1	2151.6	2070.0	2032.7
12.5°	1908.4	1925.8	1987.6	1996.3	2066.8	2134.9	2157.1	2182.5	2187.2	2118.3	2077.9
15°	1585.9	1634.3	1690.5	1717.5	1807.0	1950.4	2009.0	2077.9	2159.5	2131.0	2099.3
17.5°	1306.3	1324.5	1384.7	1441.8	1531.3	1696.9	1805.4	1908.4	2083.4	2112.0	2092.2
20°	1075.0	1091.6	1170.8	1166.9	1285.7	1471.9	1580.4	1699.2	1957.5	2050.2	2046.2
22.5°	903.1	929.2	973.6	998.1	1083.7	1249.3	1352.3	1500.4	1814.1	1960.7	1976.5
25°	790.6	809.6	836.5	857.9	924.5	1060.7	1169.3	1291.3	1633.5	1843.4	1883.0
27.5°	713.8	721.7	748.6	761.3	805.6	922.9	1006.9	1118.6	1466.3	1711.9	1767.4
30°	653.6	659.1	682.9	686.8	721.7	806.4	888.0	979.1	1303.1	1576.4	1639.8
32.5°	611.6	615.5	633.7	635.3	661.5	723.3	780.3	865.9	1148.7	1431.5	1509.9
35°	573.5	575.9	589.4	593.3	610.0	656.7	703.5	769.2	1025.9	1300.8	1387.1
37.5°	540.3	543.4	551.4	556.1	569.6	606.8	638.5	693.2	907.8	1164.5	1260.4
40°	507.8	513.3	518.9	518.9	533.9	562.4	588.6	633.7	806.4	1045.7	1130.4
42.5°	480.1	485.6	488.0	488.8	496.7	522.8	545.0	575.9	729.6	940.3	1023.5
45°	453.1	455.5	457.9	459.5	465.0	488.0	504.6	533.9	656.7	842.9	923.7
47.5°	428.6	428.6	430.2	432.5	436.5	453.1	467.4	488.8	594.1	755.7	822.3
50°	404.8	404.8	402.4	404.0	406.4	419.1	433.3	450.8	535.5	675.7	735.1
52.5°	376.3	376.3	377.1	374.7	377.1	388.2	399.3	416.7	485.6	602.1	652.8
55°	347.8	350.9	348.6	347.0	350.1	357.3	365.2	380.2	438.9	543.4	583.8
57.5°	319.2	320.8	320.0	322.4	320.8	327.2	334.3	344.6	396.9	477.7	515.7
60°	292.3	292.3	290.7	292.3	292.3	295.5	301.0	311.3	354.1	421.4	453.1
62.5°	262.2	263.0	263.8	263.0	262.2	266.2	270.9	278.1	316.9	366.8	390.5
65°	232.1	232.9	235.3	234.5	233.7	237.7	238.4	246.4	275.7	318.5	335.9
67.5°	205.2	203.6	204.4	206.0	206.8	207.6	209.1	217.1	237.7	272.5	286.8
70°	173.5	175.1	174.3	176.7	175.1	177.4	179.0	184.6	204.4	227.4	236.9
72.5°	145.0	145.8	145.8	148.1	147.3	149.7	151.3	153.7	167.9	188.5	192.5
75°	118.8	118.8	120.4	121.2	121.2	121.2	122.8	124.4	136.3	148.9	152.9
77.5°	90.3	94.3	93.5	94.3	95.1	97.4	95.9	99.0	106.2	113.3	115.7
80°	65.8	65.8	66.5	67.3	68.9	70.5	70.5	73.7	76.8	80.8	83.2
82.5°	42.0	42.8	45.2	45.9	46.7	49.1	49.1	49.1	53.1	54.7	54.7
85°	26.1	24.6	26.1	26.9	27.7	28.5	28.5	30.1	30.9	31.7	31.7
87.5°	12.7	12.7	12.7	12.7	13.5	13.5	13.5	13.5	14.3	14.3	14.3
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

TEST NUMBER: P646653

CATALOG NUMBER: S123DR-S775D927-X4F0-XX-UDD-G-W

CANDELA DISTRIBUTION (continued):

