

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: P243383

Luminaire Tested: S123DRP-H1000D940-X4F0-XX-UDD-D-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P243383
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-54)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: S123DRP-H1000D940-X4F0-XX-UDD-D-W
Description: DEFINE 3 DIRECT RECESSED WITH SATIN DROP DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 4000K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

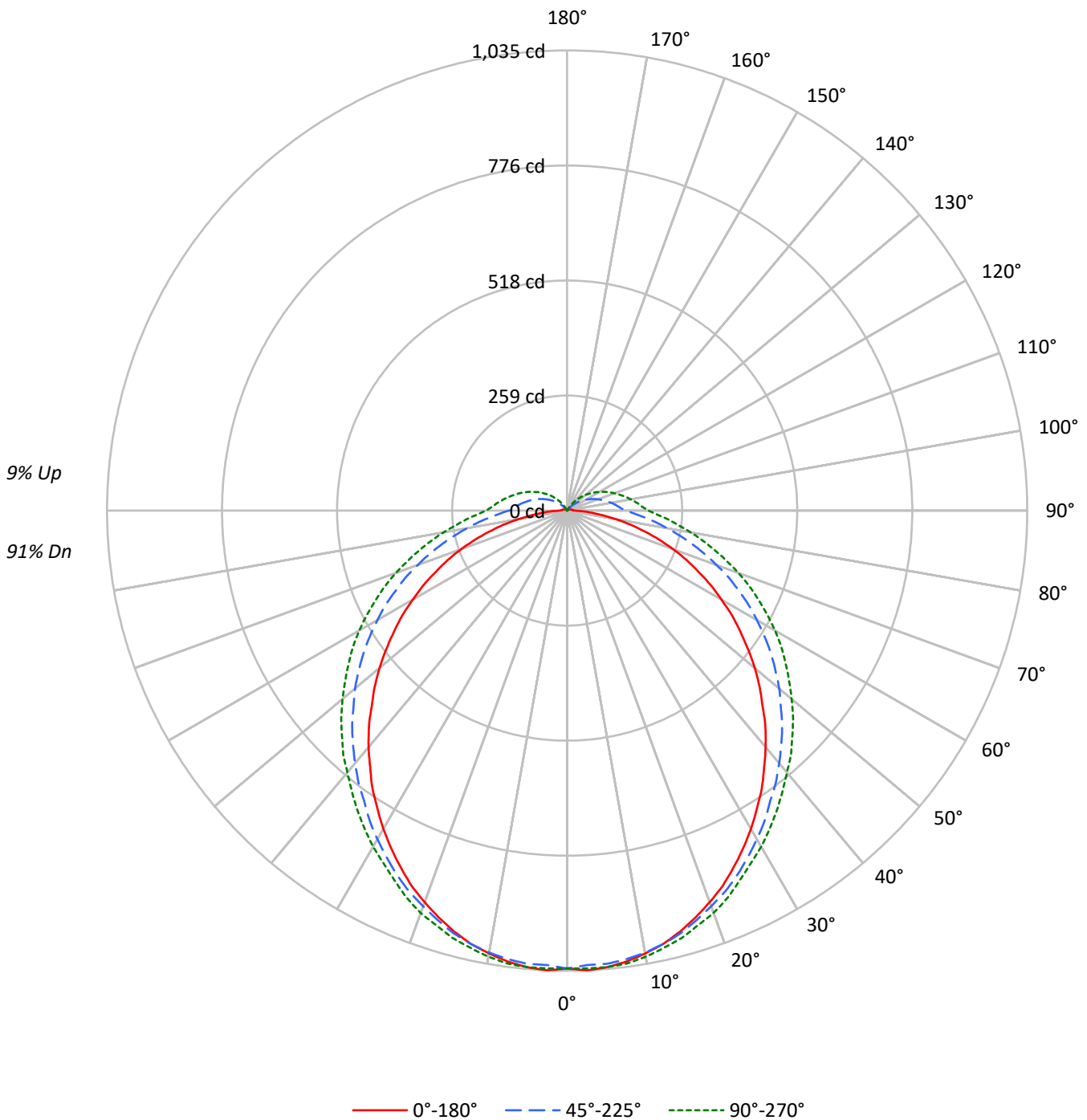
Lumens per Lamp: N/A
Luminaire Lumens: 3494.9 lumens
Efficiency: N/A
Efficacy: 110.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.26 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.23' x L: 3.88' x H: 0.08')
CIE Type: Direct

