

Signify Classified - Internal
Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269



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: P646668

Luminaire Tested: S123RDR-S1165D835-X4F0-XX-UDD-G-W

Issue Date: 3/20/2023

Test Information

Test Method: LM-79-2019
Report Number: P646668
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-S1165D835-X4F0-XX-UDD-G-W
Description: DEFINE 3 REGRESSED DIRECT RECESSED WITH WALL GRAZE FLUSH OPTIC
STANDARD LIGHT ENGINE
Light Source: 3500K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

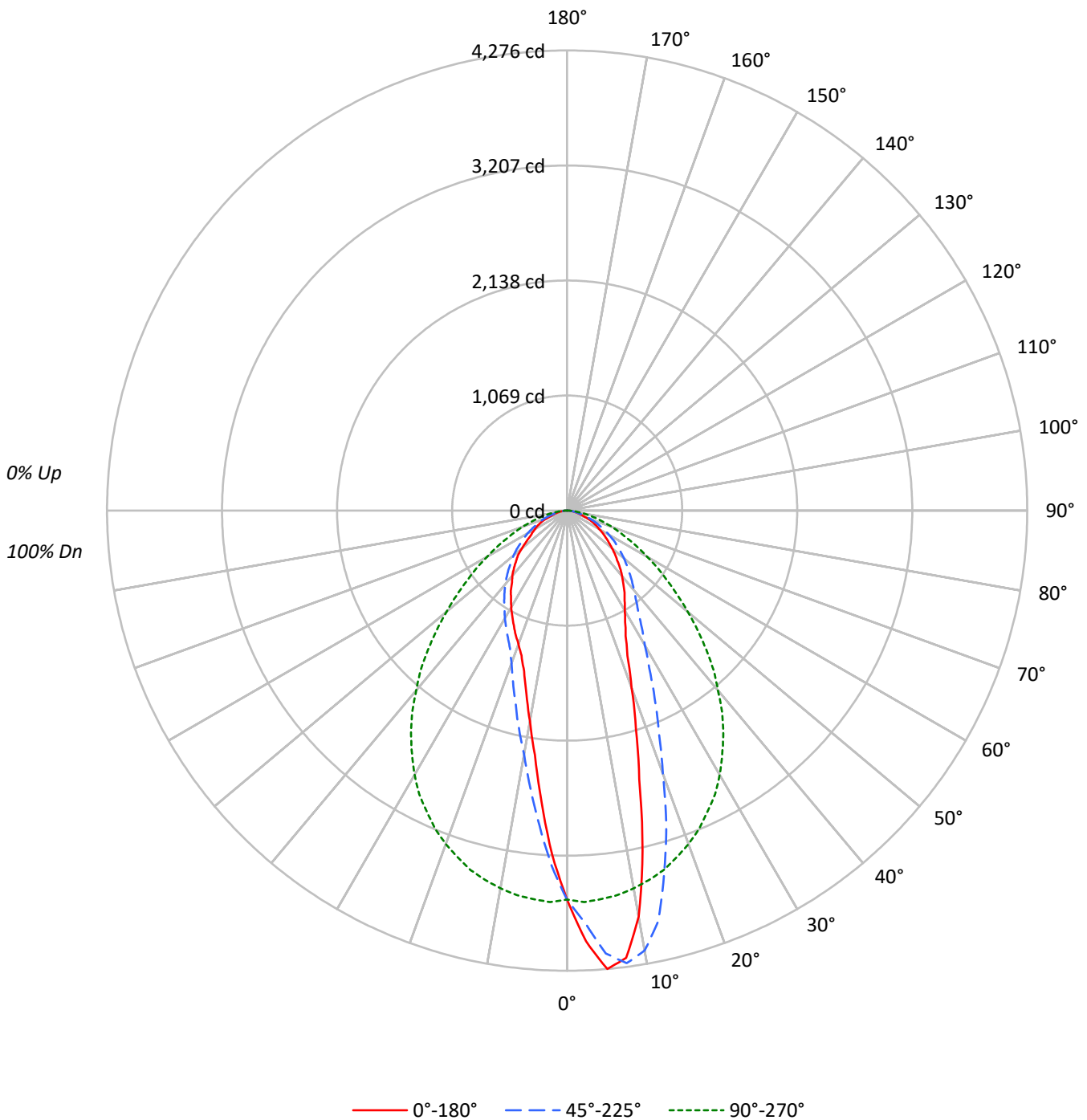
Lumens per Lamp: N/A
Luminaire Lumens: 4789.0 lumens
Efficiency: N/A
Efficacy: 119.4 lumens/watt
Spacing Criteria (0/90/45): 0.55 / 1.17 / 0.79
Luminous Opening: Rectangular (W 4' x L: 0.22' x H: 0')
CIE Type: Direct

