

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269



Scaled data based on original data using
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Test Report Prepared for
Cooper Lighting Solutions

Brand: NEO-RAY

Report Number: P910361

Luminaire Tested: DFN2DIP-4P3F0-020D020US850-RLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P910361
REPORT IS A COMBINATION OF REPORTS P900550 AND P897473
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P3F0-020D020US850-RLLONL
Description: 3 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

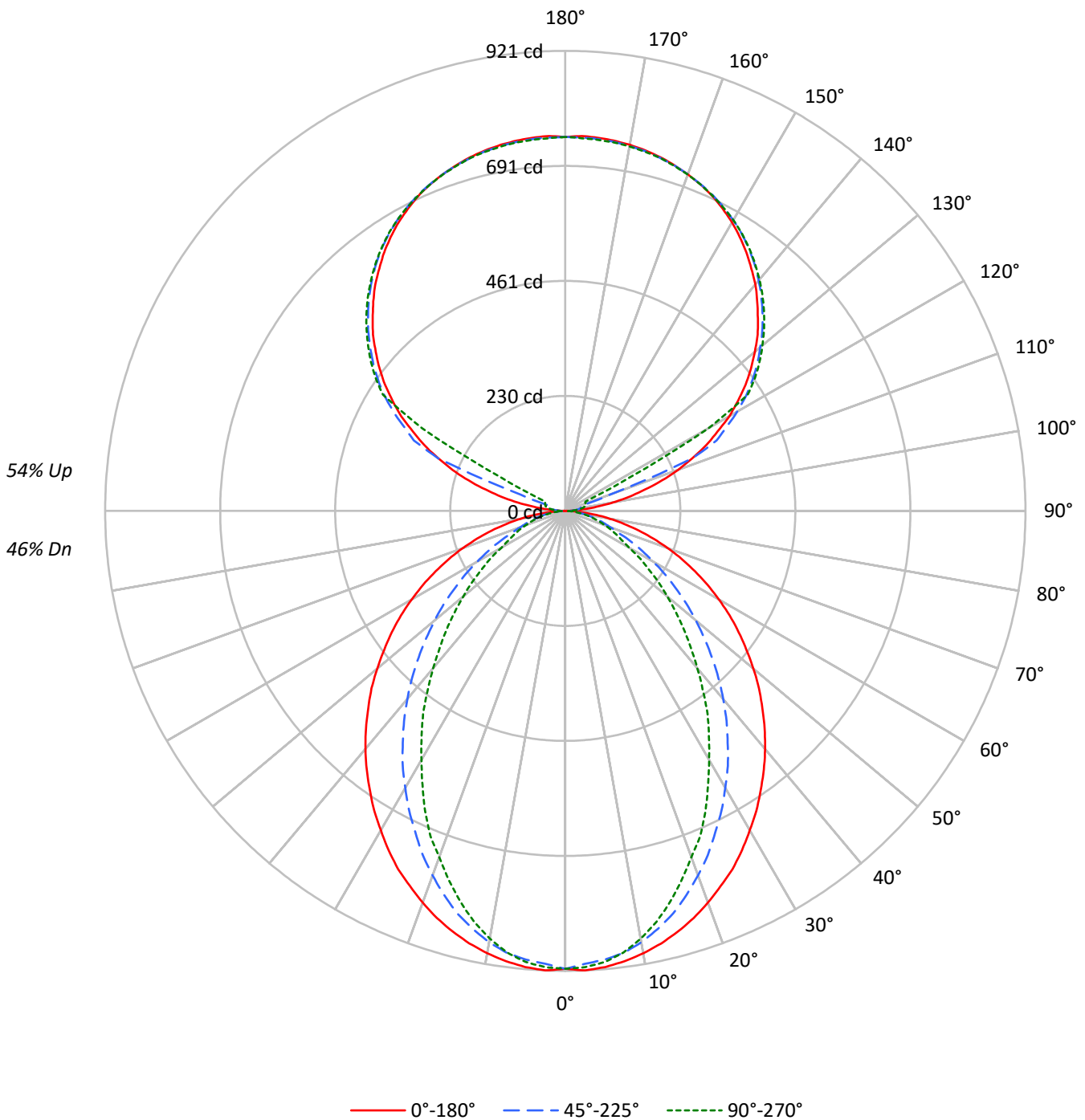
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4081.1 lumens
Efficiency: N/A
Efficacy: 131.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.07' x L: 3.07' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 31
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9951
Total Harmonic Distortion (THDi): 0.07
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	0
RCR																					
0	106	106	106	106	98	98	98	98	81	81	81	66	66	66	53	53	53	46			46
1	97	93	90	86	89	86	83	80	72	70	68	59	58	56	47	46	45	40			40
2	89	82	76	71	82	76	70	66	63	60	57	52	50	48	42	40	39	34			34
3	81	72	65	60	75	67	61	56	56	52	48	47	43	41	38	35	34	29			29
4	75	64	57	51	68	60	53	48	50	45	41	42	38	35	34	31	29	26			26
5	69	58	50	44	63	53	46	41	45	40	36	38	34	31	31	28	26	23			23
6	63	52	44	38	58	48	41	36	41	36	32	34	30	27	28	25	23	20			20
7	59	47	39	34	54	44	37	32	37	32	28	31	27	24	26	23	21	18			18
8	55	43	35	30	50	40	33	28	34	29	25	29	25	22	24	21	19	16			16
9	51	39	32	27	47	36	30	25	31	26	22	27	23	20	22	19	17	15			15
10	48	36	29	24	44	33	27	23	29	24	20	25	21	18	20	18	15	13			13

