

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: P242519

Luminaire Tested: S123DRP-S1165D935-X4F0-XX-UDD-D-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P242519
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-15)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: S123DRP-S1165D935-X4F0-XX-UDD-D-W
Description: DEFINE 3 DIRECT RECESSED WITH SATIN DROP DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 3500K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

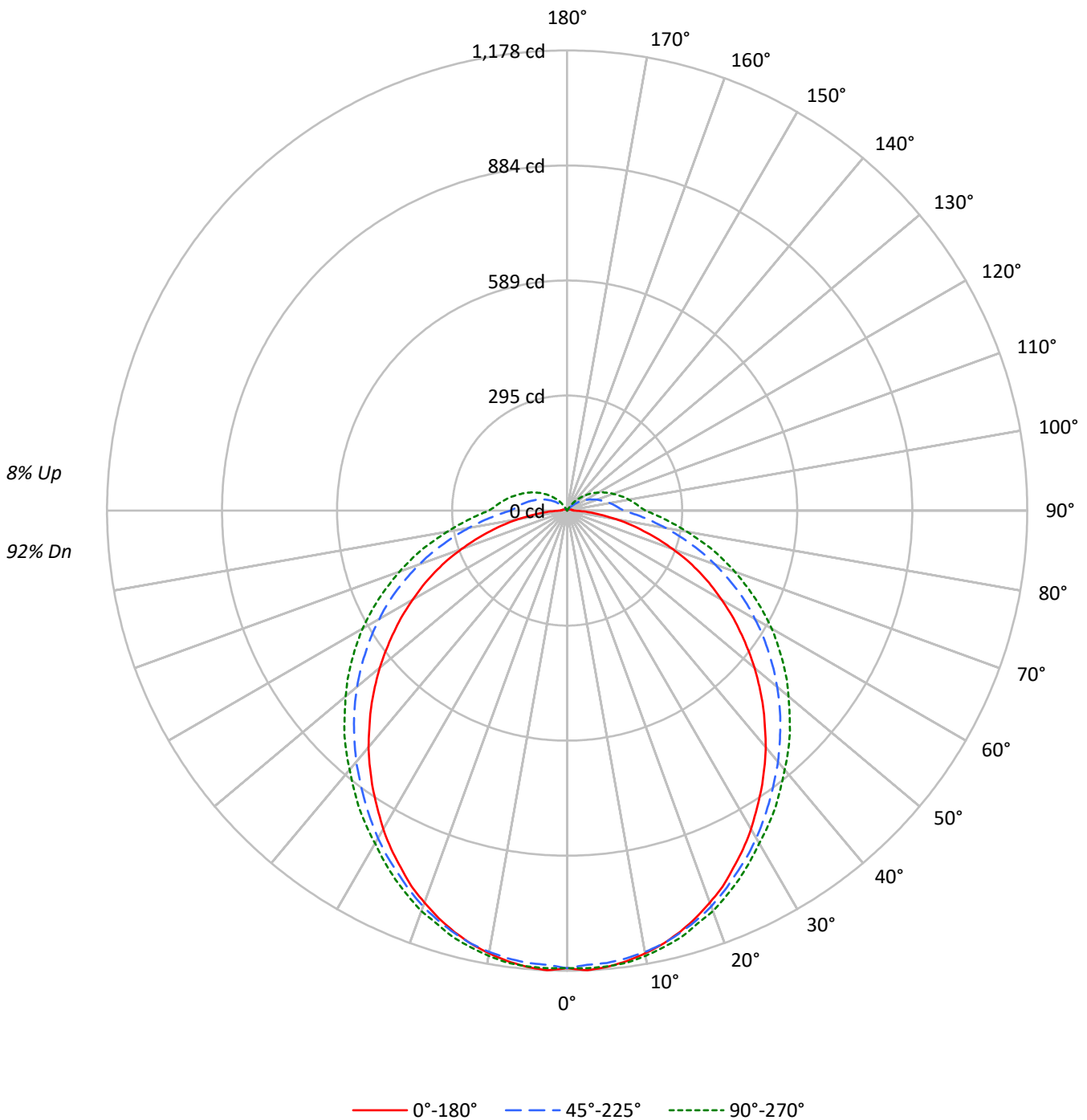
Lumens per Lamp: N/A
Luminaire Lumens: 3937.0 lumens
Efficiency: N/A
Efficacy: 95.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.25 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.23' x L: 3.88' x H: 0.08')
CIE Type: Direct

