

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: P243411

Luminaire Tested: S123RDRP-H775D935-X4F0-XX-UDD-F-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P243411
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-H775D935-X4F0-XX-UDD-F-W
Description: DEFINE 3 REGRESSED DIRECT RECESSED WITH SATIN FLUSH DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 3500K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

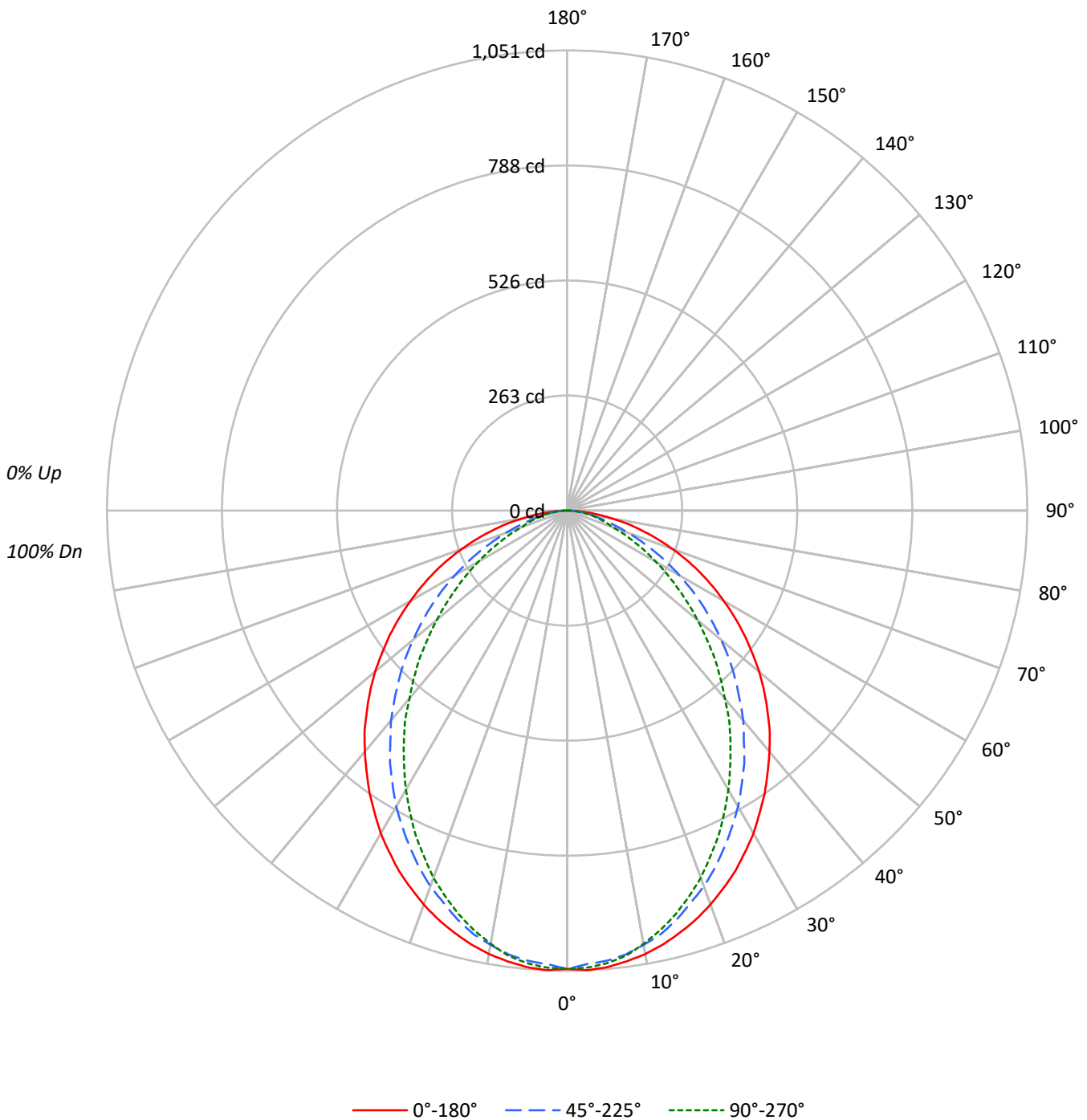
Lumens per Lamp: N/A
Luminaire Lumens: 2363.2 lumens
Efficiency: N/A
Efficacy: 100.1 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.07 / 1.22
Luminous Opening: Rectangular (W 0.23' x L: 3.88' x H: 0')
CIE Type: Direct

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					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	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100					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°	12687	12687	12687
5°	12736	12559	12627
10°	12655	12398	12369
15°	12519	12136	11984
20°	12350	11779	11510
25°	12149	11353	10946
30°	11915	10926	10307
35°	11645	10432	9624
40°	11372	9896	8866
45°	11093	9301	8158
50°	10794	8655	7337
55°	10431	7984	6507
60°	10017	7190	5670
65°	9614	6296	4841
70°	9058	5270	3874
75°	8360	4177	3690
80°	7294	3707	3365
85°	6147	3240	3129

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 11093 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	98.5	4.2
10°-20°	274.1	11.6
20°-30°	394.6	16.7
30°-40°	444.5	18.8
40°-50°	424.7	18.0
50°-60°	347.2	14.7
60°-70°	233.2	9.9
70°-80°	116.3	4.9
80°-90°	30.1	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°	767.2	32.5
0°-40°	1211.7	51.3
0°-60°	1983.7	83.9
0°-90°	2363.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2363.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1047	1047	1047	1047	1047	
5°	1047	1043	1032	1040	1038	99
15°	998	990	967	962	955	281
25°	908	888	849	830	818	418
35°	787	756	705	666	650	492
45°	647	609	543	495	476	499
55°	494	449	378	326	308	441
65°	335	289	220	179	169	332
75°	178	136	89	80	79	189
85°	44	26	23	22	22	51
