

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: P243406

Luminaire Tested: S123RDRP-H775D930-X4F0-XX-UDD-F-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P243406
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-64)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: S123RDRP-H775D930-X4F0-XX-UDD-F-W
Description: DEFINE 3 REGRESSED DIRECT RECESSED WITH SATIN FLUSH DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 3000K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

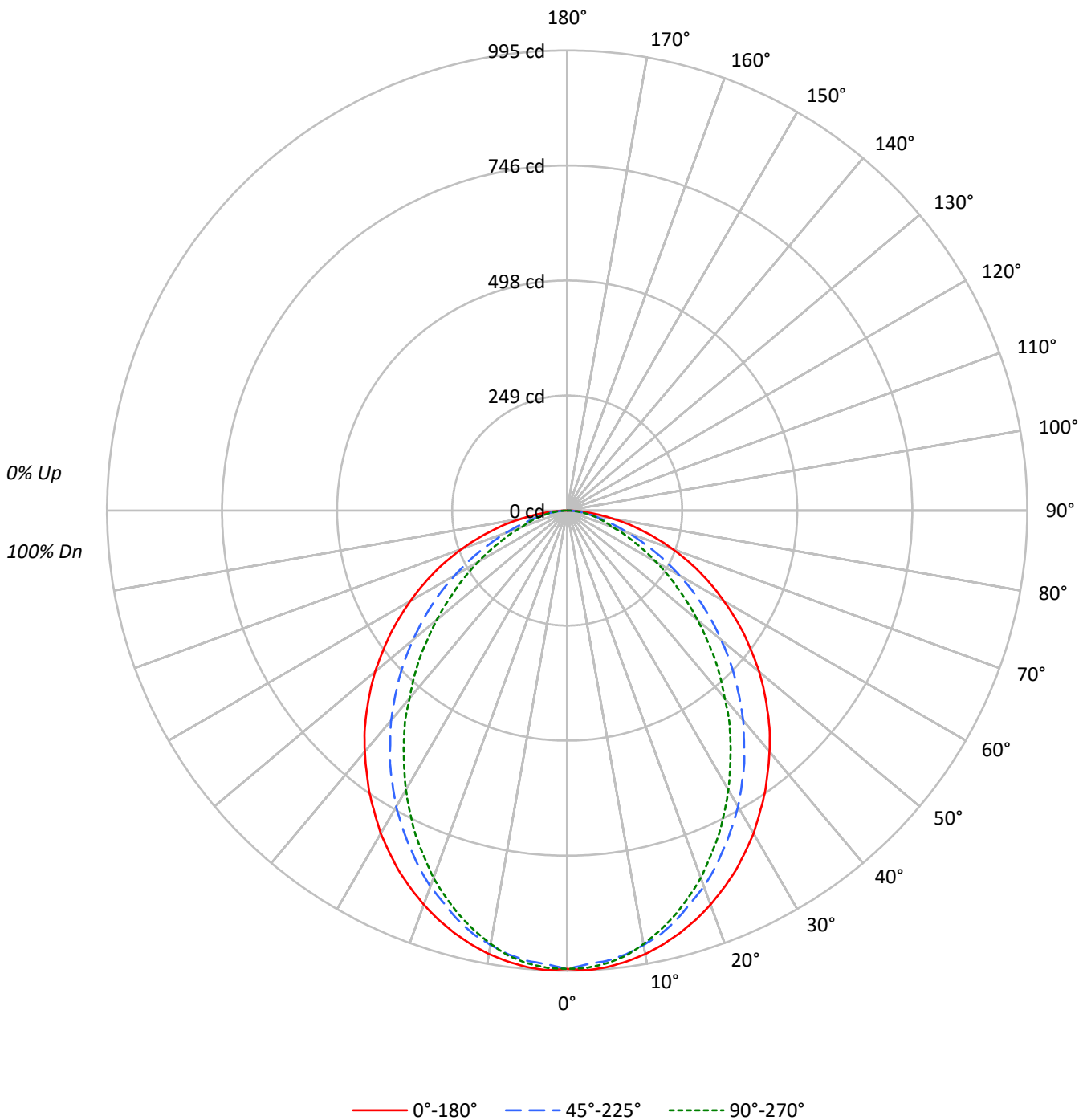
Lumens per Lamp: N/A
Luminaire Lumens: 2237.7 lumens
Efficiency: N/A
Efficacy: 94.8 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.07 / 1.22
Luminous Opening: Rectangular (W 0.23' x L: 3.88' x H: 0')
CIE Type: Direct

Input Watts (W): 23.6
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	50	30	10	50	30	10	0																
RCR																																														
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100																												
1	110	105	101	98	107	103	99	96	99	96	93	95	93	90	91	89	88	86																												
2	101	93	87	81	98	91	85	80	87	83	78	84	80	77	81	78	75	73																												
3	92	82	75	69	90	81	74	68	78	72	67	75	70	66	73	68	65	62																												
4	85	73	65	59	83	72	64	58	70	63	58	67	62	57	65	60	56	54																												
5	78	66	58	51	76	65	57	51	63	56	50	61	55	50	59	54	49	47																												
6	73	60	51	45	71	59	51	45	57	50	45	56	49	44	54	48	44	42																												
7	67	55	46	40	66	54	46	40	52	45	40	51	44	40	49	44	39	37																												
8	63	50	42	36	61	49	41	36	48	41	36	47	40	36	46	40	35	34																												
9	59	46	38	33	58	45	38	33	44	37	32	43	37	32	42	36	32	30																												
10	55	43	35	30	54	42	35	30	41	34	30	40	34	30	39	34	29	28																												

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	12013	12013	12013
5°	12059	11893	11957
10°	11983	11740	11711
15°	11855	11492	11348
20°	11694	11155	10900
25°	11505	10752	10364
30°	11282	10346	9760
35°	11027	9879	9112
40°	10768	9370	8396
45°	10505	8808	7724
50°	10221	8197	6947
55°	9877	7561	6162
60°	9486	6810	5370
65°	9103	5960	4586
70°	8580	4990	3668
75°	7915	3957	3494
80°	6911	3504	3190
85°	5827	3074	2962

