

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: P243466

Luminaire Tested: S124DRP-H1020D835-X4F0-XX-UDD-F-W

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-2024  
Report Number: P243466  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-84)  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: S124DRP-H1020D835-X4F0-XX-UDD-F-W  
Description: DEFINE 4 DIRECT RECESSED WITH SATIN FLUSH DIFFUSER.  
HIGH PERFORMANCE LIGHT ENGINE  
Light Source: (184) 3500K CCT, 80 CRI LEDS  
Ballast/Driver: -

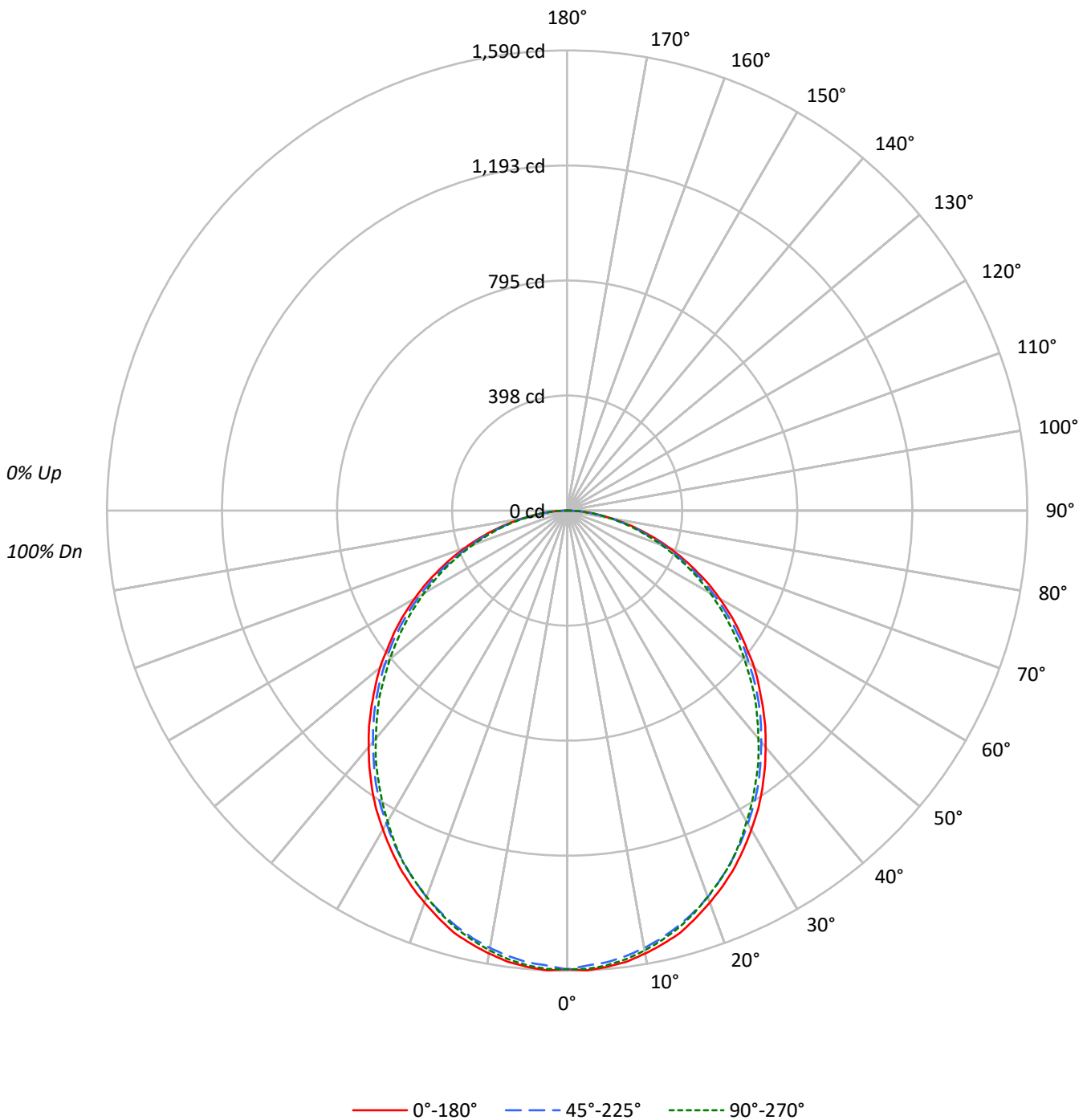
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4080.2 lumens  
Efficiency: N/A  
Efficacy: 129.5 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.17 / 1.3  
Luminous Opening: Rectangular (W 0.31' x L: 3.88' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 31.5  
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	0
RCR																		
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	109	104	100	96	106	102	98	95	98	95	92	94	91	89	90	88	86	84
2	99	91	84	79	97	89	83	78	86	80	76	82	78	74	79	76	73	70
3	91	80	72	66	88	79	71	65	76	69	64	73	67	63	70	66	62	60
4	83	71	63	56	81	70	62	56	67	60	55	65	59	54	63	58	53	51
5	77	64	55	48	74	63	54	48	61	53	48	59	52	47	57	51	47	44
6	71	58	49	42	69	57	48	42	55	47	42	53	46	41	52	46	41	39
7	66	52	44	38	64	51	43	37	50	43	37	48	42	37	47	41	37	35
8	61	48	39	34	60	47	39	33	46	38	33	45	38	33	43	37	33	31
9	57	44	36	30	56	43	36	30	42	35	30	41	35	30	40	34	30	28
10	54	41	33	28	52	40	33	27	39	32	27	38	32	27	37	31	27	25