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										
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	117	117	117	117	113	113	113	113	106	106	106	100	100	100	94	94	94	94	92					92														
1	105	100	95	90	102	97	92	88	91	87	84	85	82	80	80	78	76	73					73															
2	95	86	79	72	92	83	77	71	79	73	68	74	69	65	70	66	63	60					60															
3	86	75	67	60	83	73	65	59	69	62	56	65	59	54	61	56	52	50					50															
4	79	66	57	50	76	64	56	49	61	54	48	57	51	46	54	49	45	42					42															
5	72	59	50	43	70	58	49	42	54	47	41	52	45	40	49	43	39	36					36															
6	67	53	44	37	64	52	43	37	49	42	36	47	40	35	44	38	34	32					32															
7	62	48	39	33	60	47	38	32	45	37	32	42	36	31	40	35	30	28					28															
8	58	44	35	29	56	43	35	29	41	33	28	39	32	28	37	31	27	25					25															
9	54	40	32	26	52	39	31	26	37	30	25	36	29	25	34	28	24	22					22															
10	50	37	29	24	49	36	29	24	35	28	23	33	27	23	32	26	22	20					20															

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	14199	14199	14199
5°	14242	13816	13814
10°	14113	13473	13387
15°	13932	13088	12928
20°	13671	12655	12428
25°	13349	12160	11908
30°	13019	11714	11380
35°	12649	11243	10957
40°	12297	10815	10505
45°	11906	10401	10138
50°	11519	9991	9737
55°	11094	9572	9372
60°	10676	9144	8998
65°	10251	8688	8554
70°	9607	8174	8098
75°	8796	7588	7632
80°	7858	7001	7098
85°	6977	6560	6746

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 11906 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	111.1	2.8
10°-20°	316.8	8.0
20°-30°	473.7	12.0
30°-40°	565.6	14.4
40°-50°	591.8	15.0
50°-60°	555.3	14.1
60°-70°	463.9	11.8
70°-80°	331.7	8.4
80°-90°	197.4	5.0
90°-100°	124.0	3.2
100°-110°	91.1	2.3
110°-120°	60.9	1.5
120°-130°	34.7	0.9
130°-140°	15.6	0.4
140°-150°	3.3	0.1
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	901.6	22.9
0°-40°	1467.2	37.3
0°-60°	2614.4	66.4
0°-90°	3607.3	91.6
90°-120°	276.0	7.0
90°-150°	329.6	8.4
90°-180°	330.0	8.4
0°-180°	3937.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1171	1171	1171	1171	1171	
5°	1173	1170	1162	1173	1171	111
15°	1117	1120	1119	1132	1131	315
25°	1008	1021	1025	1041	1041	465
35°	868	888	905	924	929	543
45°	710	740	772	796	806	547
55°	541	583	629	664	674	484
65°	374	424	480	518	531	370
75°	203	263	327	369	384	217
85°	62	126	194	237	250	64
90°	17	79	144	188	200	12
95°	14	64	126	166	179	11
105°	10	41	96	131	143	10
115°	6	22	68	98	108	7
125°	4	4	41	68	77	4
135°	3	1	15	38	45	2
145°	1	0	0	10	15	1
155°	0	0	0	0	0	0
165°	0	0	0	0	0	0
175°	0	0	0	0	0	0
180°	0	0	0	0	0	0



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1171.4	1171.4	1171.4	1171.4	1171.4
2.5°	1177.8	1174.0	1163.8	1174.0	1172.7
5°	1172.7	1170.2	1162.5	1172.7	1171.4
7.5°	1163.8	1163.8	1156.1	1168.9	1167.6
10°	1151.0	1153.6	1147.2	1159.9	1157.4
12.5°	1135.7	1139.5	1135.7	1147.2	1144.6
15°	1116.6	1120.4	1119.1	1131.9	1130.6
17.5°	1093.6	1101.2	1100.0	1111.5	1108.9
20°	1068.1	1075.7	1078.3	1089.8	1091.0
22.5°	1041.3	1048.9	1052.8	1068.1	1066.8
25°	1008.1	1020.9	1024.7	1041.3	1041.3
27.5°	976.2	990.2	997.9	1011.9	1013.2
30°	941.7	958.3	968.5	983.8	983.8
32.5°	903.5	922.6	936.6	953.2	957.1
35°	867.7	888.1	904.7	923.9	929.0
37.5°	829.4	852.4	871.6	893.2	897.1
40°	791.2	814.1	839.7	861.3	866.5
42.5°	749.1	778.4	805.2	829.4	837.1
45°	709.5	740.1	772.0	796.3	806.5
47.5°	667.4	701.8	737.6	764.4	772.0
50°	626.5	662.3	701.8	731.2	740.1
52.5°	583.2	621.4	666.1	696.7	708.2
55°	541.1	583.2	629.1	663.6	673.8
57.5°	500.2	543.6	593.4	627.8	639.3
60°	456.8	502.8	555.1	590.8	604.9
62.5°	416.0	463.2	519.4	555.1	567.9
65°	373.9	423.7	479.8	518.1	530.8
67.5°	331.8	384.1	440.2	482.4	492.6
70°	287.1	342.0	403.2	444.1	456.8
72.5°	246.3	301.2	365.0	407.1	419.8
75°	202.9	262.9	326.7	368.8	384.1
77.5°	165.9	225.9	289.7	334.3	345.8
80°	126.3	188.9	255.2	298.6	311.4
82.5°	91.9	155.7	223.3	266.7	279.5
85°	62.5	126.3	194.0	237.3	250.1
87.5°	38.3	102.1	167.2	210.6	223.3
90°	16.6	79.1	144.2	187.6	200.3
92.5°	15.3	70.2	134.0	176.1	187.6
95°	14.0	63.8	126.3	165.9	178.6
97.5°	12.8	58.7	118.7	157.0	169.7
100°	11.5	52.3	111.0	148.0	160.8
102.5°	10.2	45.9	103.4	139.1	151.9
105°	10.2	40.8	95.7	131.4	142.9
107.5°	8.9	35.7	88.0	122.5	134.0
110°	7.7	30.6	81.7	114.8	125.1



