

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: P915841

Luminaire Tested: DFN2DIP-4P3F0-030D030US930-RLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P915841
REPORT IS A COMBINATION OF REPORTS P900562 AND P897473
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P3F0-030D030US930-RLLONL
Description: 3 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

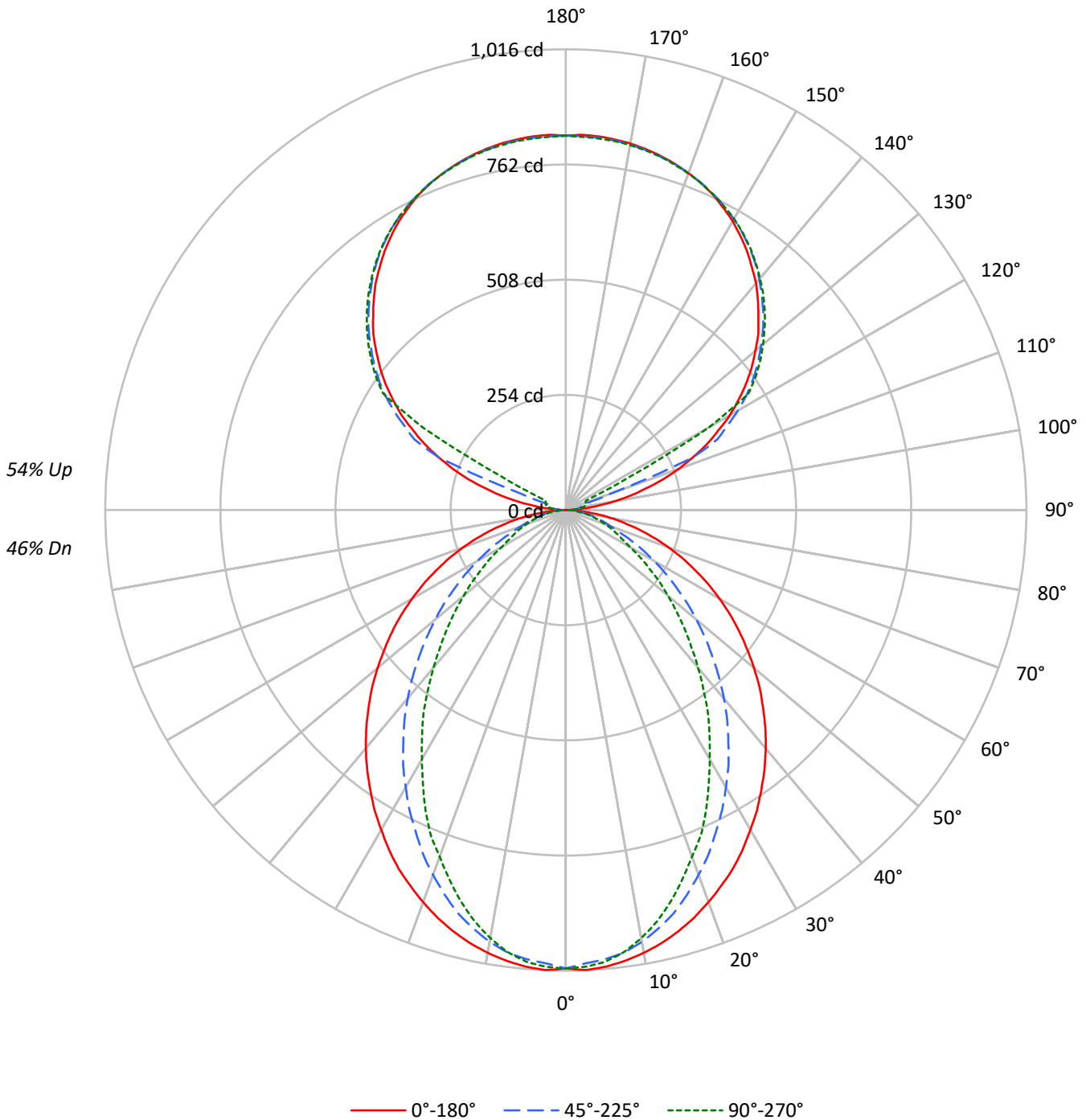
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4500.5 lumens
Efficiency: N/A
Efficacy: 93.4 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): 48.2
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9933
Total Harmonic Distortion (THDi): 0.066
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°	1152	1152	1152
5°	1153	1133	1141
10°	1141	1110	1103
15°	1125	1073	1045
20°	1103	1021	975
25°	1081	964	906
30°	1052	905	820
35°	1023	842	744
40°	994	777	657
45°	960	705	578
50°	924	632	501
55°	887	554	427
60°	845	473	351
65°	796	390	316
70°	736	314	285
75°	661	275	259
80°	552	228	223
85°	375	149	166