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

	0°	45°	90°
0°	14089	14089	14089
5°	14120	13981	14073
10°	14026	13852	13933
15°	13898	13672	13731
20°	13639	13444	13431
25°	13382	13142	13154
30°	13065	12814	12734
35°	12749	12496	12343
40°	12375	12106	11926
45°	12013	11770	11543
50°	11681	11342	11057
55°	11253	10952	10613
60°	10821	10455	10133
65°	10308	9955	9629
70°	9754	9317	9016
75°	8991	8638	8370
80°	7924	7791	7591
85°	6976	6976	6843

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 12013 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	149.4	3.7
10°-20°	421.3	10.3
20°-30°	620.5	15.2
30°-40°	721.9	17.7
40°-50°	722.2	17.7
50°-60°	631.6	15.5
60°-70°	469.1	11.5
70°-80°	267.3	6.6
80°-90°	77.0	1.9
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°	1191.2	29.2
0°-40°	1913.1	46.9
0°-60°	3266.8	80.1
0°-90°	4080.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4080.2	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1585	1585	1585	1585	1585	
5°	1582	1580	1567	1578	1577	150
15°	1510	1502	1486	1495	1492	425
25°	1364	1358	1340	1344	1341	628
35°	1175	1164	1152	1141	1138	734
45°	956	952	936	922	918	738
55°	726	721	707	691	685	649
65°	490	486	473	463	458	486
75°	262	257	252	246	244	278
85°	68	67	68	66	67	78
90°	0	0	0	0	0	

