

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: P646698

Luminaire Tested: S123RDR-S775D927-X4F0-XX-UDD-G-W

Issue Date: 3/20/2023

Test Information

Test Method: LM-79-2019
Report Number: P646698
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2301-905-2)
Test Lab: INNOVATION CENTER
Issue Date: 3/20/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: S123RDR-S775D927-X4F0-XX-UDD-G-W
Description: DEFINE 3 REGRESSED DIRECT RECESSED WITH WALL GRAZE FLUSH OPTIC
STANDARD LIGHT ENGINE
Light Source: 2700K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

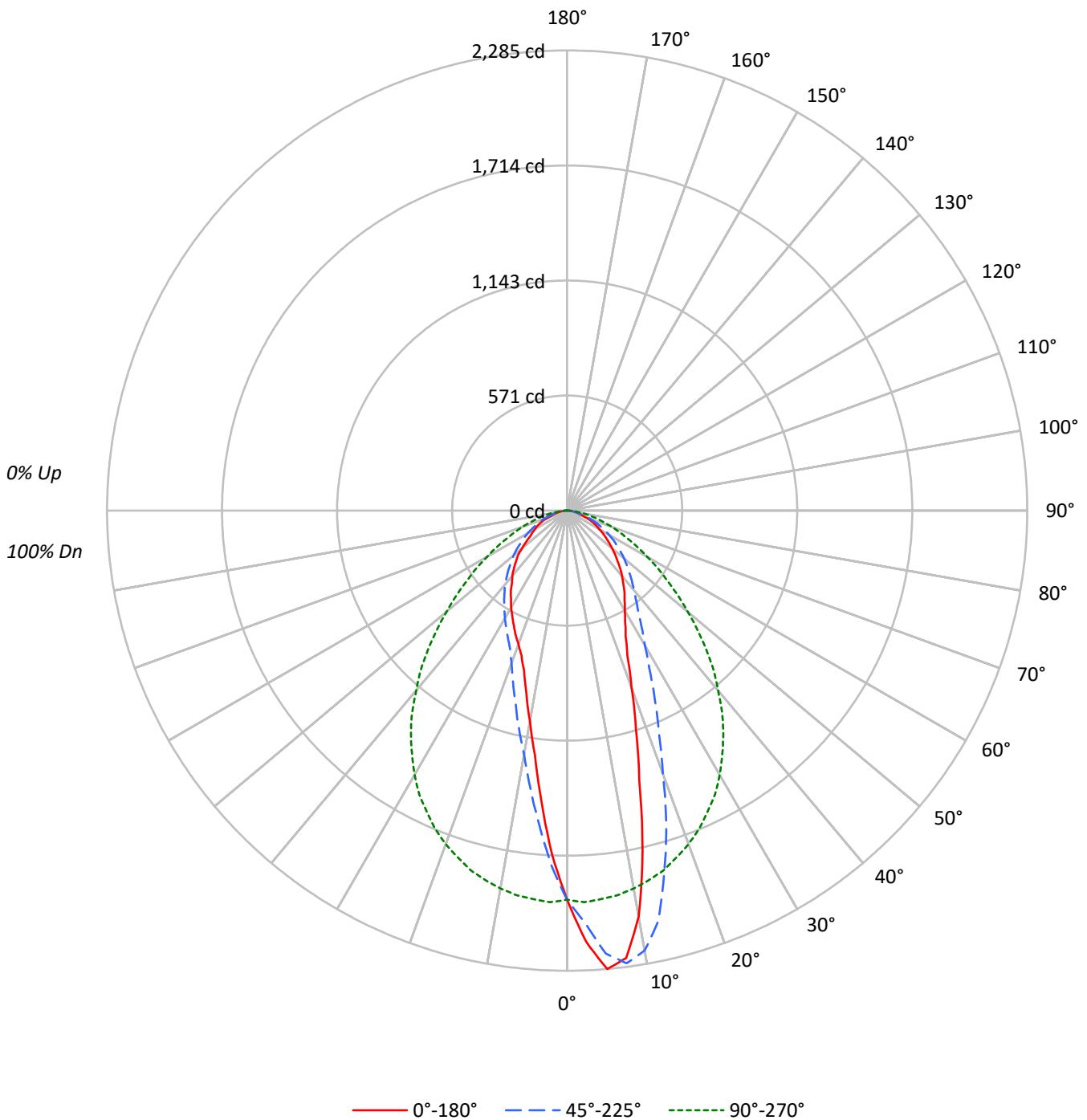
Lumens per Lamp: N/A
Luminaire Lumens: 2559.8 lumens
Efficiency: N/A
Efficacy: 98.5 lumens/watt
Spacing Criteria (0/90/45): 0.55 / 1.17 / 0.79
Luminous Opening: Rectangular (W 4' x L: 0.22' x H: 0')
CIE Type: Direct