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 960 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	94.7	2.1
10°-20°	260.1	5.8
20°-30°	365.1	8.1
30°-40°	398.0	8.8
40°-50°	365.8	8.1
50°-60°	287.3	6.4
60°-70°	187.0	4.2
70°-80°	96.3	2.1
80°-90°	26.0	0.6
90°-100°	27.2	0.6
100°-110°	101.5	2.3
110°-120°	269.1	6.0
120°-130°	446.3	9.9
130°-140°	474.1	10.5
140°-150°	440.6	9.8
150°-160°	354.3	7.9
160°-170°	228.3	5.1
170°-180°	78.6	1.7
0°-30°	720.0	16.0
0°-40°	1118.0	24.8
0°-60°	1771.2	39.4
0°-90°	2080.5	46.2
90°-120°	397.8	8.8
90°-150°	1758.9	39.1
90°-180°	2420.0	53.8
0°-180°	4500.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1011	1011	1011	1011	1011	
5°	1011	1006	994	1003	1000	96
15°	962	951	920	903	894	271
25°	873	843	783	746	732	401
35°	752	705	625	567	547	471
45°	615	553	458	392	370	475
55°	467	396	297	242	225	418
65°	316	242	159	128	125	313
75°	168	104	73	67	66	178
85°	39	20	17	17	17	45
90°	1	7	12	15	16	4
95°	39	19	23	26	26	46
105°	182	200	36	43	45	194
115°	343	354	368	92	49	338
125°	486	493	505	509	511	433
135°	601	610	616	622	621	464
145°	697	696	707	711	708	436
155°	768	762	769	773	768	354
165°	809	805	807	811	807	228
175°	827	823	824	828	822	79
180°	826	826	826	826	826	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1010.9	1010.9	1010.9	1010.9	1010.9
2.5°	1015.5	1010.9	1000.8	1010.0	1008.2
5°	1010.9	1006.3	994.4	1002.7	999.9
7.5°	1002.7	997.2	984.4	988.0	983.4
10°	991.6	985.3	967.0	964.2	958.8
12.5°	978.0	969.7	945.0	939.5	929.4
15°	961.5	951.4	920.3	902.9	893.8
17.5°	942.2	927.6	889.2	869.1	854.4
20°	920.3	902.0	856.2	833.5	813.3
22.5°	896.6	875.5	822.4	791.3	777.6
25°	872.8	843.4	783.1	745.6	731.8
27.5°	844.4	813.3	746.5	703.5	682.4
30°	814.2	779.4	706.2	659.7	634.9
32.5°	784.9	742.8	667.9	612.9	590.0
35°	752.0	705.3	624.8	567.2	547.1
37.5°	720.0	669.6	584.6	521.4	498.6
40°	686.2	631.3	542.5	477.5	453.8
42.5°	651.3	592.9	500.4	432.7	409.9
45°	614.8	553.4	457.5	392.4	370.5
47.5°	580.0	515.1	416.3	351.2	331.2
50°	541.6	476.6	376.0	312.8	293.7
52.5°	504.0	435.5	337.6	277.2	259.8
55°	467.4	396.1	297.3	242.5	225.1
57.5°	430.0	356.8	261.7	210.4	195.8
60°	391.5	318.4	224.1	177.5	162.9
62.5°	354.1	280.9	192.1	148.2	141.0
65°	315.6	241.5	159.1	128.1	125.3
67.5°	279.1	204.9	128.1	112.5	109.7
70°	240.6	169.3	106.1	96.9	93.3
72.5°	204.0	136.2	88.7	81.4	79.6
75°	168.3	104.3	73.2	66.8	65.9
77.5°	132.6	74.0	57.6	54.0	52.1
80°	99.7	53.1	43.9	40.3	40.3
82.5°	69.5	35.7	30.2	28.4	28.4
85°	39.3	20.1	17.4	17.4	17.4
87.5°	14.7	7.3	7.3	6.4	6.4
90°	0.6	7.2	11.9	15.0	16.1
92.5°	15.0	12.6	14.3	15.6	16.1
95°	38.8	19.1	23.2	26.3	25.7
97.5°	69.9	21.0	30.4	32.3	32.9
100°	105.7	23.9	34.1	38.8	40.0
102.5°	145.1	144.0	35.2	41.7	43.6
105°	181.6	199.5	36.4	43.0	45.4
107.5°	224.0	238.9	37.7	44.2	46.6
110°	264.6	277.1	104.5	44.8	47.2