Input Watts (W): 31.5
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

TEST NUMBER: P243383

CATALOG NUMBER: S123DRP-H1000D940-X4F0-XX-UDD-D-W

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	91
1	105	100	95	90	101	96	92	88	91	87	84	85	82	80	80	78	76	73
2	95	86	79	72	91	83	77	71	78	73	68	74	69	65	69	66	62	60
3	86	75	66	60	83	73	65	58	69	62	56	65	59	54	61	56	52	50
4	79	66	57	50	76	64	56	49	61	53	48	57	51	46	54	49	45	42
5	72	59	50	43	70	57	49	42	54	47	41	51	45	40	49	43	39	36
6	67	53	44	37	64	52	43	37	49	41	36	46	40	35	44	38	34	31
7	62	48	39	33	60	47	38	32	44	37	32	42	36	31	40	34	30	28
8	57	44	35	29	55	43	34	29	41	33	28	39	32	27	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	23	35	28	23	33	27	22	32	26	22	20

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	12481	12481	12481
5°	12519	12160	12156
10°	12402	11853	11785
15°	12231	11515	11381
20°	11996	11114	10971
25°	11729	10741	10498
30°	11430	10324	10098
35°	11129	9901	9701
40°	10797	9556	9321
45°	10433	9216	9003
50°	10127	8867	8674
55°	9753	8511	8348
60°	9360	8118	8034
65°	8949	7699	7648
70°	8480	7247	7272
75°	7773	6759	6827
80°	6881	6274	6437
85°	6118	5881	6139

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 10433 cd/sqm



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CATALOG NUMBER: S123DRP-H1000D940-X4F0-XX-UDD-D-W

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	97.7	2.8
10°-20°	278.7	8.0
20°-30°	417.4	11.9
30°-40°	499.5	14.3
40°-50°	523.8	15.0
50°-60°	492.4	14.1
60°-70°	412.1	11.8
70°-80°	295.7	8.5
80°-90°	177.1	5.1
90°-100°	112.3	3.2
100°-110°	82.8	2.4
110°-120°	55.4	1.6
120°-130°	31.9	0.9
130°-140°	14.7	0.4
140°-150°	3.4	0.1
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	793.9	22.7
0°-40°	1293.3	37.0
0°-60°	2309.5	66.1
0°-90°	3194.4	91.4
90°-120°	250.4	7.2
90°-150°	300.5	8.6
90°-180°	301.0	8.6
0°-180°	3494.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1030	1030	1030	1030	1030	
5°	1031	1030	1023	1032	1031	98
15°	980	987	985	998	995	276
25°	886	898	905	919	918	408
35°	763	782	797	817	822	477
45°	622	653	684	708	716	481
55°	476	515	559	590	600	426
65°	326	375	425	463	475	324
75°	179	234	291	331	344	190
85°	55	112	174	214	228	56
90°	15	71	131	171	182	10
95°	12	58	114	150	162	10
105°	9	38	87	119	129	9
115°	5	19	61	89	99	6
125°	4	4	38	61	70	4
135°	2	1	16	35	42	2
145°	1	0	0	11	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°	1029.7	1029.7	1029.7	1029.7	1029.7
2.5°	1035.1	1031.8	1023.2	1032.9	1030.8
5°	1030.8	1029.7	1023.2	1031.8	1030.8
7.5°	1023.2	1023.2	1017.9	1027.5	1027.5
10°	1011.4	1014.7	1009.3	1020.0	1018.9
12.5°	998.5	1002.8	998.5	1010.4	1007.1
15°	980.3	986.7	984.6	997.5	995.3
17.5°	959.9	967.4	966.3	979.2	978.1
20°	937.3	947.0	947.0	959.9	963.1
22.5°	913.7	924.5	927.7	940.6	942.7
25°	885.8	897.6	905.1	919.1	918.0
27.5°	856.8	870.8	879.4	894.4	894.4
30°	826.8	842.9	853.6	869.7	872.9
32.5°	794.5	813.9	826.8	843.9	848.2
35°	763.4	781.7	796.7	817.1	822.5
37.5°	728.0	750.5	770.9	792.4	795.6
40°	694.7	719.4	741.9	764.5	768.8
42.5°	660.3	686.1	712.9	735.5	745.2
45°	621.7	652.8	684.0	707.6	716.2
47.5°	587.3	618.5	651.7	679.7	689.3
50°	550.8	583.0	622.8	649.6	659.3
52.5°	513.2	548.7	590.5	619.5	629.2
55°	475.7	515.4	559.4	589.5	600.2
57.5°	440.2	479.9	526.1	559.4	571.2
60°	400.5	444.5	492.8	527.2	540.1
62.5°	365.1	410.2	460.6	495.0	507.9
65°	326.4	374.7	425.2	462.8	474.6
67.5°	291.0	338.2	393.0	430.6	443.4
70°	253.4	302.8	357.5	396.2	410.2
72.5°	215.8	268.4	324.3	364.0	375.8
75°	179.3	234.1	291.0	330.7	343.6
77.5°	145.0	199.7	258.8	298.5	312.4
80°	110.6	167.5	228.7	268.4	282.4
82.5°	80.5	138.5	200.8	239.4	252.3
85°	54.8	111.7	173.9	213.7	227.6
87.5°	32.2	90.2	150.3	190.0	201.9
90°	15.0	70.9	131.0	170.7	182.5
92.5°	14.0	63.3	121.3	158.9	170.7
95°	11.8	58.0	113.8	150.3	162.1
97.5°	11.8	52.6	107.4	142.8	153.5
100°	10.7	47.2	100.9	134.2	145.0
102.5°	9.7	41.9	93.4	126.7	137.4
105°	8.6	37.6	87.0	119.2	128.8
107.5°	7.5	32.2	80.5	111.7	121.3
110°	7.5	27.9	74.1	104.1	113.8