Input Watts (W): 26
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	0
RW	70	50	30	10	70	50	30	10	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				100
1	111	107	103	100	108	104	101	98	100	97	95	96	94	92	93	91	89				87	
2	102	95	89	84	100	93	88	83	90	85	81	87	83	80	84	81	78				76	
3	94	85	78	73	92	84	77	72	81	75	71	78	74	70	76	72	69				67	
4	88	77	69	64	85	76	69	63	73	67	62	71	66	62	69	65	61				59	
5	82	70	62	56	80	69	62	56	67	61	56	65	60	55	63	58	54				53	
6	76	64	56	51	74	63	56	50	62	55	50	60	54	50	59	53	49				47	
7	71	59	51	46	70	58	51	46	57	50	45	56	50	45	54	49	45				43	
8	67	55	47	42	65	54	47	42	53	46	41	52	46	41	51	45	41				39	
9	63	51	43	38	62	50	43	38	49	43	38	48	42	38	47	42	38				36	
10	60	47	40	36	58	47	40	35	46	40	35	45	39	35	44	39	35				33	

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	23280	23280	23280	23280	23280
5°	27642	26704	23427	19000	17583
10°	25045	27139	23310	15043	13017
15°	17244	23242	23065	12352	10297
20°	11997	17827	22601	10350	9050
25°	9142	13680	21927	9247	8341
30°	7958	10758	21084	8597	7726
35°	7306	9054	19891	8017	7166
40°	6666	8124	18329	7526	6653
45°	6020	7438	16645	6993	6141
50°	5464	6906	14657	6505	5509
55°	4943	6340	12747	5941	4727
60°	4429	5764	11073	5441	4468
65°	4088	5126	9531	4833	4222
70°	3322	4383	8318	4383	3431
75°	2914	3538	7044	3650	3026
80°	2637	2970	5773	3081	2859
85°	2406	2516	4382	2737	2627

