

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: P242695

Luminaire Tested: S124DRP-S1020D940-X4F0-XX-UDD-D-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P242695
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-16)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: S124DRP-S1020D940-X4F0-XX-UDD-D-W
Description: DEFINE 4 DIRECT RECESSED WITH SATIN DROP DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 4000K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

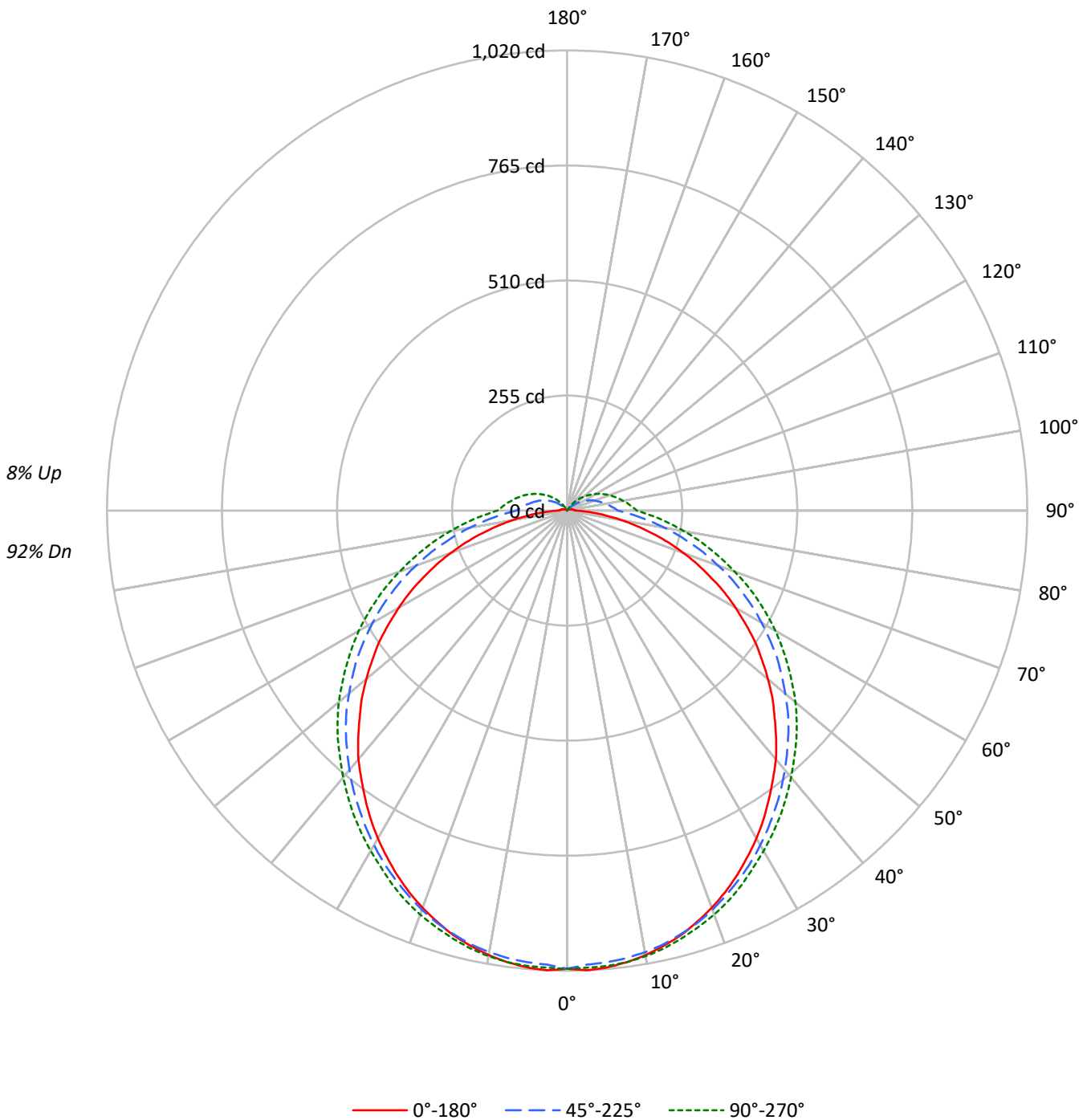
Lumens per Lamp: N/A
Luminaire Lumens: 3462.2 lumens
Efficiency: N/A
Efficacy: 99.5 lumens/watt
Spacing Criteria (0/90/45): 1.23 / 1.28 / 1.39
Luminous Opening: Rectangular w/ Sides (W: 0.31' x L: 3.88' x H: 0.08')
CIE Type: Direct

