

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: P907632

Luminaire Tested: DFN2DIP-4P3F0-020D020US840-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P907632
REPORT IS A COMBINATION OF REPORTS P899030 AND P895917
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P3F0-020D020US840-RLLFLL
Description: 3 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

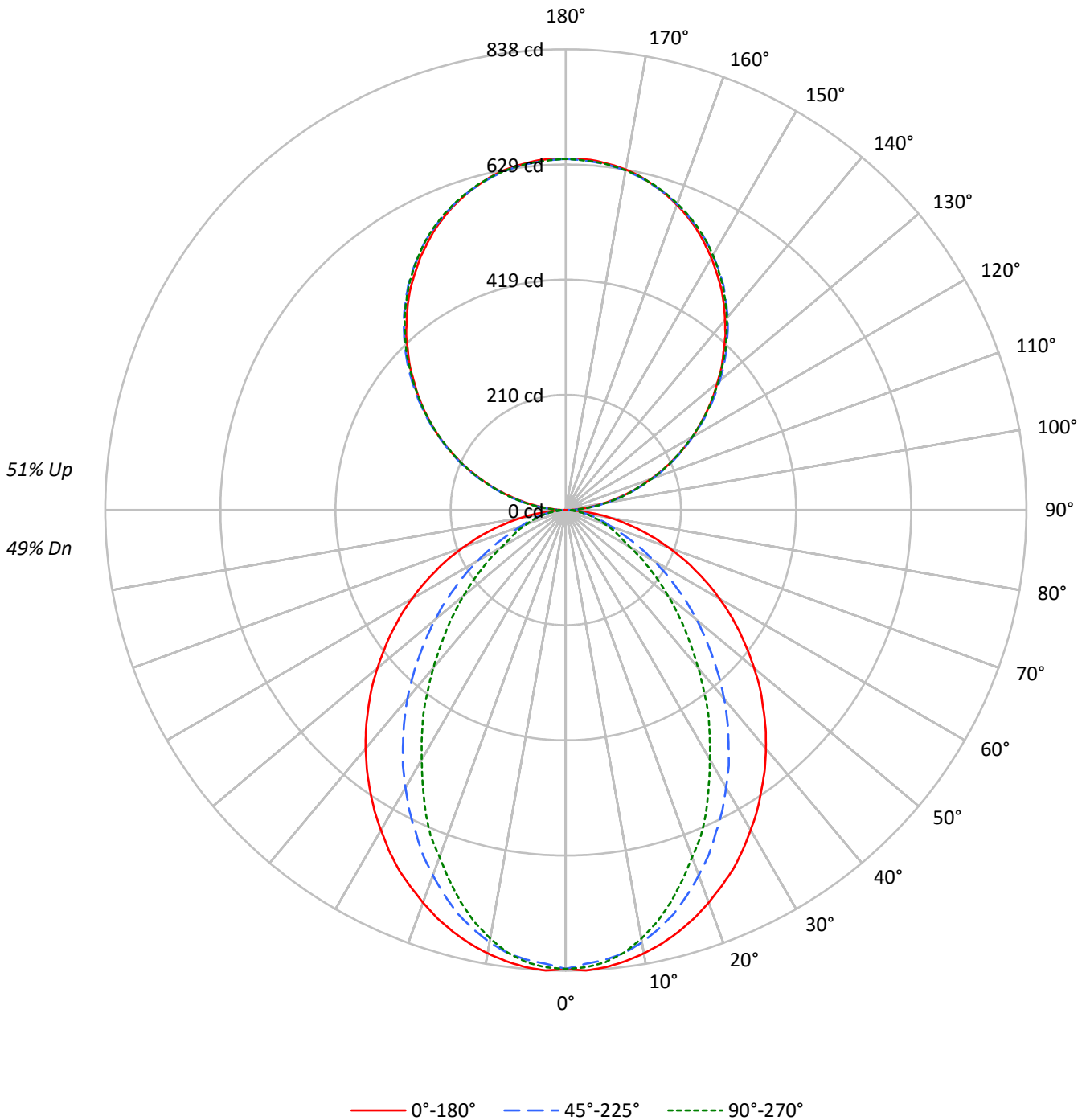
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3504.2 lumens
Efficiency: N/A
Efficacy: 113.0 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				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	107	107	107	107	99	99	99	99	83	83	83	68	68	68	55	55	55	49				49
1	98	94	90	87	90	87	84	81	73	71	69	61	59	58	50	49	48	42				42
2	90	83	77	72	82	76	71	67	65	61	58	54	51	49	44	42	41	36				36
3	82	73	66	60	75	68	61	57	58	53	49	48	45	42	40	37	35	31				31
4	75	65	57	51	69	60	54	48	51	46	42	43	40	36	36	33	31	27				27
5	69	58	50	44	64	54	47	42	46	41	37	39	35	32	32	29	27	24				24
6	64	52	44	39	59	49	42	37	42	36	32	35	31	28	30	26	24	21				21
7	59	47	40	34	55	44	37	32	38	33	29	32	28	25	27	24	22	19				19
8	55	43	36	30	51	40	33	29	35	29	26	30	26	23	25	22	20	17				17
9	51	39	32	27	47	37	30	26	32	27	23	27	23	20	23	20	18	16				16
10	48	36	29	24	44	34	28	23	30	24	21	25	21	19	22	18	16	14				14