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1045	1045	1045
5°	1046	1027	1034
10°	1035	1007	1000
15°	1020	973	948
20°	1000	926	884
25°	980	874	822
30°	954	821	744
35°	928	764	675
40°	901	705	596
45°	870	639	524
50°	838	573	455
55°	805	503	388
60°	766	429	319
65°	721	354	287
70°	667	285	259
75°	599	249	235
80°	501	207	202
85°	339	135	150

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 870 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	85.9	2.1
10°-20°	235.8	5.8
20°-30°	331.1	8.1
30°-40°	361.0	8.8
40°-50°	331.8	8.1
50°-60°	260.6	6.4
60°-70°	169.6	4.2
70°-80°	87.3	2.1
80°-90°	23.6	0.6
90°-100°	24.7	0.6
100°-110°	92.0	2.3
110°-120°	244.0	6.0
120°-130°	404.8	9.9
130°-140°	429.9	10.5
140°-150°	399.6	9.8
150°-160°	321.3	7.9
160°-170°	207.0	5.1
170°-180°	71.2	1.7
0°-30°	652.9	16.0
0°-40°	1013.8	24.8
0°-60°	1606.2	39.4
0°-90°	1886.6	46.2
90°-120°	360.7	8.8
90°-150°	1595.0	39.1
90°-180°	2194.0	53.8
0°-180°	4081.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	917	917	917	917	917	
5°	917	913	902	909	907	87
15°	872	863	834	819	811	246
25°	792	765	710	676	664	364
35°	682	640	567	514	496	427
45°	558	502	415	356	336	431
55°	424	359	270	220	204	379
65°	286	219	144	116	114	284
75°	153	94	66	61	60	161
85°	36	18	16	16	16	41
90°	1	6	11	14	15	4
95°	35	17	21	24	23	42
105°	165	181	33	39	41	176
115°	311	321	334	83	44	307
125°	440	447	458	462	463	393
135°	545	554	558	564	563	421
145°	632	632	641	645	642	395
155°	696	691	698	701	697	321
165°	733	730	732	736	732	207
175°	750	746	748	751	746	71
180°	749	749	749	749	749	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	916.7	916.7	916.7	916.7	916.7
2.5°	920.8	916.7	907.5	915.9	914.3
5°	916.7	912.6	901.7	909.3	906.7
7.5°	909.3	904.3	892.6	896.0	891.7
10°	899.3	893.4	876.9	874.3	869.5
12.5°	886.9	879.3	856.9	852.0	842.8
15°	871.9	862.7	834.5	818.8	810.6
17.5°	854.5	841.2	806.4	788.1	774.9
20°	834.5	817.9	776.5	755.8	737.5
22.5°	813.0	793.9	745.8	717.6	705.2
25°	791.5	764.9	710.1	676.2	663.6
27.5°	765.8	737.5	676.9	637.9	618.8
30°	738.4	706.8	640.4	598.2	575.7
32.5°	711.8	673.6	605.6	555.8	535.1
35°	681.9	639.7	566.7	514.4	496.1
37.5°	652.9	607.2	530.1	472.9	452.1
40°	622.1	572.5	492.0	433.1	411.4
42.5°	590.7	537.6	453.8	392.4	371.7
45°	557.5	501.8	414.9	355.9	335.9
47.5°	526.0	467.1	377.5	318.5	300.3
50°	491.2	432.3	341.0	283.7	266.4
52.5°	457.0	394.8	306.1	251.4	235.7
55°	423.9	359.2	269.6	219.9	204.1
57.5°	389.9	323.5	237.3	190.9	177.6
60°	355.1	288.7	203.3	161.0	147.7
62.5°	321.1	254.7	174.2	134.4	127.8
65°	286.2	219.0	144.4	116.2	113.7
67.5°	253.1	185.8	116.2	102.0	99.6
70°	218.1	153.5	96.2	87.9	84.6
72.5°	185.0	123.5	80.4	73.9	72.2
75°	152.6	94.5	66.3	60.6	59.8
77.5°	120.3	67.2	52.2	48.9	47.2
80°	90.4	48.1	39.8	36.5	36.5
82.5°	63.0	32.4	27.4	25.7	25.7
85°	35.6	18.2	15.7	15.7	15.7
87.5°	13.3	6.7	6.7	5.8	5.8
90°	0.6	6.5	10.8	13.5	14.6
92.5°	13.5	11.4	13.0	14.1	14.6
95°	35.2	17.3	21.1	23.8	23.3
97.5°	63.3	19.0	27.6	29.3	29.8
100°	95.9	21.6	30.8	35.2	36.3
102.5°	131.6	130.5	31.9	37.9	39.6
105°	164.7	180.9	33.0	38.9	41.1
107.5°	203.2	216.6	34.2	40.0	42.3
110°	240.0	251.3	94.8	40.7	42.8