	80°	90°	100°	110°	112.5°	120°	130°	135°	140°	150°	157.5°
0°	1707.2	1707.2	1707.2	1707.2	1707.2	1707.2	1707.2	1707.2	1707.2	1707.2	1707.2
2.5°	1746.8	1717.5	1673.9	1638.2	1639.8	1607.3	1583.6	1552.7	1543.2	1533.7	1521.0
5°	1783.2	1715.9	1625.6	1553.5	1531.3	1477.4	1409.3	1376.0	1356.2	1321.4	1307.9
7.5°	1828.4	1704.8	1566.9	1454.4	1429.9	1340.4	1259.6	1220.0	1182.7	1158.2	1128.1
10°	1857.7	1685.0	1507.5	1358.6	1334.8	1232.6	1127.3	1098.8	1052.0	1021.9	993.4
12.5°	1879.8	1669.9	1446.5	1273.0	1234.2	1135.2	1029.0	990.2	956.2	912.6	892.0
15°	1899.7	1641.4	1383.9	1183.5	1143.1	1036.2	937.9	903.1	872.2	834.2	815.9
17.5°	1892.5	1606.5	1315.0	1104.3	1063.9	958.5	864.3	824.7	804.1	770.8	758.1
20°	1883.8	1576.4	1250.1	1029.0	984.7	886.5	794.6	766.0	745.4	724.1	713.0
22.5°	1856.1	1528.9	1184.3	960.1	918.1	819.9	741.5	717.7	701.9	686.8	677.3
25°	1809.3	1486.9	1120.1	891.2	857.9	766.0	699.5	677.3	667.0	652.0	643.3
27.5°	1751.5	1431.5	1056.0	835.0	796.9	715.3	658.3	644.0	633.0	621.1	612.4
30°	1678.6	1369.7	993.4	780.3	745.4	673.4	624.2	611.6	601.3	589.4	579.1
32.5°	1585.9	1307.1	934.8	729.6	700.3	637.7	592.6	582.3	573.5	559.3	553.7
35°	1482.2	1239.8	876.9	681.3	653.6	598.9	561.7	551.4	542.6	530.8	526.0
37.5°	1376.8	1159.8	819.9	640.1	615.5	566.4	530.8	520.5	512.5	502.2	499.9
40°	1265.1	1086.1	763.7	598.1	576.7	534.7	499.9	491.9	484.0	477.7	476.1
42.5°	1152.6	1001.3	714.5	563.2	540.3	501.5	469.8	461.0	456.3	453.1	453.9
45°	1046.5	916.6	663.8	522.8	507.0	471.3	442.0	434.9	430.9	428.6	431.7
47.5°	931.6	830.2	616.3	488.8	472.9	441.2	413.5	407.2	405.6	404.8	410.4
50°	830.2	740.7	564.8	453.9	440.5	408.0	385.8	380.2	378.7	381.0	389.0
52.5°	734.4	657.5	518.1	421.4	408.0	378.7	358.1	354.1	353.3	358.9	366.8
55°	639.3	579.9	467.4	385.8	372.3	347.0	331.1	327.2	326.4	337.5	344.6
57.5°	558.5	504.6	419.9	351.7	341.4	317.7	303.4	300.2	302.6	312.9	320.0
60°	479.3	435.7	376.3	315.3	307.4	286.8	275.7	274.9	277.3	289.1	296.3
62.5°	408.0	374.7	329.5	282.0	276.5	258.3	248.0	249.5	251.9	263.8	270.1
65°	347.0	317.7	283.6	248.7	241.6	228.9	221.8	222.6	227.4	237.7	244.0
67.5°	287.6	263.8	244.8	217.1	211.5	200.4	194.9	198.0	200.4	210.7	217.1
70°	237.7	218.6	204.4	183.8	179.8	170.3	166.4	170.3	172.7	181.4	189.3
72.5°	190.9	179.0	167.9	152.9	148.9	142.6	141.8	143.4	147.3	156.1	159.2
75°	148.1	141.8	132.3	122.8	120.4	117.2	116.5	118.0	122.0	126.7	129.9
77.5°	112.5	106.9	99.8	95.9	92.7	91.1	91.9	94.3	95.9	100.6	103.0
80°	81.6	75.3	73.7	68.1	67.3	66.5	68.1	68.9	71.3	74.5	76.0
82.5°	53.9	49.1	47.5	46.7	45.9	45.2	47.5	48.3	49.9	52.3	53.1
85°	29.3	27.7	27.7	26.9	27.7	29.3	29.3	30.1	30.1	30.9	30.1
87.5°	13.5	11.9	12.7	12.7	12.7	13.5	13.5	14.3	14.3	14.3	13.5
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P646653

CATALOG NUMBER: S123DR-S775D927-X4F0-XX-UDD-G-W

CANDELA DISTRIBUTION (continued):

	160°	170°	180°
0°	1707.2	1707.2	1707.2
2.5°	1520.2	1514.7	1492.5
5°	1296.0	1277.0	1270.7
7.5°	1124.9	1123.3	1090.0
10°	979.9	982.3	952.2
12.5°	888.8	869.0	866.6
15°	811.2	793.0	789.8
17.5°	753.4	742.3	739.1
20°	709.8	703.5	697.9
22.5°	674.9	667.0	662.3
25°	640.1	633.0	631.4
27.5°	610.0	601.3	601.3
30°	579.1	573.5	571.2
32.5°	551.4	546.6	546.6
35°	524.4	522.0	518.9
37.5°	499.9	499.9	498.3
40°	476.1	478.5	478.5
42.5°	455.5	457.9	457.9
45°	433.3	437.3	438.9
47.5°	411.1	417.5	419.1
50°	391.3	396.1	396.9
52.5°	369.9	375.5	379.5
55°	347.8	353.3	355.7
57.5°	324.0	329.5	330.3
60°	297.9	303.4	305.0
62.5°	274.1	277.3	278.8
65°	244.8	249.5	252.7
67.5°	217.9	221.8	221.8
70°	188.5	190.1	192.5
72.5°	160.8	161.6	161.6
75°	130.7	132.3	133.1
77.5°	103.0	103.8	103.8
80°	76.0	75.3	75.3
82.5°	53.1	50.7	50.7
85°	30.1	29.3	30.1
87.5°	13.5	13.5	13.5
90°	0.0	0.0	0.0

(END OF REPORT)