

Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269



Scaled data based on original data using  
LM-79-2024 Approved Method: Electrical and Photometric Measurements of Solid-  
State Lighting Products

Test Report Prepared for  
Cooper Lighting Solutions

Brand: NEO-RAY

Report Number: P242543

Luminaire Tested: S123RDRP-S1165D840-X4F0-XX-UDD-F-W

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-2024  
Report Number: P242543  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-25)  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: S123RDRP-S1165D840-X4F0-XX-UDD-F-W  
Description: DEFINE 3 REGRESSED DIRECT RECESSED WITH SATIN FLUSH DIFFUSER  
STANDARD LIGHT ENGINE  
Light Source: (92) 4000K CCT, 80 CRI LEDS  
Ballast/Driver: -

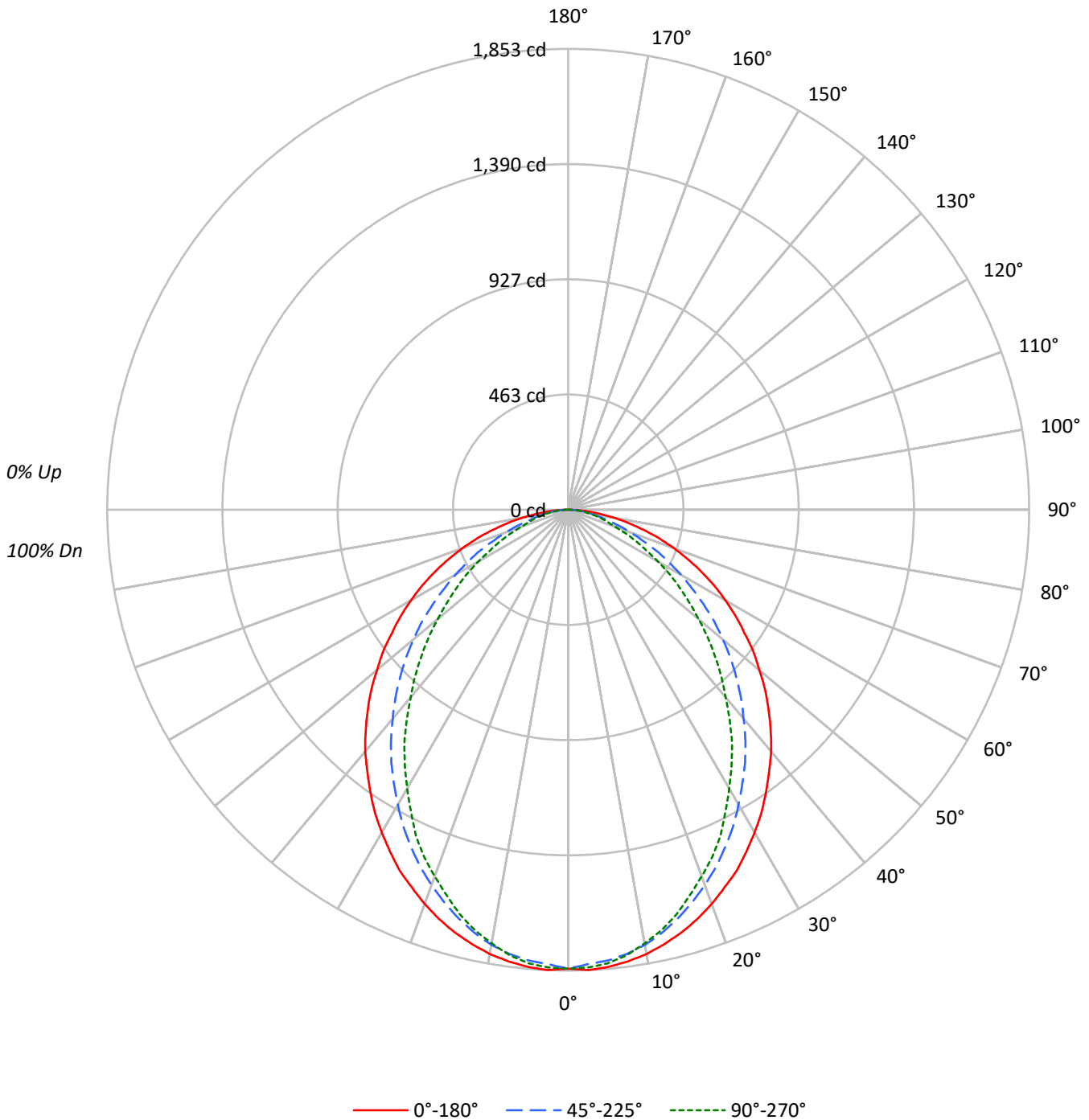
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4169.2 lumens  
Efficiency: N/A  
Efficacy: 101.4 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.07 / 1.22  
Luminous Opening: Rectangular (W 0.23' x L: 3.88' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 41.1  
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	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	110	105	101	98	107	103	99	96	99	96	93	95	93	90	91	89	88					86				
2	100	93	86	81	98	91	85	80	87	83	78	84	80	77	81	78	75					73				
3	92	82	75	68	90	81	74	68	78	72	67	75	70	66	73	68	64					62				
4	85	73	65	59	83	72	64	58	70	63	58	67	62	57	65	60	56					54				
5	78	66	57	51	76	65	57	51	63	56	50	61	55	50	59	54	49					47				
6	73	60	51	45	71	59	51	45	57	50	45	55	49	44	54	48	44					42				
7	67	54	46	40	66	54	46	40	52	45	40	51	44	39	49	44	39					37				
8	63	50	42	36	61	49	41	36	48	41	36	47	40	36	46	40	35					34				
9	59	46	38	33	58	45	38	33	44	37	32	43	37	32	42	36	32					30				
10	55	43	35	30	54	42	35	30	41	34	30	40	34	29	39	34	29					28				