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 10505 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	93.2	4.2
10°-20°	259.6	11.6
20°-30°	373.7	16.7
30°-40°	420.9	18.8
40°-50°	402.1	18.0
50°-60°	328.8	14.7
60°-70°	220.8	9.9
70°-80°	110.1	4.9
80°-90°	28.5	1.3
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	726.5	32.5
0°-40°	1147.4	51.3
0°-60°	1878.4	83.9
0°-90°	2237.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2237.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	991	991	991	991	991	
5°	991	987	977	985	983	94
15°	945	938	916	910	904	266
25°	860	841	804	786	775	396
35°	745	716	668	630	616	466
45°	613	576	514	469	451	473
55°	467	426	358	308	292	418
65°	317	273	208	170	160	314
75°	169	129	84	76	75	179
85°	42	24	22	21	21	49
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	991.1	991.1	991.1	991.1	991.1	991.1	991.1	991.1	991.1	991.1	991.1
2.5°	994.9	992.6	989.6	990.4	991.1	991.9	991.9	991.1	988.8	985.8	982.0
5°	991.1	988.8	985.8	985.8	987.3	987.3	987.3	986.6	984.3	981.2	977.4
7.5°	983.5	982.0	978.2	978.9	979.7	979.7	979.7	978.9	975.9	972.1	968.3
10°	973.6	971.3	968.3	968.3	969.0	969.0	969.0	967.5	963.7	959.1	953.8
12.5°	960.7	958.4	955.3	955.3	955.3	955.3	955.3	953.1	947.0	942.4	937.8
15°	944.7	942.4	939.4	939.4	938.6	937.8	936.3	932.5	927.2	921.8	915.8
17.5°	927.2	924.1	920.3	919.6	918.8	918.0	915.8	913.5	905.9	898.2	889.1
20°	906.6	903.6	899.8	899.0	896.7	894.4	892.9	888.4	880.0	870.8	864.8
22.5°	883.8	880.7	876.9	875.4	870.8	869.3	867.0	860.2	851.1	842.7	835.8
25°	860.2	856.4	851.8	849.5	844.2	841.2	840.4	830.5	821.4	812.2	803.9
27.5°	832.8	829.7	825.9	821.4	816.0	812.2	810.7	801.6	790.2	779.5	771.9
30°	806.1	801.6	797.8	792.4	784.8	781.0	778.0	768.8	758.9	746.0	739.2
32.5°	774.9	771.9	767.3	762.0	754.4	751.3	746.8	735.3	722.4	713.3	702.6
35°	745.2	742.2	735.3	730.0	719.4	716.3	711.7	701.9	687.4	676.7	667.6
37.5°	712.5	708.7	703.4	695.8	686.6	682.8	676.7	666.8	650.1	639.4	628.0
40°	680.5	675.2	669.1	660.7	651.6	647.8	642.5	628.0	614.3	602.1	592.2
42.5°	648.6	642.5	634.9	627.3	617.4	612.0	605.9	592.2	577.0	565.6	551.9
45°	612.8	608.2	600.6	591.5	580.1	576.2	569.4	554.9	539.7	527.5	513.8
47.5°	577.8	572.4	564.8	555.7	544.3	538.9	532.1	517.6	502.4	487.2	475.0
50°	542.0	536.7	527.5	518.4	507.7	500.9	494.8	480.3	463.6	449.9	434.7