Input Watts (W): 34.8
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: P242695

CATALOG NUMBER: S124DRP-S1020D940-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	114	114	114	114	107	107	107	101	101	101	95	95	95	92
1	105	100	95	91	102	97	93	89	91	88	84	86	83	80	81	79	77	74
2	95	86	79	73	92	84	77	71	79	73	68	74	70	66	70	67	63	60
3	87	75	67	60	83	73	65	59	69	62	57	65	60	55	62	57	53	50
4	79	66	57	50	76	65	56	49	61	54	48	58	52	47	55	49	45	43
5	73	59	50	43	70	58	49	42	55	47	41	52	45	40	49	44	39	37
6	67	53	44	37	64	52	43	37	49	42	36	47	40	35	45	39	34	32
7	62	48	39	33	60	47	38	32	45	37	32	43	36	31	41	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	38	30	25	36	29	25	34	29	24	22
10	50	37	29	24	49	36	29	23	35	28	23	33	27	23	32	26	22	20

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	9027	9027	9027
5°	9054	8812	8835
10°	8998	8660	8647
15°	8916	8484	8429
20°	8795	8292	8216
25°	8657	8077	7985
30°	8508	7864	7748
35°	8340	7646	7538
40°	8204	7437	7321
45°	8004	7244	7133
50°	7835	7022	6933
55°	7659	6811	6700
60°	7387	6545	6486
65°	7087	6259	6224
70°	6726	5930	5919
75°	6219	5568	5637
80°	5653	5213	5353
85°	4937	4877	5158

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 8004 cd/sqm



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CATALOG NUMBER: S124DRP-S1020D940-X4F0-XX-UDD-D-W

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	96.2	2.8
10°-20°	275.7	8.0
20°-30°	416.8	12.0
30°-40°	504.3	14.6
40°-50°	533.1	15.4
50°-60°	501.7	14.5
60°-70°	416.3	12.0
70°-80°	292.2	8.4
80°-90°	164.7	4.8
90°-100°	98.1	2.8
100°-110°	72.6	2.1
110°-120°	48.7	1.4
120°-130°	27.4	0.8
130°-140°	11.9	0.3
140°-150°	2.3	0.1
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	788.7	22.8
0°-40°	1293.0	37.3
0°-60°	2327.9	67.2
0°-90°	3201.1	92.5
90°-120°	219.4	6.3
90°-150°	261.1	7.5
90°-180°	261.0	7.5
0°-180°	3462.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1016	1016	1016	1016	1016	
5°	1017	1013	1005	1014	1013	97
15°	974	976	972	982	981	275
25°	892	898	902	914	915	411
35°	780	794	805	821	824	488
45°	650	672	694	713	719	503
55°	509	533	567	590	597	454
65°	352	389	428	456	465	350
75°	196	238	285	317	328	208
85°	60	108	159	193	205	63
90°	18	64	113	146	155	12
95°	15	52	99	130	140	12
105°	10	33	75	104	113	12
115°	7	17	53	78	86	7
125°	4	3	32	53	60	4
135°	2	2	10	28	35	2
145°	1	0	0	7	11	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°	1015.5	1015.5	1015.5	1015.5	1015.5
2.5°	1020.0	1016.6	1007.5	1015.5	1014.3
5°	1016.6	1013.2	1005.2	1014.3	1013.2
7.5°	1009.8	1007.5	1000.7	1010.9	1009.8
10°	1000.7	999.6	993.9	1004.1	1003.0
12.5°	988.2	988.2	984.8	993.9	993.9
15°	974.5	975.7	972.3	982.5	981.4
17.5°	956.3	959.8	958.6	968.9	967.7
20°	937.0	940.4	941.6	952.9	952.9
22.5°	915.4	920.0	922.2	933.6	935.9
25°	891.5	898.3	901.8	914.3	915.4
27.5°	865.4	875.6	880.2	891.5	892.7
30°	839.2	848.3	856.3	868.8	871.1
32.5°	810.8	822.2	831.3	846.0	848.3
35°	780.1	793.7	805.1	821.0	824.4
37.5°	749.4	765.3	778.9	794.9	798.3
40°	719.8	734.6	750.5	767.6	772.1
42.5°	685.7	702.8	722.1	741.4	744.8
45°	650.4	672.1	693.7	713.0	718.7
47.5°	617.5	639.1	664.1	683.4	690.2
50°	581.1	606.1	631.1	653.9	660.7
52.5°	544.7	569.7	599.3	622.0	628.8
55°	509.4	533.3	567.4	590.2	597.0
57.5°	469.6	499.2	532.2	559.5	565.2
60°	431.0	460.5	498.1	524.2	533.3
62.5°	393.5	426.4	464.0	490.1	499.2
65°	352.5	388.9	427.6	456.0	465.1
67.5°	313.9	352.5	393.5	421.9	431.0
70°	274.1	312.7	355.9	386.6	394.6
72.5°	235.4	275.2	321.8	351.4	360.5
75°	195.6	237.7	285.4	317.3	327.5
77.5°	158.1	202.4	252.4	284.3	295.7
80°	123.9	169.4	219.5	253.6	262.7
82.5°	89.8	137.6	187.6	222.9	233.1
85°	60.3	108.0	159.2	193.3	204.7
87.5°	37.5	84.1	134.2	167.2	177.4
90°	18.2	63.7	112.6	145.6	154.7
92.5°	17.1	56.9	105.8	137.6	146.7
95°	14.8	52.3	98.9	129.6	139.9
97.5°	13.6	46.6	93.2	122.8	133.0
100°	12.5	42.1	86.4	117.1	125.1
102.5°	12.5	37.5	80.7	110.3	119.4
105°	10.2	33.0	75.1	103.5	112.6
107.5°	10.2	29.6	69.4	97.8	105.8
110°	9.1	25.0	64.8	91.0	100.1