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	951	951	951
5°	952	936	942
10°	942	917	911
15°	929	886	863
20°	911	843	805
25°	893	796	748
30°	868	748	677
35°	845	695	614
40°	820	642	543
45°	792	582	477
50°	763	522	414
55°	733	458	353
60°	698	391	290
65°	657	323	261
70°	607	259	236
75°	546	227	214
80°	456	189	184
85°	309	123	136

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 792 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	78.2	2.2
10°-20°	214.8	6.1
20°-30°	301.5	8.6
30°-40°	328.7	9.4
40°-50°	302.1	8.6
50°-60°	237.3	6.8
60°-70°	154.4	4.4
70°-80°	79.5	2.3
80°-90°	22.1	0.6
90°-100°	39.5	1.1
100°-110°	125.6	3.6
110°-120°	214.9	6.1
120°-130°	282.7	8.1
130°-140°	317.3	9.1
140°-150°	311.1	8.9
150°-160°	261.0	7.4
160°-170°	173.1	4.9
170°-180°	60.5	1.7
0°-30°	594.5	17.0
0°-40°	923.2	26.3
0°-60°	1462.6	41.7
0°-90°	1718.6	49.0
90°-120°	380.0	10.8
90°-150°	1291.1	36.8
90°-180°	1786.0	51.0
0°-180°	3504.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	835	835	835	835	835	
5°	835	831	821	828	826	79
15°	794	786	760	746	738	224
25°	721	696	647	616	604	331
35°	621	582	516	468	452	389
45°	508	457	378	324	306	392
55°	386	327	246	200	186	345
65°	261	199	132	106	104	258
75°	139	86	60	55	54	147
85°	32	17	14	14	14	37
90°	1	7	19	18	18	3
95°	28	34	34	34	34	31
105°	116	117	119	120	120	122
115°	216	219	218	217	216	213
125°	314	318	317	315	315	280
135°	406	412	413	412	411	314
145°	493	496	500	500	498	308
155°	563	565	566	569	568	259
165°	613	612	612	616	613	173
175°	638	636	635	639	636	61
180°	639	639	639	639	639	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	834.8	834.8	834.8	834.8	834.8
2.5°	838.5	834.8	826.4	834.0	832.5
5°	834.8	831.0	821.1	828.0	825.7
7.5°	828.0	823.4	812.8	815.9	812.0
10°	818.9	813.5	798.5	796.2	791.7
12.5°	807.6	800.7	780.3	775.9	767.5
15°	794.0	785.6	759.9	745.6	738.1
17.5°	778.1	766.0	734.3	717.6	705.6
20°	759.9	744.8	707.1	688.2	671.6
22.5°	740.3	723.0	679.1	653.5	642.2
25°	720.7	696.5	646.6	615.7	604.3
27.5°	697.3	671.6	616.4	580.9	563.5
30°	672.4	643.6	583.2	544.7	524.2
32.5°	648.1	613.4	551.5	506.1	487.3
35°	621.0	582.5	516.0	468.4	451.7
37.5°	594.5	552.9	482.7	430.6	411.7
40°	566.5	521.3	448.0	394.4	374.7
42.5°	537.9	489.6	413.2	357.3	338.5
45°	507.7	457.0	377.8	324.1	305.9
47.5°	479.0	425.4	343.8	290.0	273.5
50°	447.3	393.6	310.5	258.3	242.6
52.5°	416.2	359.5	278.7	228.9	214.6
55°	386.0	327.1	245.5	200.3	185.8
57.5°	355.1	294.6	216.1	173.8	161.7
60°	323.4	262.9	185.1	146.6	134.5
62.5°	292.4	232.0	158.6	122.4	116.3
65°	260.6	199.4	131.5	105.8	103.5
67.5°	230.5	169.2	105.8	92.9	90.7
70°	198.6	139.8	87.6	80.1	77.1
72.5°	168.4	112.5	73.2	67.3	65.7
75°	139.0	86.0	60.4	55.1	54.4
77.5°	109.6	61.2	47.6	44.5	43.0
80°	82.3	43.8	36.3	33.2	33.2
82.5°	57.4	29.5	24.9	23.4	23.4
85°	32.4	16.6	14.3	14.3	14.3
87.5°	12.1	6.1	6.1	5.3	5.3
90°	0.6	7.0	18.9	17.7	18.3
92.5°	11.9	16.2	16.8	17.4	17.4
95°	28.1	33.5	34.4	34.4	33.5
97.5°	46.8	51.8	53.9	53.9	53.9
100°	68.4	72.8	74.3	74.3	73.7
102.5°	91.1	94.3	96.4	97.0	96.4
105°	115.9	117.4	118.7	119.6	119.6
107.5°	140.6	142.9	142.9	143.3	140.6
110°	164.5	167.5	167.5	167.5	166.0