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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1585.0	1585.0	1585.0	1585.0	1585.0
2.5°	1590.1	1586.2	1573.3	1586.2	1585.0
5°	1582.4	1579.8	1566.9	1578.5	1577.2
7.5°	1572.1	1566.9	1552.7	1564.3	1563.0
10°	1554.0	1550.1	1534.7	1546.3	1543.7
12.5°	1533.4	1529.5	1512.7	1521.8	1519.2
15°	1510.2	1502.4	1485.7	1494.7	1492.1
17.5°	1476.6	1471.5	1454.7	1462.4	1458.6
20°	1441.8	1435.4	1421.2	1422.5	1419.9
22.5°	1404.4	1398.0	1381.2	1386.4	1381.2
25°	1364.4	1358.0	1339.9	1343.8	1341.2
27.5°	1319.3	1312.8	1296.1	1297.4	1292.2
30°	1272.9	1265.1	1248.4	1247.1	1240.6
32.5°	1226.4	1218.7	1201.9	1196.8	1190.3
35°	1174.9	1164.5	1151.6	1141.3	1137.5
37.5°	1122.0	1116.8	1097.5	1091.0	1085.9
40°	1066.5	1061.4	1043.3	1034.3	1027.8
42.5°	1013.6	1007.2	990.4	977.5	972.4
45°	955.6	951.7	936.3	922.1	918.2
47.5°	898.9	897.6	878.2	864.1	857.6
50°	844.7	837.0	820.2	807.3	799.6
52.5°	781.5	780.2	766.0	749.3	742.8
55°	726.1	720.9	706.7	691.2	684.8
57.5°	668.0	665.4	647.4	634.5	628.0
60°	608.7	603.5	588.1	576.5	570.0
62.5°	552.0	545.5	531.3	519.7	513.3
65°	490.1	486.2	473.3	463.0	457.8
67.5°	432.0	426.9	414.0	404.9	399.8
70°	375.3	367.5	358.5	350.8	346.9
72.5°	318.5	312.1	304.4	299.2	294.0
75°	261.8	256.6	251.5	246.3	243.7
77.5°	207.6	202.5	199.9	198.6	196.0
80°	154.8	152.2	152.2	150.9	148.3
82.5°	109.6	107.0	107.0	107.0	105.7
85°	68.4	67.1	68.4	65.8	67.1
87.5°	32.2	32.2	33.5	32.2	33.5
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	20.49	22.10	20.85	22.42	22.73	20.14	21.76	20.51	22.07	22.38
	3H	22.24	23.70	22.62	24.03	24.39	21.85	23.31	22.23	23.64	24.00
	4H	22.90	24.27	23.30	24.62	25.00	22.50	23.87	22.90	24.22	24.60
	6H	23.37	24.65	23.78	25.01	25.40	22.99	24.26	23.40	24.63	25.02
	8H	23.53	24.74	23.95	25.13	25.53	23.15	24.37	23.58	24.76	25.15
	12H	23.63	24.80	24.06	25.18	25.61	23.26	24.43	23.69	24.81	25.24
4H	2H	21.06	22.43	21.46	22.78	23.16	20.79	22.16	21.18	22.51	22.88
	3H	23.03	24.19	23.44	24.58	24.98	22.72	23.87	23.13	24.27	24.67
	4H	23.82	24.86	24.25	25.27	25.71	23.49	24.53	23.92	24.95	25.38
	6H	24.42	25.33	24.88	25.77	26.23	24.11	25.02	24.56	25.46	25.92
	8H	24.62	25.47	25.08	25.92	26.38	24.32	25.17	24.78	25.61	26.08
	12H	24.77	25.54	25.25	26.01	26.48	24.48	25.24	24.96	25.72	26.19
8H	4H	24.10	24.95	24.56	25.40	25.86	23.81	24.66	24.27	25.11	25.57
	6H	24.82	25.53	25.32	26.02	26.49	24.56	25.26	25.05	25.75	26.23
	8H	25.10	25.73	25.60	26.24	26.72	24.84	25.48	25.35	25.98	26.47
	12H	25.32	25.88	25.83	26.37	26.94	25.07	25.64	25.58	26.13	26.69
12H	4H	24.13	24.90	24.61	25.37	25.84	23.85	24.61	24.33	25.09	25.56
	6H	24.87	25.51	25.38	26.02	26.50	24.61	25.25	25.12	25.76	26.24
	8H	25.20	25.77	25.71	26.26	26.82	24.96	25.52	25.47	26.01	26.57