TEST NUMBER: P242695

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	8.0	21.6	59.1	84.1	93.2
115°	6.8	17.1	53.4	78.5	86.4
117.5°	6.8	13.6	47.8	71.6	80.7
120°	5.7	9.1	42.1	64.8	73.9
122.5°	5.7	5.7	36.4	59.1	67.1
125°	4.5	3.4	31.8	53.4	60.3
127.5°	4.5	3.4	26.2	46.6	54.6
130°	3.4	2.3	20.5	40.9	47.8
132.5°	3.4	2.3	15.9	35.3	42.1
135°	2.3	2.3	10.2	28.4	35.3
137.5°	2.3	1.1	5.7	22.7	28.4
140°	2.3	1.1	2.3	17.1	22.7
142.5°	1.1	1.1	0.0	12.5	17.1
145°	1.1	0.0	0.0	6.8	11.4
147.5°	1.1	0.0	0.0	1.1	5.7
150°	1.1	0.0	0.0	0.0	0.0
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	17.44	18.96	17.91	19.43	19.92	18.99	20.51	19.47	20.98	21.48
	3H	19.07	20.46	19.56	20.94	21.48	21.29	22.68	21.78	23.16	23.70
	4H	19.64	20.96	20.15	21.45	22.00	22.35	23.67	22.86	24.16	24.71
	6H	20.02	21.25	20.55	21.76	22.32	23.41	24.63	23.93	25.14	25.71
	8H	20.13	21.30	20.67	21.83	22.41	23.93	25.10	24.46	25.63	26.20
	12H	20.19	21.32	20.73	21.84	22.44	24.48	25.61	25.02	26.13	26.73
4H	2H	18.28	19.60	18.79	20.09	20.64	19.49	20.80	20.00	21.30	21.85
	3H	20.16	21.28	20.69	21.82	22.39	22.02	23.14	22.54	23.67	24.25
	4H	20.87	21.89	21.41	22.44	23.04	23.23	24.26	23.78	24.80	25.41
	6H	21.39	22.29	21.95	22.86	23.48	24.46	25.37	25.03	25.94	26.56
	8H	21.54	22.39	22.11	22.96	23.59	25.08	25.93	25.65	26.50	27.13
	12H	21.64	22.41	22.23	23.01	23.65	25.74	26.51	26.33	27.11	27.74
8H	4H	21.45	22.30	22.02	22.87	23.50	23.49	24.34	24.06	24.91	25.54
	6H	22.14	22.86	22.74	23.47	24.11	24.88	25.60	25.48	26.21	26.85
	8H	22.39	23.04	23.01	23.66	24.32	25.62	26.27	26.24	26.89	27.54
	12H	22.58	23.16	23.19	23.77	24.49	26.45	27.02	27.06	27.64	28.35
12H	4H	21.58	22.35	22.17	22.95	23.59	23.51	24.28	24.10	24.88	25.51
	6H	22.35	23.00	22.97	23.63	24.28	24.93	25.58	25.54	26.20	26.85
	8H	22.69	23.27	23.31	23.88	24.60	25.74	26.32	26.35	26.93	27.65