

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: P242514

Luminaire Tested: S123DRP-S1165D930-X4F0-XX-UDD-D-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P242514
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-S1165D930-X4F0-XX-UDD-D-W
Description: DEFINE 3 DIRECT RECESSED WITH SATIN DROP DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 3000K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

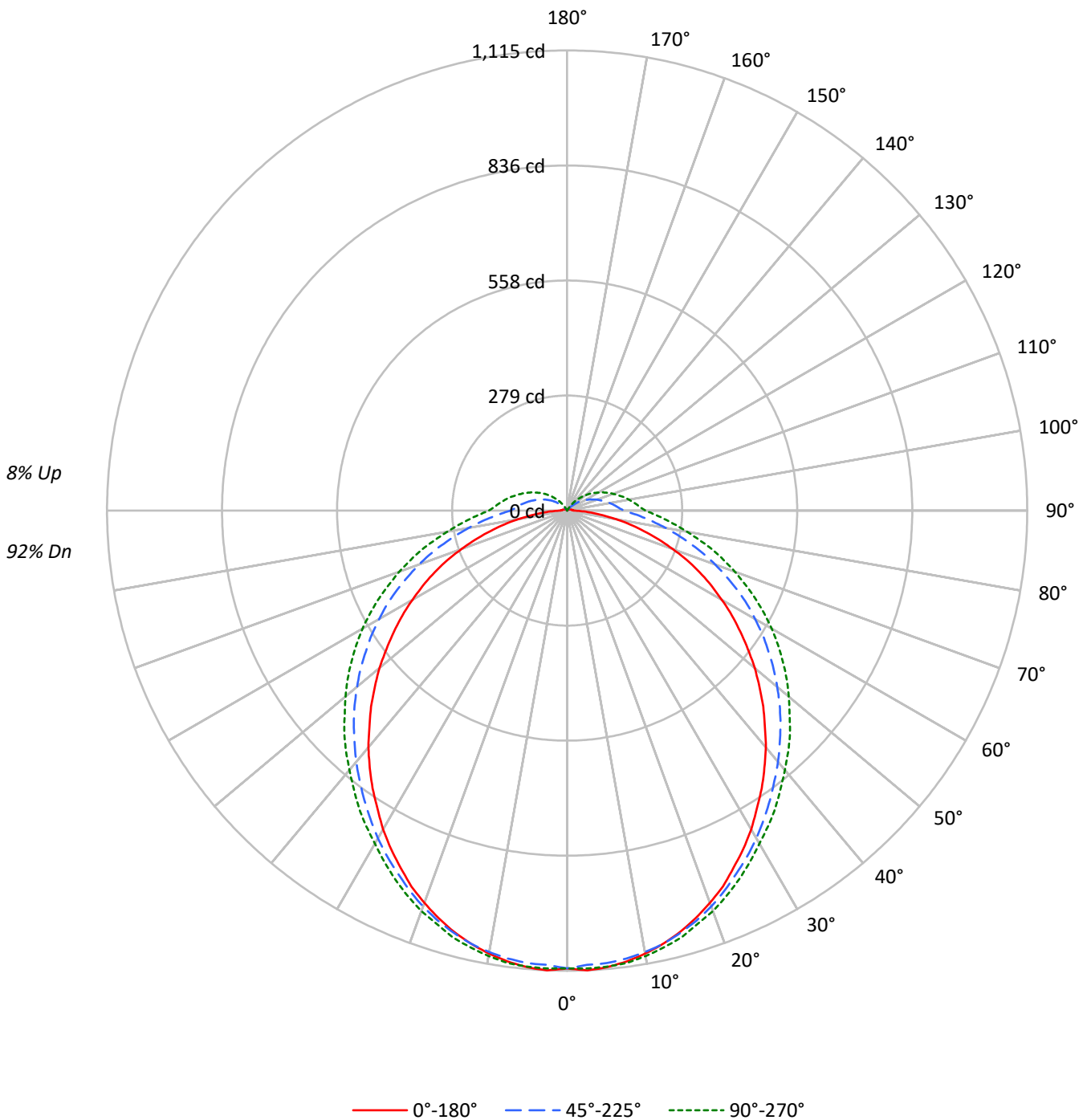
Lumens per Lamp: N/A
Luminaire Lumens: 3728.0 lumens
Efficiency: N/A
Efficacy: 90.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.25 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.23' x L: 3.88' x H: 0.08')
CIE Type: Direct