TEST NUMBER: P243383

CATALOG NUMBER: S123DRP-H1000D940-X4F0-XX-UDD-D-W

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	6.4	23.6	67.6	96.6	106.3
115°	5.4	19.3	61.2	89.1	98.8
117.5°	5.4	15.0	54.8	82.7	91.3
120°	5.4	11.8	49.4	75.2	83.7
122.5°	4.3	7.5	44.0	68.7	77.3
125°	4.3	4.3	37.6	61.2	69.8
127.5°	3.2	2.1	32.2	54.8	62.3
130°	3.2	2.1	26.8	48.3	55.8
132.5°	2.1	2.1	21.5	41.9	49.4
135°	2.1	1.1	16.1	35.4	41.9
137.5°	2.1	1.1	10.7	29.0	35.4
140°	1.1	1.1	5.4	22.5	29.0
142.5°	1.1	0.0	1.1	17.2	22.5
145°	1.1	0.0	0.0	10.7	15.0
147.5°	1.1	0.0	0.0	5.4	9.7
150°	1.1	0.0	0.0	0.0	3.2
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	17.80	19.31	18.30	19.79	20.31	19.87	21.38	20.37	21.86	22.38
	3H	19.36	20.73	19.86	21.22	21.78	22.27	23.64	22.77	24.13	24.69
	4H	19.88	21.18	20.41	21.69	22.27	23.38	24.68	23.91	25.19	25.77
	6H	20.22	21.43	20.76	21.96	22.55	24.51	25.72	25.05	26.24	26.83
	8H	20.31	21.47	20.86	22.02	22.61	25.07	26.23	25.62	26.78	27.38
	12H	20.36	21.47	20.91	22.01	22.64	25.69	26.80	26.25	27.34	27.97
4H	2H	18.72	20.02	19.25	20.53	21.10	20.32	21.62	20.85	22.13	22.71
	3H	20.52	21.63	21.06	22.18	22.78	22.94	24.04	23.47	24.59	25.19
	4H	21.19	22.20	21.75	22.77	23.39	24.21	25.22	24.77	25.78	26.41
	6H	21.66	22.55	22.24	23.14	23.79	25.51	26.40	26.09	26.99	27.63
	8H	21.80	22.64	22.38	23.22	23.88	26.17	27.01	26.75	27.60	28.25
	12H	21.88	22.64	22.49	23.26	23.92	26.90	27.66	27.50	28.28	28.94
8H	4H	21.84	22.68	22.42	23.26	23.92	24.43	25.27	25.02	25.86	26.52
	6H	22.49	23.20	23.11	23.83	24.49	25.89	26.60	26.51	27.23	27.89
	8H	22.73	23.37	23.35	24.01	24.68	26.68	27.32	27.31	27.96	28.63
	12H	22.90	23.47	23.52	24.10	24.83	27.57	28.14	28.20	28.77	29.51
12H	4H	22.00	22.76	22.60	23.37	24.03	24.44	25.21	25.05	25.82	26.48
	6H	22.74	23.38	23.37	24.02	24.70	25.93	26.58	26.56	27.21	27.89
	8H	23.07	23.64	23.70	24.27	25.00	26.78	27.36	27.41	27.98	28.72