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 80°

Vertical Angle: 45°

Luminance: 17562 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	176.1	6.9
10°-20°	407.4	15.9
20°-30°	467.4	18.3
30°-40°	460.4	18.0
40°-50°	405.8	15.9
50°-60°	312.3	12.2
60°-70°	205.4	8.0
70°-80°	99.7	3.9
80°-90°	25.1	1.0
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°	1050.9	41.1
0°-40°	1511.4	59.0
0°-60°	2229.5	87.1
0°-90°	2559.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2559.8	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1932	1932	1932	1932	1932	
5°	2285	2208	1937	1571	1454	209
15°	1382	1863	1849	990	826	390
25°	688	1029	1649	696	627	325
35°	497	616	1352	545	487	310
45°	353	436	977	410	360	274
55°	235	302	607	283	225	211
65°	143	180	334	170	148	141
75°	63	76	151	78	65	67
85°	17	18	32	20	19	20
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°	1932.1	1932.1	1932.1	1932.1	1932.1	1932.1	1932.1	1932.1	1932.1	1932.1	1932.1
2.5°	2141.3	2127.8	2123.8	2119.1	2111.2	2082.6	2050.2	2053.3	2049.4	2024.8	2011.3
5°	2285.4	2287.0	2283.1	2279.9	2266.4	2231.6	2207.8	2193.6	2163.4	2117.5	2103.2
7.5°	2241.1	2266.4	2271.2	2276.7	2283.9	2275.9	2267.2	2261.7	2237.1	2187.2	2164.2
10°	2047.0	2045.4	2073.9	2096.9	2158.7	2202.3	2218.1	2241.1	2261.7	2226.8	2201.5
12.5°	1730.1	1732.5	1826.0	1826.0	1906.0	2016.9	2088.2	2136.5	2225.2	2227.6	2212.6
15°	1382.4	1421.2	1504.4	1521.8	1624.8	1773.7	1863.2	1963.0	2134.9	2188.8	2185.6
17.5°	1135.2	1151.8	1231.8	1254.8	1345.9	1514.7	1638.2	1758.6	1999.5	2112.7	2133.3
20°	935.6	950.6	1008.4	1025.9	1117.8	1278.6	1390.3	1520.2	1835.5	2009.0	2045.4
22.5°	781.1	810.4	849.2	876.2	928.4	1092.4	1188.3	1312.6	1645.4	1892.5	1935.3
25°	687.6	701.1	734.4	747.0	810.4	918.9	1029.0	1138.4	1476.6	1746.8	1822.0
27.5°	624.2	628.2	652.8	663.8	701.9	802.5	881.7	983.1	1304.7	1597.0	1685.0
30°	572.0	579.1	598.1	600.5	633.7	705.0	773.2	866.6	1154.2	1452.1	1542.4
32.5°	531.6	535.5	551.4	556.1	577.5	633.7	689.2	757.3	1014.8	1300.8	1404.5
35°	496.7	497.5	509.4	515.7	534.7	581.5	615.5	672.6	903.1	1175.6	1266.7
37.5°	457.1	462.6	471.3	476.9	493.5	531.6	562.4	606.8	800.1	1056.8	1141.5
40°	423.8	428.6	438.9	441.2	456.3	491.2	516.5	556.1	711.4	942.7	1029.0
42.5°	390.5	393.7	404.0	408.8	425.4	453.1	476.1	507.0	640.9	841.3	926.1
45°	353.3	361.2	372.3	374.7	390.5	419.1	436.5	465.0	577.5	753.4	828.6
47.5°	322.4	326.4	335.9	339.8	358.1	383.4	401.6	426.2	522.8	673.4	747.0
50°	291.5	293.1	301.8	307.4	321.6	350.9	368.4	390.5	472.9	608.4	659.9
52.5°	262.2	266.2	274.9	278.8	288.4	318.5	334.3	357.3	425.4	541.9	593.3
55°	235.3	237.7	244.0	248.7	259.8	286.0	301.8	321.6	384.2	480.9	526.0
57.5°	209.9	213.1	217.8	221.8	232.1	255.1	270.9	290.7	345.4	425.4	460.3
60°	183.8	187.7	193.3	194.9	204.4	225.0	239.2	256.7	305.8	373.9	404.8
62.5°	164.8	165.6	170.3	172.7	178.2	194.9	209.9	226.6	270.1	324.0	349.4
65°	143.4	145.8	148.1	149.7	154.5	168.7	179.8	192.5	235.3	282.0	299.4
67.5°	121.2	123.6	127.5	129.1	133.1	142.6	152.1	164.8	200.4	240.0	255.9
70°	94.3	94.3	100.6	103.8	110.1	117.2	124.4	135.5	166.4	200.4	212.3
72.5°	76.8	77.6	78.4	78.4	84.0	95.9	99.8	106.9	131.5	164.0	174.3
75°	62.6	63.4	64.2	65.0	65.8	69.7	76.0	82.4	100.6	124.4	133.9
77.5°	49.9	50.7	51.5	51.5	53.1	54.7	56.2	59.4	72.1	89.5	97.4
80°	38.0	38.8	39.6	39.6	40.4	42.0	42.8	44.4	48.3	60.2	64.2
82.5°	27.7	27.7	27.7	28.5	29.3	29.3	30.9	30.9	33.3	36.4	38.8
85°	17.4	17.4	18.2	18.2	18.2	19.0	18.2	19.0	19.8	20.6	22.2
87.5°	7.9	7.1	7.9	7.9	7.9	8.7	8.7	8.7	8.7	9.5	9.5
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°	1932.1	1932.1	1932.1	1932.1	1932.1	1932.1	1932.1	1932.1	1932.1	1932.1	1932.1
2.5°	1974.1	1946.4	1899.7	1870.3	1859.3	1825.2	1792.7	1765.8	1752.3	1750.7	1726.2
5°	2012.9	1936.9	1840.2	1759.4	1740.4	1681.0	1604.2	1570.9	1527.3	1509.9	1489.3
7.5°	2044.6	1925.8	1783.2	1661.2	1625.6	1536.0	1437.8	1394.2	1361.0	1308.7	1277.8
10°	2066.8	1905.2	1713.5	1555.8	1505.1	1400.6	1281.8	1229.5	1198.6	1138.4	1113.8
12.5°	2075.5	1879.1	1643.8	1446.5	1402.2	1277.8	1161.3	1107.5	1061.5	1006.9	983.1
15°	2072.3	1849.0	1572.5	1345.9	1290.5	1164.5	1040.9	990.2	947.4	892.8	861.9
17.5°	2051.0	1806.2	1494.8	1248.5	1195.4	1065.5	940.3	893.6	855.6	802.5	778.7
20°	2015.3	1762.6	1426.7	1159.8	1099.5	975.2	857.1	807.2	774.0	745.4	728.0
22.5°	1966.2	1711.1	1343.5	1071.8	1019.5	894.4	781.1	740.7	720.9	697.9	685.2
25°	1891.7	1649.3	1268.3	998.1	945.9	821.5	722.5	695.5	675.7	660.7	647.2
27.5°	1811.7	1589.9	1193.0	923.7	874.6	755.7	676.5	655.9	638.5	619.5	607.6
30°	1719.0	1515.4	1121.7	857.9	810.4	702.7	636.9	617.9	603.6	583.0	571.2
32.5°	1609.7	1433.8	1055.2	794.6	750.2	656.7	600.5	579.9	568.0	548.2	536.3
35°	1496.4	1352.3	982.3	735.9	695.5	616.3	564.8	545.0	532.3	512.5	500.7
37.5°	1385.5	1265.1	917.3	684.4	648.0	575.9	527.6	511.0	499.1	478.5	464.2
40°	1268.3	1165.3	854.0	636.1	602.1	540.3	493.5	478.5	462.6	444.4	430.2
42.5°	1145.5	1077.4	795.4	593.3	561.7	505.4	459.5	443.6	430.2	408.8	402.4
45°	1030.6	976.8	733.6	548.2	522.8	470.6	426.2	410.4	395.3	377.1	370.7
47.5°	928.4	878.5	677.3	508.6	483.2	436.5	392.9	376.3	365.2	350.9	341.4
50°	823.1	781.9	615.5	469.8	446.0	400.1	358.1	347.0	334.3	316.9	309.7
52.5°	724.8	693.2	564.8	432.5	410.4	369.2	326.4	315.3	303.4	288.4	278.1
55°	638.5	606.8	507.0	390.5	373.9	335.1	297.1	282.8	273.3	255.9	243.2
57.5°	549.8	534.7	451.5	355.7	339.8	301.0	267.0	255.9	244.0	225.0	212.3
60°	476.9	459.5	400.1	317.7	302.6	270.1	236.9	225.8	214.7	196.5	190.9
62.5°	408.0	395.3	350.1	282.0	269.3	237.7	208.3	198.0	187.0	175.1	171.1
65°	345.4	334.3	300.2	245.6	235.3	207.6	180.6	169.5	162.4	156.9	152.9
67.5°	286.8	280.4	254.3	211.5	203.6	179.0	155.3	146.6	142.6	136.3	133.1
70°	233.7	236.1	212.3	180.6	171.9	152.1	131.5	124.4	119.6	114.1	107.7
72.5°	190.9	190.1	175.9	147.3	141.0	125.2	109.3	104.6	99.0	87.9	80.8
75°	148.1	151.3	137.8	122.0	115.7	99.8	84.8	78.4	72.9	68.9	66.5
77.5°	113.3	114.9	108.5	93.5	87.9	74.5	62.6	59.4	57.0	54.7	53.9
80°	80.8	83.2	76.8	67.3	62.6	51.5	45.2	44.4	43.6	42.0	41.2
82.5°	52.3	55.5	52.3	42.0	39.6	34.1	32.5	32.5	31.7	30.9	30.1
85°	28.5	31.7	30.1	24.6	23.0	21.4	20.6	19.8	19.8	19.8	19.8
87.5°	11.1	15.1	12.7	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3
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):