Input Watts (W): 41.1
Input Voltage (V): 120
Input Current (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										
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°	13446	13446	13446
5°	13487	13082	13081
10°	13364	12758	12677
15°	13192	12394	12242
20°	12945	11982	11769
25°	12640	11515	11275
30°	12329	11092	10777
35°	11979	10647	10375
40°	11645	10241	9948
45°	11274	9849	9600
50°	10908	9462	9220
55°	10504	9064	8874
60°	10111	8658	8520
65°	9706	8226	8101
70°	9099	7740	7669
75°	8328	7184	7226
80°	7441	6631	6720
85°	6609	6212	6387

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 11274 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	105.2	2.8
10°-20°	300.0	8.0
20°-30°	448.6	12.0
30°-40°	535.6	14.4
40°-50°	560.4	15.0
50°-60°	525.9	14.1
60°-70°	439.2	11.8
70°-80°	314.1	8.4
80°-90°	186.9	5.0
90°-100°	117.4	3.2
100°-110°	86.3	2.3
110°-120°	57.6	1.5
120°-130°	32.9	0.9
130°-140°	14.7	0.4
140°-150°	3.1	0.1
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	853.8	22.9
0°-40°	1389.4	37.3
0°-60°	2475.6	66.4
0°-90°	3415.8	91.6
90°-120°	261.4	7.0
90°-150°	312.1	8.4
90°-180°	312.0	8.4
0°-180°	3728.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1109	1109	1109	1109	1109	
5°	1110	1108	1101	1110	1109	105
15°	1057	1061	1060	1072	1071	298
25°	955	967	970	986	986	440
35°	822	841	857	875	880	514
45°	672	701	731	754	764	518
55°	512	552	596	628	638	459
65°	354	401	454	491	503	350
75°	192	249	309	349	364	205
85°	59	120	184	225	237	61
90°	16	75	136	178	190	11
95°	13	60	120	157	169	10
105°	10	39	91	124	135	10
115°	6	20	64	93	103	6
125°	4	4	39	64	72	4
135°	2	1	14	36	42	2
145°	1	0	0	10	14	0
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°	1109.3	1109.3	1109.3	1109.3	1109.3
2.5°	1115.3	1111.7	1102.0	1111.7	1110.5
5°	1110.5	1108.0	1100.8	1110.5	1109.3
7.5°	1102.0	1102.0	1094.8	1106.8	1105.6
10°	1089.9	1092.3	1086.3	1098.4	1096.0
12.5°	1075.4	1079.0	1075.4	1086.3	1083.9
15°	1057.3	1060.9	1059.7	1071.8	1070.6
17.5°	1035.5	1042.8	1041.6	1052.5	1050.0
20°	1011.4	1018.6	1021.0	1031.9	1033.1
22.5°	986.0	993.3	996.9	1011.4	1010.2
25°	954.6	966.7	970.3	986.0	986.0
27.5°	924.4	937.7	944.9	958.2	959.4
30°	891.8	907.5	917.1	931.6	931.6
32.5°	855.5	873.6	886.9	902.6	906.3
35°	821.7	841.0	856.7	874.8	879.7
37.5°	785.4	807.2	825.3	845.8	849.5
40°	749.2	770.9	795.1	815.6	820.5
42.5°	709.3	737.1	762.5	785.4	792.7
45°	671.8	700.8	731.0	754.0	763.7
47.5°	632.0	664.6	698.4	723.8	731.0
50°	593.3	627.1	664.6	692.4	700.8
52.5°	552.2	588.5	630.8	659.8	670.6
55°	512.3	552.2	595.7	628.3	638.0
57.5°	473.7	514.8	561.9	594.5	605.4
60°	432.6	476.1	525.6	559.5	572.8
62.5°	393.9	438.6	491.8	525.6	537.7
65°	354.0	401.2	454.3	490.6	502.7
67.5°	314.2	363.7	416.9	456.8	466.4
70°	271.9	323.8	381.8	420.5	432.6
72.5°	233.2	285.2	345.6	385.5	397.5
75°	192.1	248.9	309.3	349.2	363.7
77.5°	157.1	213.9	274.3	316.6	327.5
80°	119.6	178.8	241.7	282.8	294.8
82.5°	87.0	147.4	211.5	252.5	264.6
85°	59.2	119.6	183.7	224.8	236.8
87.5°	36.3	96.7	158.3	199.4	211.5
90°	15.7	74.9	136.5	177.6	189.7
92.5°	14.5	66.5	126.9	166.8	177.6
95°	13.3	60.4	119.6	157.1	169.2
97.5°	12.1	55.6	112.4	148.6	160.7
100°	10.9	49.5	105.1	140.2	152.3
102.5°	9.7	43.5	97.9	131.7	143.8
105°	9.7	38.7	90.6	124.5	135.3
107.5°	8.5	33.8	83.4	116.0	126.9
110°	7.3	29.0	77.3	108.8	118.4