Input Watts (W): 40.1
Input Voltage (V): 120
Input Current (A_{in}): 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°	43555	43555	43555	43555	43555
5°	51717	49960	43829	35548	32894
10°	46857	50773	43611	28143	24353
15°	32261	43483	43151	23110	19264
20°	22443	33351	42283	19364	16932
25°	17102	25595	41024	17301	15605
30°	14889	20125	39447	16084	14454
35°	13669	16939	37213	14999	13408
40°	12472	15199	34291	14081	12448
45°	11264	13915	31139	13082	11490
50°	10224	12919	27420	12169	10308
55°	9247	11863	23849	11115	8842
60°	8285	10786	20715	10179	8357
65°	7649	9591	17831	9044	7900
70°	6214	8198	15561	8198	6422
75°	5452	6625	13180	6830	5656
80°	4934	5551	10797	5759	5350
85°	4507	4714	8198	5129	4922

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 80°

Vertical Angle: 45°

Luminance: 32857 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	329.4	6.9
10°-20°	762.2	15.9
20°-30°	874.5	18.3
30°-40°	861.4	18.0
40°-50°	759.3	15.9
50°-60°	584.3	12.2
60°-70°	384.2	8.0
70°-80°	186.6	3.9
80°-90°	47.1	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°	1966.2	41.1
0°-40°	2827.6	59.0
0°-60°	4171.2	87.1
0°-90°	4789.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4789.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	3615	3615	3615	3615	3615	
5°	4276	4131	3624	2939	2720	391
15°	2586	3486	3459	1853	1544	730
25°	1286	1925	3086	1301	1174	608
35°	929	1152	2530	1020	912	579
45°	661	817	1827	768	674	513
55°	440	565	1135	529	421	395
65°	268	336	625	317	277	263
75°	117	142	283	147	122	126
85°	33	34	59	37	36	37
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°	3614.8	3614.8	3614.8	3614.8	3614.8	3614.8	3614.8	3614.8	3614.8	3614.8	3614.8
2.5°	4006.1	3980.9	3973.5	3964.6	3949.7	3896.4	3835.6	3841.5	3834.1	3788.2	3763.0
5°	4275.8	4278.8	4271.4	4265.4	4240.2	4175.0	4130.6	4103.9	4047.6	3961.6	3934.9
7.5°	4192.8	4240.2	4249.1	4259.5	4272.8	4258.0	4241.7	4231.3	4185.4	4092.0	4049.0
10°	3829.7	3826.7	3880.1	3923.1	4038.7	4120.2	4149.8	4192.8	4231.3	4166.1	4118.7
12.5°	3236.9	3241.3	3416.2	3416.2	3565.9	3773.4	3906.8	3997.2	4163.2	4167.6	4139.4
15°	2586.2	2658.8	2814.5	2847.1	3039.7	3318.4	3485.8	3672.6	3994.2	4095.0	4089.1
17.5°	2123.8	2154.9	2304.6	2347.6	2518.1	2833.7	3064.9	3290.2	3740.8	3952.7	3991.2
20°	1750.3	1778.5	1886.7	1919.3	2091.2	2392.1	2601.0	2844.1	3434.0	3758.6	3826.7
22.5°	1461.3	1516.2	1588.8	1639.2	1737.0	2043.8	2223.1	2455.8	3078.3	3540.7	3620.7
25°	1286.4	1311.6	1373.9	1397.6	1516.2	1719.2	1925.2	2129.7	2762.6	3268.0	3408.8
27.5°	1167.9	1175.3	1221.2	1242.0	1313.1	1501.3	1649.6	1839.3	2441.0	2987.9	3152.4
30°	1070.1	1083.4	1119.0	1123.4	1185.7	1319.0	1446.5	1621.4	2159.4	2716.7	2885.6