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

	0°	45°	90°
0°	22369	22369	22369
5°	22454	22145	22273
10°	22327	21867	21793
15°	22087	21354	21130
20°	21758	20716	20232
25°	21419	19997	19357
30°	20969	19168	18120
35°	20508	18338	16987
40°	20083	17360	15583
45°	19525	16395	14317
50°	18910	15297	12898
55°	18282	14043	11576
60°	17707	12698	10124
65°	16956	11246	8670
70°	16019	9441	7003
75°	14649	7432	6589
80°	13060	6582	6059
85°	11029	5827	5410

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 19525 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	173.5	4.2
10°-20°	482.6	11.6
20°-30°	694.9	16.7
30°-40°	782.5	18.8
40°-50°	748.5	18.0
50°-60°	612.7	14.7
60°-70°	413.1	9.9
70°-80°	207.2	5.0
80°-90°	54.2	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°	1350.9	32.4
0°-40°	2133.5	51.2
0°-60°	3494.7	83.8
0°-90°	4169.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4169.2	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1845	1845	1845	1845	1845	
5°	1845	1838	1820	1834	1830	175
15°	1760	1744	1702	1694	1684	496
25°	1602	1564	1495	1464	1447	737
35°	1386	1332	1239	1175	1148	867
45°	1139	1072	956	871	835	879
55°	865	792	664	578	548	776
65°	591	509	392	319	302	585
75°	313	241	159	144	141	333
85°	79	46	42	39	39	92
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1845.4	1845.4	1845.4	1845.4	1845.4
2.5°	1852.9	1846.9	1829.0	1845.4	1842.4
5°	1845.4	1837.9	1820.0	1833.5	1830.5
7.5°	1832.0	1824.5	1802.0	1811.0	1806.5
10°	1814.0	1803.5	1776.6	1778.1	1770.6
12.5°	1788.6	1776.6	1742.2	1740.7	1731.7
15°	1760.1	1743.7	1701.7	1694.3	1683.8
17.5°	1725.7	1707.7	1655.4	1640.4	1625.4
20°	1686.8	1662.8	1606.0	1586.5	1568.5
22.5°	1643.4	1614.9	1553.6	1528.1	1511.7
25°	1601.5	1564.1	1495.2	1463.8	1447.3
27.5°	1550.6	1510.2	1435.3	1393.4	1368.0
30°	1498.2	1453.3	1369.5	1318.6	1294.6
32.5°	1445.8	1393.4	1303.6	1246.8	1221.3
35°	1385.9	1332.1	1239.3	1174.9	1148.0
37.5°	1326.1	1267.7	1170.4	1098.6	1065.7
40°	1269.2	1203.3	1097.1	1019.3	984.8
42.5°	1204.8	1139.0	1028.2	941.4	911.5
45°	1139.0	1071.6	956.4	871.1	835.2
47.5°	1074.6	999.8	886.0	793.3	761.8
50°	1002.8	932.4	811.2	718.4	684.0
52.5°	938.4	860.6	740.9	643.6	613.6
55°	865.1	791.8	664.5	577.7	547.8
57.5°	799.2	719.9	591.2	508.9	483.4
60°	730.4	648.1	523.8	443.0	417.6
62.5°	661.5	579.2	455.0	380.2	353.2
65°	591.2	508.9	392.1	318.8	302.3
67.5°	520.9	437.0	323.3	267.9	249.9
70°	452.0	371.2	266.4	214.0	197.6
72.5°	383.2	303.8	211.0	170.6	166.1
75°	312.8	241.0	158.7	143.7	140.7
77.5°	248.5	182.6	124.2	115.2	112.3
80°	187.1	125.7	94.3	89.8	86.8
82.5°	128.7	77.8	67.4	62.9	62.9
85°	79.3	46.4	41.9	38.9	38.9
87.5°	35.9	19.5	19.5	18.0	16.5
90°	0.0	0.0	0.0	0.0	0.0