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°	1046.7	1046.7	1046.7	1046.7	1046.7	1046.7	1046.7	1046.7	1046.7	1046.7	1046.7
2.5°	1050.7	1048.3	1045.1	1045.9	1046.7	1047.5	1047.5	1046.7	1044.3	1041.0	1037.0
5°	1046.7	1044.3	1041.0	1041.0	1042.7	1042.7	1042.7	1041.9	1039.4	1036.2	1032.2
7.5°	1038.6	1037.0	1033.0	1033.8	1034.6	1034.6	1034.6	1033.8	1030.6	1026.6	1022.6
10°	1028.2	1025.8	1022.6	1022.6	1023.4	1023.4	1023.4	1021.8	1017.7	1012.9	1007.3
12.5°	1014.5	1012.1	1008.9	1008.9	1008.9	1008.9	1008.9	1006.5	1000.0	995.2	990.4
15°	997.6	995.2	992.0	992.0	991.2	990.4	988.8	984.8	979.1	973.5	967.1
17.5°	979.1	975.9	971.9	971.1	970.3	969.5	967.1	964.7	956.6	948.6	939.0
20°	957.4	954.2	950.2	949.4	947.0	944.6	943.0	938.1	929.3	919.7	913.2
22.5°	933.3	930.1	926.1	924.5	919.7	918.1	915.6	908.4	898.8	889.9	882.7
25°	908.4	904.4	899.6	897.1	891.5	888.3	887.5	877.1	867.4	857.8	848.9
27.5°	879.5	876.2	872.2	867.4	861.8	857.8	856.2	846.5	834.4	823.2	815.2
30°	851.3	846.5	842.5	836.9	828.8	824.8	821.6	811.9	801.5	787.8	780.6
32.5°	818.4	815.2	810.3	804.7	796.7	793.4	788.6	776.6	762.9	753.3	742.0
35°	787.0	783.8	776.6	770.9	759.7	756.5	751.6	741.2	725.9	714.7	705.0
37.5°	752.4	748.4	742.8	734.8	725.1	721.1	714.7	704.2	686.5	675.3	663.2
40°	718.7	713.1	706.6	697.8	688.1	684.1	678.5	663.2	648.7	635.9	625.4
42.5°	684.9	678.5	670.5	662.4	652.0	646.3	639.9	625.4	609.4	597.3	582.8
45°	647.1	642.3	634.3	624.6	612.6	608.6	601.3	586.0	570.0	557.1	542.6
47.5°	610.2	604.5	596.5	586.8	574.8	569.2	561.9	546.7	530.6	514.5	501.6
50°	572.4	566.7	557.1	547.5	536.2	529.0	522.5	507.3	489.6	475.1	459.0
52.5°	532.2	527.4	519.3	509.7	495.2	489.6	483.1	466.3	449.4	432.5	418.0
55°	493.6	490.4	480.7	471.1	455.8	449.4	442.9	425.3	408.4	391.5	377.8
57.5°	453.4	451.0	441.3	430.1	416.4	410.0	401.9	384.3	368.2	351.3	336.8
60°	413.2	410.8	401.1	389.9	377.0	369.0	360.1	346.5	328.0	312.7	296.6
62.5°	374.6	371.4	363.4	351.3	336.8	328.8	320.8	304.7	287.8	271.7	257.2
65°	335.2	331.2	321.6	309.5	295.8	288.6	280.6	265.3	248.4	233.1	219.5
67.5°	295.8	291.8	281.4	271.7	255.6	248.4	241.2	225.9	209.8	194.5	181.7