32.5°	994.5	1001.9	1031.5	1040.4	1080.4	1185.7	1289.4	1416.9	1898.5	2433.6	2627.7
35°	929.3	930.7	953.0	964.8	1000.4	1087.8	1151.6	1258.3	1689.6	2199.4	2369.8
37.5°	855.2	865.5	881.8	892.2	923.3	994.5	1052.3	1135.3	1496.9	1977.1	2135.7
40°	792.9	801.8	821.1	825.5	853.7	918.9	966.3	1040.4	1330.9	1763.7	1925.2
42.5°	730.7	736.6	755.9	764.8	795.9	847.7	890.7	948.5	1199.0	1574.0	1732.5
45°	661.0	675.8	696.6	701.0	730.7	784.0	816.6	870.0	1080.4	1409.5	1550.3
47.5°	603.2	610.6	628.4	635.8	669.9	717.3	751.4	797.4	978.2	1259.8	1397.6
50°	545.4	548.4	564.7	575.0	601.7	656.6	689.2	730.7	884.8	1138.2	1234.6
52.5°	490.6	498.0	514.3	521.7	539.5	595.8	625.4	668.4	795.9	1013.7	1110.1
55°	440.2	444.6	456.5	465.4	486.1	535.0	564.7	601.7	718.8	899.6	984.1
57.5°	392.8	398.7	407.6	415.0	434.2	477.2	506.9	543.9	646.2	795.9	861.1
60°	343.8	351.3	361.6	364.6	382.4	420.9	447.6	480.2	572.1	699.5	757.3
62.5°	308.3	309.8	318.6	323.1	333.5	364.6	392.8	423.9	505.4	606.2	653.6
65°	268.3	272.7	277.1	280.1	289.0	315.7	336.4	360.1	440.2	527.6	560.2
67.5°	226.8	231.2	238.6	241.6	249.0	266.8	284.6	308.3	375.0	449.1	478.7
70°	176.4	176.4	188.2	194.2	206.0	219.3	232.7	253.4	311.2	375.0	397.2
72.5°	143.8	145.2	146.7	146.7	157.1	179.3	186.7	200.1	246.0	306.8	326.1
75°	117.1	118.6	120.0	121.5	123.0	130.4	142.3	154.1	188.2	232.7	250.5
77.5°	93.4	94.9	96.3	96.3	99.3	102.3	105.2	111.2	134.9	167.5	182.3
80°	71.1	72.6	74.1	74.1	75.6	78.6	80.0	83.0	90.4	112.6	120.0
82.5°	51.9	51.9	51.9	53.4	54.8	54.8	57.8	57.8	62.2	68.2	72.6
85°	32.6	32.6	34.1	34.1	34.1	35.6	34.1	35.6	37.1	38.5	41.5
87.5°	14.8	13.3	14.8	14.8	14.8	16.3	16.3	16.3	16.3	17.8	17.8
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°	3614.8	3614.8	3614.8	3614.8	3614.8	3614.8	3614.8	3614.8	3614.8	3614.8	3614.8
2.5°	3693.3	3641.5	3554.0	3499.2	3478.4	3414.7	3353.9	3303.6	3278.4	3275.4	3229.4
5°	3766.0	3623.7	3442.9	3291.7	3256.1	3145.0	3001.2	2939.0	2857.4	2824.8	2786.3
7.5°	3825.2	3602.9	3336.2	3107.9	3041.2	2873.8	2690.0	2608.5	2546.2	2448.4	2390.6
10°	3866.7	3564.4	3205.7	2910.8	2815.9	2620.3	2398.0	2300.2	2242.4	2129.7	2083.8
12.5°	3883.0	3515.5	3075.3	2706.3	2623.3	2390.6	2172.7	2071.9	1986.0	1883.7	1839.3
15°	3877.1	3459.2	2941.9	2518.1	2414.3	2178.7	1947.5	1852.6	1772.6	1670.3	1612.5
17.5°	3837.1	3379.1	2796.7	2335.8	2236.5	1993.4	1759.2	1671.8	1600.6	1501.3	1456.9
20°	3770.4	3297.6	2669.2	2169.8	2057.1	1824.4	1603.6	1510.2	1448.0	1394.6	1362.0
22.5°	3678.5	3201.3	2513.6	2005.3	1907.4	1673.3	1461.3	1385.7	1348.7	1305.7	1282.0
25°	3539.2	3085.7	2372.8	1867.4	1769.6	1536.9	1351.7	1301.3	1264.2	1236.1	1210.9
27.5°	3389.5	2974.5	2232.0	1728.1	1636.2	1413.9	1265.7	1227.2	1194.6	1159.0	1136.8