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	7.7	25.5	74.0	105.9	117.4
115°	6.4	21.7	67.6	98.3	108.5
117.5°	6.4	16.6	60.0	90.6	100.8
120°	5.1	11.5	53.6	82.9	91.9
122.5°	5.1	7.7	47.2	75.3	84.2
125°	3.8	3.8	40.8	67.6	76.6
127.5°	3.8	2.6	34.5	60.0	68.9
130°	3.8	2.6	28.1	52.3	60.0
132.5°	2.6	2.6	21.7	44.7	53.6
135°	2.6	1.3	15.3	38.3	44.7
137.5°	2.6	1.3	10.2	30.6	37.0
140°	1.3	1.3	5.1	24.2	30.6
142.5°	1.3	0.0	0.0	16.6	23.0
145°	1.3	0.0	0.0	10.2	15.3
147.5°	0.0	0.0	0.0	3.8	8.9
150°	0.0	0.0	0.0	0.0	2.6
152.5°	0.0	0.0	0.0	0.0	0.0
155°	0.0	0.0	0.0	0.0	0.0
157.5°	0.0	0.0	0.0	0.0	0.0
160°	0.0	0.0	0.0	0.0	0.0
162.5°	0.0	0.0	0.0	0.0	0.0
165°	0.0	0.0	0.0	0.0	0.0
167.5°	0.0	0.0	0.0	0.0	0.0
170°	0.0	0.0	0.0	0.0	0.0
172.5°	0.0	0.0	0.0	0.0	0.0
175°	0.0	0.0	0.0	0.0	0.0
177.5°	0.0	0.0	0.0	0.0	0.0
180°	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	18.27	19.77	18.76	20.26	20.77	20.27	21.77	20.76	22.25	22.77
	3H	19.83	21.20	20.33	21.69	22.25	22.65	24.02	23.15	24.51	25.06
	4H	20.35	21.65	20.87	22.16	22.73	23.76	25.06	24.28	25.57	26.14
	6H	20.69	21.90	21.23	22.42	23.01	24.87	26.08	25.40	26.60	27.18
	8H	20.78	21.94	21.33	22.48	23.08	25.42	26.58	25.97	27.12	27.72
	12H	20.83	21.94	21.38	22.48	23.10	26.03	27.14	26.58	27.68	28.30
4H	2H	19.18	20.48	19.70	20.98	21.55	20.73	22.03	21.25	22.53	23.10
	3H	20.98	22.09	21.51	22.64	23.23	23.32	24.43	23.86	24.98	25.57
	4H	21.64	22.66	22.20	23.21	23.84	24.59	25.60	25.14	26.16	26.78
	6H	22.12	23.01	22.69	23.60	24.23	25.87	26.76	26.45	27.35	27.99
	8H	22.25	23.09	22.83	23.68	24.33	26.52	27.36	27.10	27.95	28.60
	12H	22.34	23.10	22.94	23.71	24.37	27.24	28.00	27.84	28.61	29.27
8H	4H	22.28	23.12	22.86	23.70	24.35	24.81	25.65	25.39	26.24	26.89
	6H	22.93	23.65	23.55	24.27	24.93	26.25	26.96	26.87	27.59	28.25
	8H	23.17	23.81	23.79	24.44	25.11	27.03	27.67	27.66	28.31	28.98
	12H	23.34	23.91	23.96	24.53	25.27	27.91	28.48	28.54	29.11	29.84
12H	4H	22.43	23.19	23.03	23.81	24.46	24.82	25.59	25.43	26.20	26.85
	6H	23.17	23.82	23.80	24.45	25.12	26.29	26.94	26.92	27.57	28.24
	8H	23.50	24.07	24.13	24.70	25.43	27.14	27.71	27.76	28.33	29.07