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	302.9	313.6	303.5	46.0	47.8
115°	343.4	353.6	368.5	92.0	49.0
117.5°	378.7	390.6	400.8	315.4	158.9
120°	418.1	427.1	437.8	445.0	364.4
122.5°	451.5	461.1	473.1	476.6	477.3
125°	485.6	493.3	504.8	508.9	510.7
127.5°	516.7	525.0	534.0	540.0	540.5
130°	545.9	555.5	562.1	568.6	568.1
132.5°	575.8	583.6	590.1	595.5	594.9
135°	600.9	610.5	615.8	621.8	620.6
137.5°	627.1	634.3	640.3	646.3	644.5
140°	652.8	657.6	664.1	669.5	666.6
142.5°	674.4	678.6	686.3	691.0	688.1
145°	697.1	696.4	706.6	710.8	707.8
147.5°	716.7	714.9	725.1	728.1	725.7
150°	735.9	731.7	741.3	744.8	741.8
152.5°	751.9	747.2	756.2	759.8	755.6
155°	767.5	762.2	769.3	772.9	768.2
157.5°	780.1	775.3	780.7	784.9	780.1
160°	790.8	787.3	790.8	794.4	790.2
162.5°	800.4	796.8	799.8	804.0	798.6
165°	808.7	805.2	807.0	811.1	807.0
167.5°	815.3	811.7	813.5	817.7	812.4
170°	820.7	817.1	818.3	822.5	817.1
172.5°	824.3	820.7	821.9	826.1	820.7
175°	827.2	823.0	824.3	828.4	822.5
177.5°	828.4	824.3	824.9	829.1	823.7
180°	825.5	825.5	825.5	825.5	825.5



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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	7.24	8.04	8.24	9.04	10.37	3.20	4.00	4.20	5.00	6.33
	3H	8.91	9.63	9.92	10.64	11.99	4.38	5.10	5.39	6.11	7.46
	4H	9.52	10.19	10.54	11.21	12.56	4.83	5.50	5.85	6.52	7.87
	6H	9.93	10.56	10.96	11.58	12.94	5.14	5.76	6.17	6.78	8.15
	8H	10.06	10.65	11.09	11.68	13.05	5.23	5.82	6.26	6.86	8.22
	12H	10.12	10.68	11.16	11.71	13.10	5.27	5.83	6.31	6.86	8.25
4H	2H	7.25	7.93	8.28	8.95	10.30	3.79	4.47	4.82	5.48	6.84
	3H	9.08	9.64	10.11	10.68	12.05	5.13	5.69	6.16	6.74	8.11
	4H	9.76	10.28	10.80	11.31	12.71	5.67	6.19	6.71	7.22	8.61
	6H	10.27	10.71	11.32	11.77	13.16	6.08	6.53	7.13	7.58	8.97
	8H	10.44	10.86	11.50	11.91	13.31	6.21	6.62	7.26	7.67	9.07
	12H	10.54	10.91	11.60	11.97	13.38	6.27	6.64	7.34	7.71	9.11
8H	4H	9.73	10.14	10.78	11.19	12.59	5.95	6.36	7.00	7.41	8.81
	6H	10.29	10.63	11.36	11.72	13.12	6.46	6.80	7.53	7.89	9.29
	8H	10.50	10.80	11.58	11.88	13.30	6.64	6.94	7.73	8.02	9.44
	12H	10.63	10.90	11.72	11.97	13.43	6.76	7.02	7.84	8.09	9.55
12H	4H	9.68	10.05	10.75	11.12	12.52	5.95	6.32	7.02	7.39	8.80
	6H	10.26	10.56	11.34	11.64	13.06	6.51	6.80	7.59	7.88	9.30
	8H	10.48	10.74	11.56	11.81	13.27	6.71	6.97	7.79	8.04	9.50