30°	3216.1	2835.2	2098.6	1605.1	1516.2	1314.6	1191.6	1156.0	1129.3	1090.8	1068.6
32.5°	3011.6	2682.6	1974.1	1486.5	1403.5	1228.6	1123.4	1084.9	1062.7	1025.6	1003.4
35°	2799.6	2529.9	1837.8	1376.9	1301.3	1153.1	1056.7	1019.7	996.0	958.9	936.7
37.5°	2592.2	2366.9	1716.2	1280.5	1212.3	1077.5	987.1	955.9	933.7	895.2	868.5
40°	2372.8	2180.1	1597.7	1190.1	1126.4	1010.8	923.3	895.2	865.5	831.4	804.8
42.5°	2143.1	2015.6	1488.0	1110.1	1050.8	945.6	859.6	830.0	804.8	764.8	752.9
45°	1928.2	1827.4	1372.4	1025.6	978.2	880.4	797.4	767.7	739.6	705.5	693.6
47.5°	1737.0	1643.6	1267.2	951.5	904.1	816.6	735.1	704.0	683.2	656.6	638.8
50°	1539.9	1462.8	1151.6	878.9	834.4	748.4	669.9	649.2	625.4	592.8	579.5
52.5°	1356.1	1296.8	1056.7	809.2	767.7	690.6	610.6	589.9	567.6	539.5	520.2
55°	1194.6	1135.3	948.5	730.7	699.5	626.9	555.8	529.1	511.3	478.7	455.0
57.5°	1028.6	1000.4	844.8	665.5	635.8	563.2	499.5	478.7	456.5	420.9	397.2
60°	892.2	859.6	748.4	594.3	566.2	505.4	443.1	422.4	401.6	367.6	357.2
62.5°	763.3	739.6	655.1	527.6	503.9	444.6	389.8	370.5	349.8	327.5	320.1
65°	646.2	625.4	561.7	459.4	440.2	388.3	337.9	317.2	303.8	293.5	286.0
67.5°	536.5	524.7	475.7	395.7	380.9	334.9	290.5	274.2	266.8	254.9	249.0
70°	437.2	441.7	397.2	337.9	321.6	284.6	246.0	232.7	223.8	213.4	201.6
72.5°	357.2	355.7	329.0	275.7	263.8	234.2	204.5	195.6	185.3	164.5	151.2
75°	277.1	283.1	257.9	228.2	216.4	186.7	158.6	146.7	136.4	128.9	124.5
77.5°	211.9	214.9	203.0	174.9	164.5	139.3	117.1	111.2	106.7	102.3	100.8
80°	151.2	155.6	143.8	126.0	117.1	96.3	84.5	83.0	81.5	78.6	77.1
82.5°	97.8	103.7	97.8	78.6	74.1	63.7	60.8	60.8	59.3	57.8	56.3
85°	53.4	59.3	56.3	45.9	43.0	40.0	38.5	37.1	37.1	37.1	37.1
87.5°	20.7	28.2	23.7	19.3	19.3	19.3	19.3	19.3	19.3	19.3	19.3
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°	3614.8	3614.8	3614.8
2.5°	3219.1	3204.3	3198.3
5°	2775.9	2730.0	2719.6
7.5°	2372.8	2353.5	2289.8
10°	2076.4	2017.1	1990.4
12.5°	1809.6	1754.8	1745.9
15°	1596.2	1557.7	1544.3
17.5°	1455.4	1428.7	1412.4
20°	1351.7	1332.4	1320.5
22.5°	1273.1	1258.3	1249.4
25°	1203.4	1181.2	1173.8
27.5°	1132.3	1113.0	1105.6
30°	1065.6	1049.3	1038.9
32.5°	996.0	976.7	970.8
35°	929.3	917.4	911.5
37.5°	864.1	849.2	840.3
40°	803.3	795.9	791.4
42.5°	748.4	735.1	733.6
45°	690.6	677.3	674.3
47.5°	635.8	624.0	622.5
50°	578.0	561.7	549.9
52.5°	508.4	493.5	483.2
55°	446.1	429.8	420.9
57.5°	394.2	386.8	382.4
60°	354.2	349.8	346.8
62.5°	318.6	314.2	314.2
65°	286.0	281.6	277.1
67.5°	246.0	237.1	235.7
70°	197.1	183.8	182.3
72.5°	149.7	148.2	145.2
75°	124.5	121.5	121.5
77.5°	100.8	97.8	97.8
80°	77.1	75.6	77.1
82.5°	56.3	56.3	54.8
85°	37.1	35.6	35.6
87.5°	17.8	17.8	17.8
90°	0.0	0.0	0.0

(END OF REPORT)