70°	255.6	251.6	243.6	230.7	217.1	209.8	202.6	186.5	172.0	160.8	148.7
72.5°	216.2	213.0	205.0	192.9	180.1	172.8	164.8	151.1	138.3	126.2	117.4
75°	178.5	173.6	166.4	155.2	142.3	135.9	130.2	116.6	104.5	96.5	89.2
77.5°	142.3	136.7	128.6	119.8	107.7	101.3	95.7	84.4	76.4	70.7	69.1
80°	104.5	103.7	95.7	86.0	75.6	70.7	65.1	57.9	55.5	54.7	53.1
82.5°	73.2	69.9	63.5	54.7	46.6	43.4	41.8	40.2	38.6	38.6	37.0
85°	44.2	41.0	35.4	28.1	26.5	25.7	24.9	24.9	24.1	23.3	23.3
87.5°	19.3	16.1	12.1	11.3	10.5	10.5	11.3	11.3	11.3	10.5	10.5
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°	1046.7	1046.7	1046.7	1046.7	1046.7	1046.7	1046.7	1046.7	1046.7	1046.7
2.5°	1038.6	1042.7	1045.1	1045.9	1045.9	1045.9	1046.7	1046.7	1045.9	1045.1
5°	1033.0	1037.0	1038.6	1040.2	1040.2	1040.2	1040.2	1040.2	1039.4	1037.8
7.5°	1024.2	1026.6	1029.0	1028.2	1028.2	1027.4	1026.6	1027.4	1025.8	1025.8
10°	1008.1	1010.5	1012.1	1009.7	1009.7	1010.5	1010.5	1009.7	1007.3	1004.9
12.5°	989.6	992.0	989.6	990.4	988.8	987.2	986.4	985.6	983.2	981.6
15°	965.5	965.5	963.9	963.9	961.5	958.2	957.4	958.2	955.0	955.0
17.5°	939.0	937.3	934.9	933.3	932.5	932.5	929.3	929.3	925.3	924.5
20°	910.0	908.4	906.0	902.0	900.4	901.2	898.0	895.5	893.1	892.3
22.5°	879.5	875.4	873.0	869.0	865.8	865.8	863.4	859.4	857.0	854.5
25°	844.9	840.9	836.1	832.8	830.4	826.4	824.8	821.6	819.2	818.4
27.5°	809.5	803.1	796.7	793.4	791.8	787.0	784.6	783.0	778.2	777.4
30°	771.7	766.9	758.9	753.3	749.2	750.0	744.4	741.2	738.8	736.4
32.5°	735.6	727.5	719.5	712.3	707.4	706.6	701.0	697.8	695.4	693.0
35°	694.6	686.5	676.9	670.5	665.6	663.2	657.6	656.0	652.0	650.4
37.5°	653.6	644.7	635.1	627.0	623.8	618.2	615.8	611.8	608.6	608.6
40°	613.4	602.9	593.3	583.6	579.6	576.4	570.0	566.7	562.7	560.3
42.5°	571.6	559.5	550.7	541.8	536.2	533.8	526.6	522.5	518.5	517.7
45°	529.8	517.7	506.5	497.6	495.2	490.4	483.1	477.5	476.7	475.9
47.5°	487.2	475.1	464.7	455.0	451.8	446.2	441.3	437.3	432.5	430.1
50°	446.2	434.1	422.9	412.4	408.4	403.6	398.7	393.1	391.5	389.1
52.5°	405.2	391.5	379.4	369.8	366.6	362.6	356.9	352.1	349.7	348.1
