

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: P242455

Luminaire Tested: S123DRP-S1165D940-X4F0-XX-UDD-F-W

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-2024  
Report Number: P242455  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-11)  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: S123DRP-S1165D940-X4F0-XX-UDD-F-W  
Description: DEFINE 3 DIRECT RECESSED WITH SATIN FLUSH DIFFUSER  
STANDARD LIGHT ENGINE  
Light Source: (92) 4000K CCT, 90 CRI LEDS  
Ballast/Driver: -

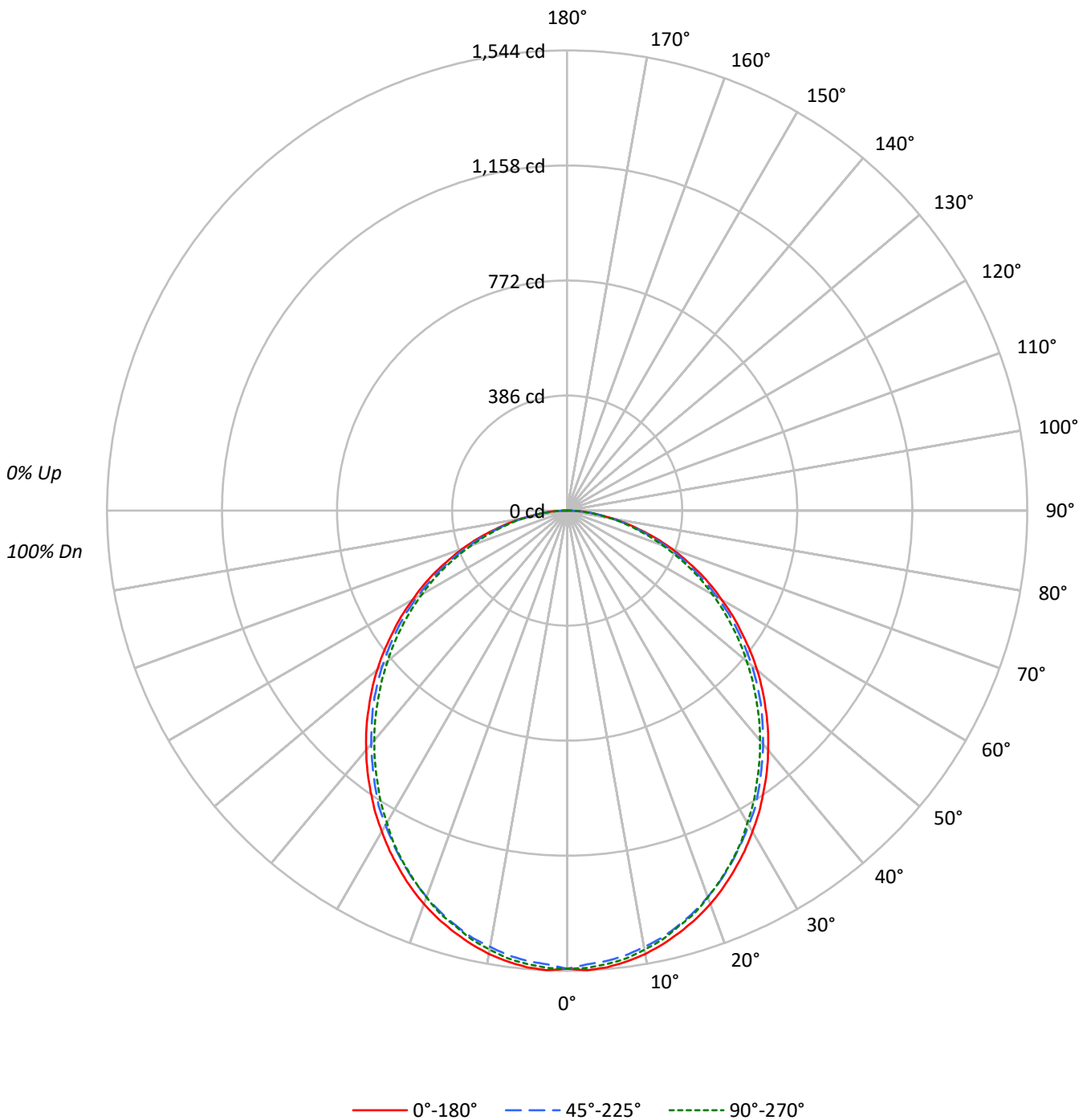
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4000.1 lumens  
Efficiency: N/A  
Efficacy: 97.3 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.18 / 1.3  
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 (A<sub>in</sub>): 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
RW	70	50	30	10	70	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
1	109	104	100	96	106	102	98	95	98	94	92	94	91	89	90	88	86
2	99	91	84	79	97	89	83	78	86	80	76	82	78	74	79	76	72
3	91	80	72	66	88	79	71	65	76	69	64	73	67	63	70	66	62
4	83	71	62	56	81	70	62	55	67	60	55	65	59	54	63	58	53
5	76	64	55	48	74	63	54	48	60	53	47	58	52	47	57	51	46
6	71	57	49	42	69	56	48	42	55	47	42	53	46	41	51	46	41
7	66	52	43	37	64	51	43	37	50	42	37	48	42	37	47	41	36
8	61	48	39	33	60	47	39	33	46	38	33	44	38	33	43	37	33
9	57	44	36	30	56	43	35	30	42	35	30	41	34	30	40	34	30
10	54	40	33	27	52	40	32	27	39	32	27	38	32	27	37	31	27