52.5°	503.9	499.4	491.8	482.6	468.9	463.6	457.5	441.5	425.5	409.5	395.8
55°	467.4	464.3	455.2	446.1	431.6	425.5	419.4	402.7	386.7	370.7	357.8
57.5°	429.3	427.0	417.9	407.3	394.3	388.2	380.6	363.9	348.6	332.7	319.0
60°	391.3	389.0	379.9	369.2	357.0	349.4	341.0	328.1	310.6	296.1	280.9
62.5°	354.7	351.7	344.1	332.7	319.0	311.3	303.7	288.5	272.5	257.3	243.6
65°	317.4	313.6	304.5	293.1	280.1	273.3	265.7	251.2	235.2	220.8	207.8
67.5°	280.1	276.3	266.4	257.3	242.1	235.2	228.4	213.9	198.7	184.2	172.0
70°	242.1	238.3	230.7	218.5	205.5	198.7	191.8	176.6	162.9	152.2	140.8
72.5°	204.8	201.7	194.1	182.7	170.5	163.7	156.1	143.1	130.9	119.5	111.1
75°	169.0	164.4	157.6	146.9	134.7	128.6	123.3	110.4	99.0	91.3	84.5
77.5°	134.7	129.4	121.8	113.4	102.0	95.9	90.6	79.9	72.3	67.0	65.5
80°	99.0	98.2	90.6	81.5	71.6	67.0	61.7	54.8	52.5	51.8	50.2
82.5°	69.3	66.2	60.1	51.8	44.2	41.1	39.6	38.1	36.5	36.5	35.0
85°	41.9	38.8	33.5	26.6	25.1	24.4	23.6	23.6	22.8	22.1	22.1
87.5°	18.3	15.2	11.4	10.7	9.9	9.9	10.7	10.7	10.7	9.9	9.9
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°
0°	991.1	991.1	991.1	991.1	991.1	991.1	991.1	991.1	991.1	991.1
2.5°	983.5	987.3	989.6	990.4	990.4	990.4	991.1	991.1	990.4	989.6
5°	978.2	982.0	983.5	985.0	985.0	985.0	985.0	985.0	984.3	982.7
7.5°	969.8	972.1	974.4	973.6	973.6	972.8	972.1	972.8	971.3	971.3
10°	954.6	956.9	958.4	956.1	956.1	956.9	956.9	956.1	953.8	951.5
12.5°	937.1	939.4	937.1	937.8	936.3	934.8	934.0	933.3	931.0	929.5
15°	914.2	914.2	912.7	912.7	910.4	907.4	906.6	907.4	904.3	904.3
17.5°	889.1	887.6	885.3	883.8	883.0	883.0	880.0	880.0	876.2	875.4
20°	861.7	860.2	857.9	854.1	852.6	853.3	850.3	848.0	845.7	845.0
22.5°	832.8	829.0	826.7	822.9	819.8	819.8	817.6	813.8	811.5	809.2
25°	800.1	796.2	791.7	788.6	786.3	782.5	781.0	778.0	775.7	774.9
27.5°	766.6	760.5	754.4	751.3	749.8	745.2	743.0	741.4	736.9	736.1
30°	730.8	726.2	718.6	713.3	709.5	710.2	704.9	701.9	699.6	697.3
32.5°	696.5	688.9	681.3	674.4	669.9	669.1	663.8	660.7	658.5	656.2
35°	657.7	650.1	641.0	634.9	630.3	628.0	622.7	621.2	617.4	615.8
37.5°	618.9	610.5	601.4	593.8	590.7	585.4	583.1	579.3	576.2	576.2
40°	580.8	570.9	561.8	552.7	548.8	545.8	539.7	536.7	532.9	530.6
42.5°	541.2	529.8	521.4	513.1	507.7	505.5	498.6	494.8	491.0	490.2
45°	501.6	490.2	479.6	471.2	468.9	464.3	457.5	452.2	451.4	450.6