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	190.3	193.5	193.0	191.4	190.3
115°	215.7	218.7	217.8	217.2	215.7
117.5°	241.0	245.2	242.5	241.0	239.3
120°	266.3	270.5	266.3	266.3	264.6
122.5°	289.4	294.8	292.2	290.6	289.4
125°	313.7	318.5	317.0	315.3	314.7
127.5°	337.4	343.4	341.2	338.9	337.4
130°	359.5	366.5	365.5	364.4	362.2
132.5°	384.4	389.8	390.1	387.5	385.9
135°	405.8	411.7	412.8	412.3	410.7
137.5°	429.6	434.4	435.5	435.1	432.7
140°	450.6	455.4	458.2	458.2	456.1
142.5°	472.2	477.0	478.6	479.1	477.0
145°	492.6	496.4	499.6	500.1	498.0
147.5°	510.9	515.7	518.1	519.0	516.8
150°	529.8	533.0	535.1	536.8	535.1
152.5°	546.5	549.8	552.5	554.6	552.5
155°	563.3	564.8	566.5	569.3	567.5
157.5°	577.7	578.9	579.9	583.7	581.0
160°	590.7	591.8	592.4	595.6	593.3
162.5°	602.6	602.6	603.1	606.8	604.1
165°	612.8	612.2	612.2	616.0	613.4
167.5°	622.0	620.3	620.3	624.1	621.5
170°	628.9	627.4	626.8	630.7	627.4
172.5°	633.8	632.2	631.7	635.5	632.2
175°	637.6	636.1	634.9	638.7	635.5
177.5°	639.7	638.2	637.0	640.3	637.0
180°	638.7	638.7	638.7	638.7	638.7



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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	6.85	7.67	7.82	8.65	9.94	2.81	3.63	3.78	4.61	5.90
	3H	8.52	9.26	9.50	10.25	11.56	3.99	4.73	4.98	5.72	7.03
	4H	9.13	9.82	10.12	10.82	12.13	4.44	5.13	5.43	6.13	7.44
	6H	9.54	10.18	10.55	11.18	12.51	4.75	5.39	5.76	6.39	7.72
	8H	9.67	10.28	10.68	11.29	12.62	4.84	5.45	5.85	6.46	7.79
	12H	9.73	10.31	10.74	11.31	12.67	4.88	5.46	5.90	6.47	7.82
4H	2H	6.86	7.56	7.87	8.55	9.87	3.40	4.10	4.41	5.09	6.41
	3H	8.69	9.26	9.70	10.29	11.62	4.75	5.32	5.76	6.35	7.68
	4H	9.37	9.90	10.39	10.92	12.27	5.29	5.81	6.31	6.83	8.19
	6H	9.89	10.34	10.91	11.38	12.73	5.70	6.15	6.73	7.19	8.54
	8H	10.06	10.48	11.09	11.51	12.88	5.82	6.25	6.85	7.28	8.64
	12H	10.15	10.53	11.20	11.58	12.95	5.88	6.26	6.93	7.31	8.68
8H	4H	9.34	9.76	10.37	10.80	12.16	5.56	5.99	6.59	7.02	8.38
	6H	9.90	10.25	10.96	11.32	12.69	6.07	6.42	7.13	7.49	8.86
	8H	10.11	10.42	11.18	11.48	12.86	6.26	6.56	7.32	7.62	9.01
	12H	10.25	10.52	11.31	11.57	13.00	6.37	6.64	7.43	7.69	9.12
12H	4H	9.29	9.67	10.34	10.72	12.09	5.57	5.95	6.62	7.00	8.37
	6H	9.88	10.18	10.94	11.24	12.63	6.12	6.43	7.18	7.49	8.87
	8H	10.09	10.36	11.16	11.42	12.84	6.32	6.59	7.39	7.65	9.07