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

	0°	45°	90°
0°	18630	18630	18630
5°	18717	18461	18588
10°	18593	18300	18413
15°	18375	18093	18127
20°	18121	17797	17815
25°	17781	17445	17411
30°	17406	17055	16924
35°	17014	16643	16426
40°	16603	16185	15934
45°	16153	15767	15383
50°	15701	15252	14827
55°	15110	14719	14271
60°	14514	14097	13648
65°	13988	13417	13001
70°	13209	12645	12085
75°	12069	11638	11142
80°	10882	10422	10331
85°	9554	9193	8817

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 16153 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	144.9	3.6
10°-20°	409.1	10.2
20°-30°	604.3	15.1
30°-40°	705.7	17.6
40°-50°	709.5	17.7
50°-60°	623.2	15.6
60°-70°	464.2	11.6
70°-80°	264.1	6.6
80°-90°	75.1	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°	1158.3	29.0
0°-40°	1864.0	46.6
0°-60°	3196.7	79.9
0°-90°	4000.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4000.1	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1537	1537	1537	1537	1537	
5°	1538	1532	1517	1530	1528	146
15°	1464	1459	1442	1452	1444	413
25°	1330	1322	1304	1306	1302	612
35°	1150	1142	1125	1117	1110	719
45°	942	937	920	904	897	727
55°	715	714	696	682	675	640
65°	488	481	468	457	453	481
75°	258	252	248	242	238	275
85°	69	66	66	63	63	78
90°	0	0	0	0	0	

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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1537.0	1537.0	1537.0	1537.0	1537.0
2.5°	1543.6	1538.3	1523.8	1537.0	1535.7
5°	1538.3	1531.7	1517.2	1530.4	1527.7
7.5°	1526.4	1519.8	1505.3	1517.2	1515.9
10°	1510.6	1504.0	1486.8	1498.7	1496.0
12.5°	1489.4	1484.1	1468.3	1476.2	1474.9
15°	1464.3	1459.0	1441.8	1452.4	1444.5
17.5°	1436.6	1430.0	1412.8	1420.7	1418.1
20°	1404.8	1396.9	1379.7	1385.0	1381.1
22.5°	1369.2	1361.2	1344.0	1348.0	1342.7
25°	1329.5	1321.6	1304.4	1305.7	1301.8
27.5°	1288.5	1280.6	1262.1	1263.4	1259.5
30°	1243.6	1237.0	1218.5	1218.5	1209.2
32.5°	1198.7	1189.4	1176.2	1167.0	1163.0
35°	1149.8	1141.8	1124.7	1116.7	1110.1
37.5°	1100.9	1090.3	1073.1	1063.9	1059.9
40°	1049.3	1041.4	1022.9	1012.3	1007.0
42.5°	997.8	988.5	970.0	959.5	954.2
45°	942.3	937.0	919.8	904.0	897.4
47.5°	888.1	880.2	864.3	848.5	843.2
50°	832.6	826.0	808.8	794.3	786.3
52.5°	774.4	770.5	752.0	740.1	732.2
55°	715.0	713.7	696.5	681.9	675.3
57.5°	659.5	654.2	641.0	627.8	619.8
60°	598.7	597.4	581.5	569.6	563.0
62.5°	544.5	540.5	524.7	512.8	508.8
65°	487.7	481.1	467.8	457.3	453.3
67.5°	426.9	421.6	411.0	401.8	396.5
70°	372.7	364.8	356.8	347.6	341.0
72.5°	315.9	310.6	301.3	293.4	290.7
75°	257.7	252.4	248.5	241.8	237.9
77.5°	206.2	203.5	198.2	193.0	193.0
80°	155.9	152.0	149.3	148.0	148.0
82.5°	107.0	107.0	107.0	104.4	103.1
85°	68.7	66.1	66.1	63.4	63.4
87.5°	34.4	30.4	29.1	27.8	27.8
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	21.52	23.14	21.89	23.45	23.77	21.21	22.82	21.57	23.14	23.45
	3H	23.29	24.75	23.67	25.08	25.44	22.92	24.38	23.30	24.71	25.07
	4H	23.95	25.32	24.35	25.67	26.05	23.56	24.94	23.96	25.28	25.66
	6H	24.44	25.71	24.85	26.08	26.47	24.05	25.32	24.46	25.69	26.08
	8H	24.59	25.81	25.01	26.20	26.60	24.20	25.42	24.63	25.81	26.21
	12H	24.69	25.86	25.12	26.24	26.67	24.31	25.48	24.74	25.86	26.29
4H	2H	22.10	23.48	22.50	23.82	24.20	21.85	23.23	22.25	23.57	23.95
	3H	24.09	25.25	24.50	25.64	26.04	23.79	24.94	24.19	25.34	25.74
	4H	24.88	25.92	25.31	26.33	26.77	24.55	25.59	24.98	26.00	26.44
	6H	25.49	26.41	25.95	26.85	27.30	25.16	26.07	25.61	26.51	26.97
	8H	25.70	26.55	26.16	26.99	27.46	25.37	26.22	25.83	26.66	27.13
	12H	25.85	26.61	26.33	27.09	27.56	25.52	26.28	26.00	26.76	27.23
8H	4H	25.16	26.01	25.62	26.46	26.92	24.87	25.72	25.33	26.17	26.63
	6H	25.90	26.61	26.39	27.10	27.57	25.60	26.31	26.10	26.80	27.28
	8H	26.17	26.81	26.68	27.32	27.80	25.89	26.52	26.39	27.03	27.51
	12H	26.40	26.96	26.91	27.45	28.01	26.11	26.67	26.62	27.16	27.72
12H	4H	25.19	25.96	25.67	26.43	26.90	24.91	25.67	25.39	26.15	26.62
	6H	25.95	26.59	26.46	27.09	27.58	25.67	26.30	26.17	26.81	27.30
	8H	26.28	26.84	26.79	27.33	27.90	26.01	26.57	26.51	27.06	27.62