

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: P242500

Luminaire Tested: S123DRP-S1165D830-X4F0-XX-UDD-D-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P242500
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-S1165D830-X4F0-XX-UDD-D-W
Description: DEFINE 3 DIRECT RECESSED WITH SATIN DROP DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 3000K CCT, 80 CRI LEDS
Ballast/Driver: -

Summary

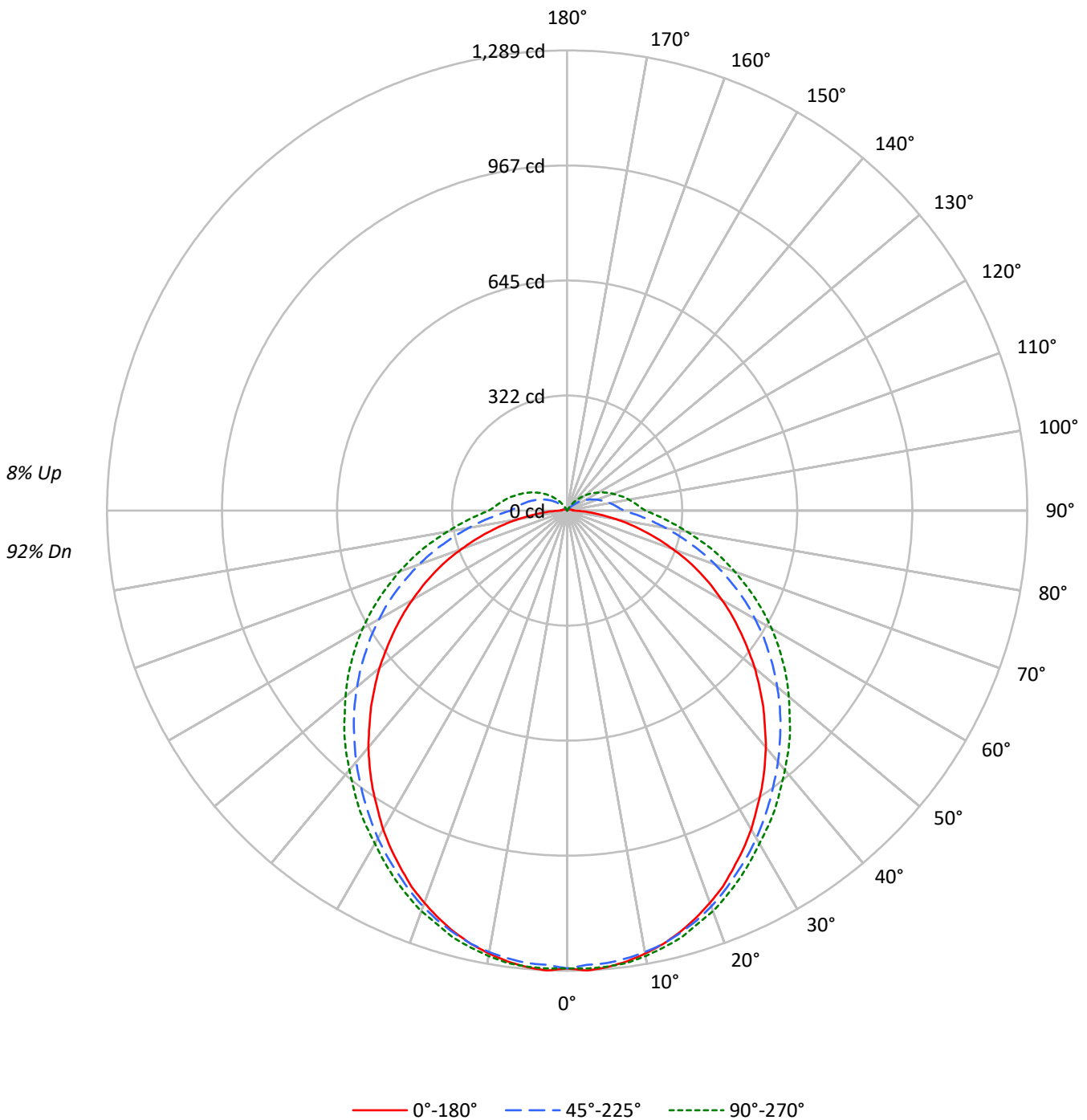
Lumens per Lamp: N/A
Luminaire Lumens: 4309.8 lumens
Efficiency: N/A
Efficacy: 104.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.25 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.23' x L: 3.88' x H: 0.08')
CIE Type: Direct