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	7.3	24.2	70.1	100.3	111.2
115°	6.0	20.5	64.0	93.0	102.7
117.5°	6.0	15.7	56.8	85.8	95.5
120°	4.8	10.9	50.8	78.5	87.0
122.5°	4.8	7.3	44.7	71.3	79.8
125°	3.6	3.6	38.7	64.0	72.5
127.5°	3.6	2.4	32.6	56.8	65.3
130°	3.6	2.4	26.6	49.5	56.8
132.5°	2.4	2.4	20.5	42.3	50.8
135°	2.4	1.2	14.5	36.3	42.3
137.5°	2.4	1.2	9.7	29.0	35.0
140°	1.2	1.2	4.8	23.0	29.0
142.5°	1.2	0.0	0.0	15.7	21.8
145°	1.2	0.0	0.0	9.7	14.5
147.5°	0.0	0.0	0.0	3.6	8.5
150°	0.0	0.0	0.0	0.0	2.4
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	18.08	19.59	18.57	20.07	20.58	20.08	21.58	20.57	22.06	22.58
	3H	19.64	21.01	20.14	21.50	22.06	22.46	23.83	22.96	24.32	24.87
	4H	20.16	21.46	20.68	21.97	22.54	23.57	24.87	24.09	25.38	25.95
	6H	20.50	21.71	21.04	22.23	22.82	24.68	25.89	25.21	26.41	26.99
	8H	20.59	21.75	21.14	22.29	22.89	25.23	26.39	25.78	26.94	27.53
	12H	20.64	21.75	21.19	22.29	22.91	25.84	26.95	26.39	27.49	28.11
4H	2H	18.99	20.29	19.51	20.80	21.37	20.54	21.84	21.06	22.34	22.91
	3H	20.79	21.90	21.33	22.45	23.04	23.13	24.24	23.67	24.79	25.38
	4H	21.45	22.47	22.01	23.03	23.65	24.40	25.41	24.95	25.97	26.59
	6H	21.93	22.82	22.50	23.41	24.04	25.68	26.58	26.26	27.16	27.80
	8H	22.06	22.90	22.64	23.49	24.14	26.33	27.17	26.91	27.76	28.41
	12H	22.15	22.91	22.75	23.53	24.18	27.05	27.81	27.65	28.42	29.08
8H	4H	22.09	22.93	22.67	23.51	24.16	24.62	25.46	25.20	26.05	26.70
	6H	22.74	23.46	23.36	24.08	24.74	26.06	26.78	26.68	27.40	28.06
	8H	22.98	23.62	23.60	24.25	24.92	26.84	27.48	27.47	28.12	28.79
	12H	23.15	23.72	23.77	24.34	25.08	27.72	28.29	28.35	28.92	29.65
12H	4H	22.24	23.01	22.84	23.62	24.27	24.63	25.40	25.24	26.01	26.66
	6H	22.99	23.63	23.61	24.26	24.93	26.10	26.75	26.73	27.38	28.05
	8H	23.31	23.88	23.94	24.51	25.24	26.95	27.52	27.57	28.14	28.88