	160°	170°	180°
0°	1932.1	1932.1	1932.1
2.5°	1720.6	1712.7	1709.5
5°	1483.8	1459.2	1453.7
7.5°	1268.3	1258.0	1223.9
10°	1109.8	1078.2	1063.9
12.5°	967.3	937.9	933.2
15°	853.2	832.6	825.5
17.5°	777.9	763.7	754.9
20°	722.5	712.2	705.8
22.5°	680.5	672.6	667.8
25°	643.3	631.4	627.4
27.5°	605.2	594.9	591.0
30°	569.6	560.9	555.3
32.5°	532.3	522.0	518.9
35°	496.7	490.4	487.2
37.5°	461.8	453.9	449.2
40°	429.4	425.4	423.0
42.5°	400.1	392.9	392.1
45°	369.2	362.0	360.4
47.5°	339.8	333.5	332.7
50°	309.0	300.2	293.9
52.5°	271.7	263.8	258.3
55°	238.4	229.7	225.0
57.5°	210.7	206.8	204.4
60°	189.3	187.0	185.4
62.5°	170.3	167.9	167.9
65°	152.9	150.5	148.1
67.5°	131.5	126.7	126.0
70°	105.4	98.2	97.4
72.5°	80.0	79.2	77.6
75°	66.5	65.0	65.0
77.5°	53.9	52.3	52.3
80°	41.2	40.4	41.2
82.5°	30.1	30.1	29.3
85°	19.8	19.0	19.0
87.5°	9.5	9.5	9.5
90°	0.0	0.0	0.0

(END OF REPORT)