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

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	15544	15544	15544
5°	15591	15124	15123
10°	15450	14748	14655
15°	15251	14328	14153
20°	14965	13853	13606
25°	14613	13312	13035
30°	14252	12824	12459
35°	13847	12308	11995
40°	13462	11839	11500
45°	13034	11386	11099
50°	12611	10938	10659
55°	12144	10479	10260
60°	11688	10010	9848
65°	11222	9510	9364
70°	10517	8948	8866
75°	9629	8306	8355
80°	8604	7665	7769
85°	7636	7179	7385

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 13034 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	121.7	2.8
10°-20°	346.8	8.0
20°-30°	518.6	12.0
30°-40°	619.2	14.4
40°-50°	647.8	15.0
50°-60°	608.0	14.1
60°-70°	507.8	11.8
70°-80°	363.1	8.4
80°-90°	216.1	5.0
90°-100°	135.8	3.2
100°-110°	99.8	2.3
110°-120°	66.6	1.5
120°-130°	38.0	0.9
130°-140°	17.1	0.4
140°-150°	3.6	0.1
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	987.0	22.9
0°-40°	1606.2	37.3
0°-60°	2862.0	66.4
0°-90°	3948.9	91.6
90°-120°	302.2	7.0
90°-150°	360.8	8.4
90°-180°	361.0	8.4
0°-180°	4309.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1282	1282	1282	1282	1282	
5°	1284	1281	1273	1284	1282	122
15°	1222	1226	1225	1239	1238	344
25°	1104	1118	1122	1140	1140	509
35°	950	972	990	1011	1017	594
45°	777	810	845	872	883	599
55°	592	638	689	726	738	530
65°	409	464	525	567	581	405
75°	222	288	358	404	420	237
85°	68	138	212	260	274	70
90°	18	87	158	205	219	13
95°	15	70	138	182	196	12
105°	11	45	105	144	156	11
115°	7	24	74	108	119	7
125°	4	4	45	74	84	4
135°	3	1	17	42	49	2
145°	1	0	0	11	17	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°	1282.4	1282.4	1282.4	1282.4	1282.4
2.5°	1289.4	1285.2	1274.0	1285.2	1283.8
5°	1283.8	1281.0	1272.6	1283.8	1282.4
7.5°	1274.0	1274.0	1265.6	1279.6	1278.2
10°	1260.0	1262.8	1255.8	1269.8	1267.0
12.5°	1243.3	1247.5	1243.3	1255.8	1253.0
15°	1222.3	1226.5	1225.1	1239.1	1237.7
17.5°	1197.2	1205.5	1204.1	1216.7	1213.9
20°	1169.2	1177.6	1180.4	1193.0	1194.4
22.5°	1139.9	1148.3	1152.5	1169.2	1167.8
25°	1103.6	1117.5	1121.7	1139.9	1139.9
27.5°	1068.6	1084.0	1092.4	1107.8	1109.2
30°	1030.9	1049.1	1060.3	1077.0	1077.0
32.5°	989.0	1010.0	1025.3	1043.5	1047.7
35°	949.9	972.3	990.4	1011.4	1017.0
37.5°	908.0	933.1	954.1	977.8	982.0
40°	866.1	891.2	919.2	942.9	948.5
42.5°	820.0	852.1	881.5	908.0	916.4
45°	776.7	810.2	845.1	871.7	882.9
47.5°	730.6	768.3	807.4	836.8	845.1
50°	685.9	725.0	768.3	800.4	810.2
52.5°	638.4	680.3	729.2	762.7	775.3
55°	592.3	638.4	688.7	726.4	737.6
57.5°	547.6	595.1	649.6	687.3	699.9
60°	500.1	550.4	607.7	646.8	662.1
62.5°	455.4	507.1	568.5	607.7	621.6
65°	409.3	463.8	525.2	567.2	581.1
67.5°	363.2	420.5	481.9	528.0	539.2
70°	314.3	374.4	441.4	486.1	500.1
72.5°	269.6	329.7	399.5	445.6	459.6
75°	222.1	287.8	357.6	403.7	420.5
77.5°	181.6	247.3	317.1	366.0	378.6
80°	138.3	206.7	279.4	326.9	340.8
82.5°	100.6	170.4	244.5	292.0	305.9
85°	68.4	138.3	212.3	259.8	273.8
87.5°	41.9	111.8	183.0	230.5	244.5
90°	18.2	86.6	157.9	205.3	219.3
92.5°	16.8	76.8	146.7	192.8	205.3
95°	15.4	69.8	138.3	181.6	195.6
97.5°	14.0	64.3	129.9	171.8	185.8
100°	12.6	57.3	121.5	162.0	176.0
102.5°	11.2	50.3	113.2	152.3	166.2
105°	11.2	44.7	104.8	143.9	156.5
107.5°	9.8	39.1	96.4	134.1	146.7
110°	8.4	33.5	89.4	125.7	136.9