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	274.6	284.3	275.1	41.7	43.4
115°	311.4	320.6	334.3	83.4	44.5
117.5°	343.3	354.2	363.4	286.0	144.1
120°	379.2	387.3	397.0	403.6	330.4
122.5°	409.4	418.1	429.0	432.2	432.8
125°	440.4	447.4	457.7	461.5	463.1
127.5°	468.6	476.1	484.3	489.6	490.2
130°	495.1	503.7	509.7	515.7	515.1
132.5°	522.1	529.2	535.1	540.0	539.5
135°	545.0	553.6	558.4	563.9	562.8
137.5°	568.7	575.2	580.7	586.1	584.4
140°	592.0	596.4	602.3	607.2	604.5
142.5°	611.5	615.4	622.4	626.7	623.9
145°	632.1	631.6	640.8	644.6	641.9
147.5°	650.0	648.3	657.5	660.2	658.1
150°	667.3	663.5	672.2	675.4	672.7
152.5°	681.9	677.6	685.7	689.0	685.1
155°	696.0	691.1	697.7	700.9	696.6
157.5°	707.4	703.1	708.0	711.8	707.4
160°	717.2	713.9	717.2	720.4	716.6
162.5°	725.7	722.5	725.3	729.1	724.2
165°	733.4	730.2	731.7	735.6	731.7
167.5°	739.4	736.0	737.7	741.6	736.6
170°	744.2	740.9	742.0	745.8	740.9
172.5°	747.5	744.2	745.4	749.1	744.2
175°	750.1	746.4	747.5	751.2	745.8
177.5°	751.2	747.5	748.0	751.8	746.9
180°	748.6	748.6	748.6	748.6	748.6



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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	6.90	7.70	7.90	8.70	10.03	2.87	3.67	3.86	4.67	6.00
	3H	8.57	9.29	9.58	10.30	11.65	4.05	4.76	5.05	5.77	7.12
	4H	9.18	9.85	10.20	10.87	12.22	4.49	5.17	5.51	6.18	7.54
	6H	9.59	10.22	10.62	11.24	12.60	4.80	5.43	5.83	6.44	7.81
	8H	9.72	10.31	10.75	11.34	12.71	4.89	5.48	5.92	6.52	7.88
	12H	9.78	10.34	10.81	11.37	12.75	4.93	5.49	5.97	6.52	7.91
4H	2H	6.91	7.59	7.94	8.61	9.96	3.45	4.13	4.48	5.15	6.50
	3H	8.74	9.30	9.77	10.34	11.71	4.79	5.36	5.83	6.40	7.77
	4H	9.42	9.94	10.46	10.97	12.36	5.34	5.85	6.38	6.89	8.28
	6H	9.93	10.37	10.98	11.43	12.82	5.75	6.19	6.80	7.25	8.63
	8H	10.10	10.52	11.16	11.57	12.97	5.87	6.28	6.92	7.33	8.74
	12H	10.19	10.57	11.26	11.63	13.04	5.93	6.30	7.00	7.37	8.77
8H	4H	9.39	9.80	10.44	10.85	12.25	5.61	6.02	6.66	7.07	8.48
	6H	9.95	10.29	11.02	11.38	12.78	6.12	6.46	7.19	7.55	8.95
	8H	10.16	10.46	11.24	11.54	12.95	6.30	6.60	7.39	7.68	9.10
	12H	10.29	10.56	11.38	11.63	13.09	6.42	6.68	7.50	7.75	9.21
12H	4H	9.34	9.71	10.41	10.77	12.18	5.61	5.99	6.68	7.05	8.46
	6H	9.92	10.22	11.00	11.30	12.72	6.17	6.47	7.25	7.54	8.96
	8H	10.14	10.40	11.22	11.47	12.93	6.37	6.63	7.45	7.70	9.16