55°	363.4	349.7	339.2	329.6	325.6	323.2	316.7	312.7	309.5	307.9
57.5°	322.4	308.7	299.0	291.8	286.2	283.8	277.3	273.3	271.7	270.9
60°	283.8	270.9	260.5	253.2	248.4	246.0	241.2	237.1	234.7	233.9
62.5°	245.2	233.9	224.3	217.1	213.8	210.6	206.6	203.4	201.0	201.0
65°	208.2	197.0	188.1	182.5	179.3	177.7	172.8	171.2	168.8	168.8
67.5°	172.0	164.0	157.6	150.3	147.9	147.9	143.1	141.5	139.9	139.9
70°	140.7	133.4	126.2	122.2	119.8	119.0	115.0	112.5	110.9	109.3
72.5°	110.1	103.7	97.3	96.5	96.5	95.7	95.7	94.1	94.1	94.9
75°	84.4	82.8	81.2	81.2	80.4	79.6	79.6	78.8	78.8	78.8
77.5°	67.5	66.7	65.9	65.1	65.1	64.3	63.5	63.5	63.5	63.5
80°	51.4	50.6	50.6	49.8	49.0	49.8	49.0	49.0	48.2	48.2
82.5°	36.2	36.2	36.2	35.4	35.4	35.4	35.4	34.6	34.6	35.4
85°	22.5	22.5	22.5	22.5	21.7	22.5	21.7	21.7	21.7	22.5
87.5°	9.6	10.5	9.6	10.5	10.5	9.6	9.6	9.6	9.6	9.6
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	20.35	21.90	20.72	22.22	22.53	17.55	19.10	17.91	19.41	19.73
	3H	22.18	23.58	22.56	23.90	24.26	18.62	20.02	19.00	20.34	20.70
	4H	22.86	24.18	23.26	24.52	24.90	19.02	20.33	19.42	20.68	21.05
	6H	23.36	24.58	23.78	24.94	25.33	19.34	20.55	19.75	20.92	21.31
	8H	23.52	24.68	23.95	25.07	25.47	19.45	20.60	19.87	20.99	21.39
	12H	23.62	24.73	24.05	25.11	25.54	19.52	20.63	19.95	21.01	21.44
4H	2H	20.59	21.90	20.99	22.25	22.63	18.26	19.57	18.66	19.92	20.30
	3H	22.58	23.67	22.99	24.07	24.47	19.49	20.58	19.90	20.97	21.38
	4H	23.37	24.35	23.80	24.77	25.21	19.97	20.95	20.40	21.37	21.81
	6H	23.99	24.84	24.45	25.29	25.74	20.39	21.25	20.85	21.69	22.15
	8H	24.19	24.99	24.65	25.43	25.90	20.54	21.34	21.00	21.78	22.25
	12H	24.34	25.05	24.82	25.53	26.00	20.65	21.36	21.13	21.84	22.31
8H	4H	23.41	24.21	23.87	24.65	25.12	20.29	21.09	20.75	21.53	22.00
	6H	24.08	24.74	24.57	25.23	25.70	20.80	21.46	21.30	21.96	22.43
	8H	24.32	24.91	24.83	25.42	25.91	21.01	21.60	21.52	22.11	22.60
	12H	24.51	25.03	25.02	25.52	26.09	21.18	21.71	21.69	22.20	22.76
12H	4H	23.40	24.11	23.88	24.59	25.06	20.33	21.04	20.81	21.52	21.99
	6H	24.06	24.65	24.57	25.16	25.65	20.86	21.45	21.37	21.96	22.45
	8H	24.34	24.86	24.85	25.35	25.92	21.12	21.64	21.63	22.13	22.70