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	8.4	27.9	81.0	115.9	128.5
115°	7.0	23.7	74.0	107.6	118.7
117.5°	7.0	18.2	65.7	99.2	110.4
120°	5.6	12.6	58.7	90.8	100.6
122.5°	5.6	8.4	51.7	82.4	92.2
125°	4.2	4.2	44.7	74.0	83.8
127.5°	4.2	2.8	37.7	65.7	75.4
130°	4.2	2.8	30.7	57.3	65.7
132.5°	2.8	2.8	23.7	48.9	58.7
135°	2.8	1.4	16.8	41.9	48.9
137.5°	2.8	1.4	11.2	33.5	40.5
140°	1.4	1.4	5.6	26.5	33.5
142.5°	1.4	0.0	0.0	18.2	25.1
145°	1.4	0.0	0.0	11.2	16.8
147.5°	0.0	0.0	0.0	4.2	9.8
150°	0.0	0.0	0.0	0.0	2.8
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	18.58	20.09	19.07	20.57	21.09	20.58	22.09	21.07	22.57	23.08
	3H	20.14	21.51	20.64	22.00	22.56	22.96	24.33	23.46	24.82	25.38
	4H	20.66	21.96	21.19	22.47	23.04	24.07	25.37	24.59	25.88	26.45
	6H	21.01	22.22	21.54	22.74	23.32	25.18	26.39	25.72	26.91	27.50
	8H	21.09	22.25	21.64	22.80	23.39	25.74	26.89	26.28	27.44	28.03
	12H	21.14	22.25	21.70	22.79	23.41	26.34	27.45	26.90	27.99	28.61
4H	2H	19.49	20.79	20.01	21.30	21.87	21.04	22.34	21.56	22.85	23.42
	3H	21.29	22.40	21.83	22.95	23.54	23.63	24.74	24.17	25.29	25.88
	4H	21.96	22.97	22.51	23.53	24.15	24.90	25.92	25.46	26.47	27.10
	6H	22.43	23.33	23.01	23.91	24.55	26.19	27.08	26.76	27.66	28.30
	8H	22.57	23.41	23.15	23.99	24.64	26.84	27.68	27.42	28.26	28.91
	12H	22.65	23.42	23.26	24.03	24.68	27.55	28.31	28.15	28.93	29.58
8H	4H	22.59	23.43	23.17	24.02	24.67	25.13	25.97	25.71	26.55	27.20
	6H	23.25	23.96	23.86	24.59	25.24	26.57	27.28	27.18	27.91	28.56
	8H	23.48	24.12	24.11	24.76	25.43	27.34	27.99	27.97	28.62	29.29
	12H	23.65	24.22	24.28	24.85	25.58	28.23	28.80	28.85	29.42	30.16
12H	4H	22.75	23.51	23.35	24.12	24.78	25.14	25.90	25.74	26.51	27.17
	6H	23.49	24.13	24.11	24.77	25.44	26.61	27.25	27.23	27.89	28.56
	8H	23.81	24.38	24.44	25.01	25.74	27.45	28.02	28.08	28.65	29.38