47.5°	461.3	449.9	440.0	430.9	427.8	422.5	417.9	414.1	409.5	407.3
50°	422.5	411.1	400.4	390.5	386.7	382.1	377.6	372.2	370.7	368.4
52.5°	383.7	370.7	359.3	350.2	347.1	343.3	338.0	333.4	331.1	329.6
55°	344.1	331.1	321.2	312.1	308.3	306.0	299.9	296.1	293.1	291.6
57.5°	305.3	292.3	283.2	276.3	271.0	268.7	262.6	258.8	257.3	256.5
60°	268.7	256.5	246.6	239.8	235.2	232.9	228.4	224.6	222.3	221.5
62.5°	232.2	221.5	212.4	205.5	202.5	199.4	195.6	192.6	190.3	190.3
65°	197.2	186.5	178.1	172.8	169.8	168.2	163.7	162.1	159.9	159.9
67.5°	162.9	155.3	149.2	142.3	140.1	140.1	135.5	134.0	132.5	132.5
70°	133.2	126.4	119.5	115.7	113.4	112.7	108.9	106.6	105.0	103.5
72.5°	104.3	98.2	92.1	91.3	91.3	90.6	90.6	89.1	89.1	89.8
75°	79.9	78.4	76.9	76.9	76.1	75.4	75.4	74.6	74.6	74.6
77.5°	63.9	63.2	62.4	61.7	61.7	60.9	60.1	60.1	60.1	60.1
80°	48.7	48.0	48.0	47.2	46.4	47.2	46.4	46.4	45.7	45.7
82.5°	34.3	34.3	34.3	33.5	33.5	33.5	33.5	32.7	32.7	33.5
85°	21.3	21.3	21.3	21.3	20.6	21.3	20.6	20.6	20.6	21.3
87.5°	9.1	9.9	9.1	9.9	9.9	9.1	9.1	9.1	9.1	9.1
90°	0.0	0.0	0.0	0.0	0.0	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	20.16	21.72	20.53	22.03	22.34	17.36	18.91	17.72	19.22	19.54
	3H	21.99	23.39	22.37	23.71	24.08	18.43	19.83	18.81	20.15	20.51
	4H	22.68	23.99	23.07	24.33	24.71	18.83	20.14	19.23	20.49	20.86
	6H	23.17	24.39	23.59	24.75	25.14	19.15	20.36	19.56	20.73	21.12
	8H	23.33	24.49	23.76	24.88	25.28	19.26	20.41	19.68	20.80	21.20
	12H	23.43	24.54	23.86	24.92	25.35	19.33	20.44	19.76	20.82	21.25
4H	2H	20.40	21.71	20.80	22.06	22.44	18.07	19.38	18.47	19.73	20.11
	3H	22.39	23.48	22.80	23.88	24.28	19.30	20.39	19.71	20.78	21.19
	4H	23.18	24.16	23.61	24.58	25.02	19.78	20.76	20.22	21.18	21.62
	6H	23.80	24.65	24.26	25.10	25.55	20.20	21.06	20.66	21.50	21.96
	8H	24.00	24.80	24.46	25.24	25.71	20.35	21.15	20.81	21.59	22.06
	12H	24.15	24.86	24.63	25.34	25.81	20.46	21.17	20.94	21.65	22.12
8H	4H	23.22	24.02	23.68	24.46	24.93	20.10	20.90	20.56	21.34	21.81
	6H	23.89	24.55	24.38	25.04	25.51	20.61	21.28	21.11	21.77	22.24
	8H	24.13	24.72	24.64	25.23	25.72	20.82	21.41	21.33	21.92	22.41
	12H	24.32	24.84	24.83	25.33	25.90	20.99	21.52	21.50	22.01	22.57
12H	4H	23.21	23.92	23.69	24.40	24.87	20.14	20.85	20.62	21.33	21.80
	6H	23.87	24.46	24.38	24.97	25.46	20.67	21.26	21.18	21.77	22.26
	8H	24.15	24.67	24.66	25.16	25.73	20.93	21.45	21.44	21.94	22.51