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**CIE UGR TABLE:**

Reflectances:											
Ceiling		0.7	0.7	0.5	0.5	0.3	0.7	0.7	0.5	0.5	0.3
Wall		0.5	0.3	0.5	0.3	0.3	0.5	0.3	0.5	0.3	0.3
Reference plane		0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Room dimensions		Viewed crosswise					Viewed endwise				
X=2H	Y=2H	22.25	23.80	22.61	24.11	24.43	19.62	21.17	19.98	21.49	21.80
	3H	24.02	25.42	24.40	25.75	26.11	20.73	22.13	21.11	22.45	22.81
	4H	24.68	25.99	25.08	26.34	26.72	21.12	22.43	21.52	22.78	23.16
	6H	25.16	26.38	25.58	26.74	27.13	21.44	22.65	21.85	23.02	23.41
	8H	25.31	26.47	25.74	26.86	27.26	21.55	22.71	21.98	23.10	23.50
	12H	25.42	26.52	25.85	26.91	27.33	21.63	22.73	22.06	23.12	23.54
4H	2H	22.50	23.82	22.90	24.17	24.54	20.33	21.64	20.73	21.99	22.37
	3H	24.47	25.56	24.88	25.96	26.36	21.61	22.70	22.02	23.10	23.50
	4H	25.24	26.22	25.67	26.64	27.07	22.09	23.07	22.52	23.48	23.92
	6H	25.83	26.69	26.29	27.13	27.59	22.50	23.36	22.96	23.80	24.26
	8H	26.03	26.83	26.49	27.27	27.74	22.65	23.45	23.11	23.89	24.36
	12H	26.17	26.89	26.65	27.37	27.84	22.76	23.48	23.24	23.95	24.42
8H	4H	25.29	26.09	25.76	26.54	27.00	22.41	23.21	22.87	23.65	24.12
	6H	25.95	26.62	26.45	27.11	27.58	22.92	23.58	23.42	24.07	24.55
	8H	26.19	26.78	26.70	27.29	27.78	23.12	23.72	23.64	24.23	24.72
	12H	26.39	26.91	26.90	27.41	27.97	23.30	23.82	23.80	24.31	24.88
12H	4H	25.28	26.00	25.76	26.48	26.95	22.45	23.17	22.93	23.64	24.12
	6H	25.94	26.54	26.45	27.05	27.53	22.98	23.58	23.49	24.09	24.57
	8H	26.21	26.74	26.72	27.23	27.79	23.24	23.76	23.75	24.25	24.82