

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: P913055

Luminaire Tested: DFN2DIP-4P2F0-020D030US927-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P913055
REPORT IS A COMBINATION OF REPORTS P900537 AND P897455
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P2F0-020D030US927-FLLONL
Description: 2 foot, 90deg - 4way Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

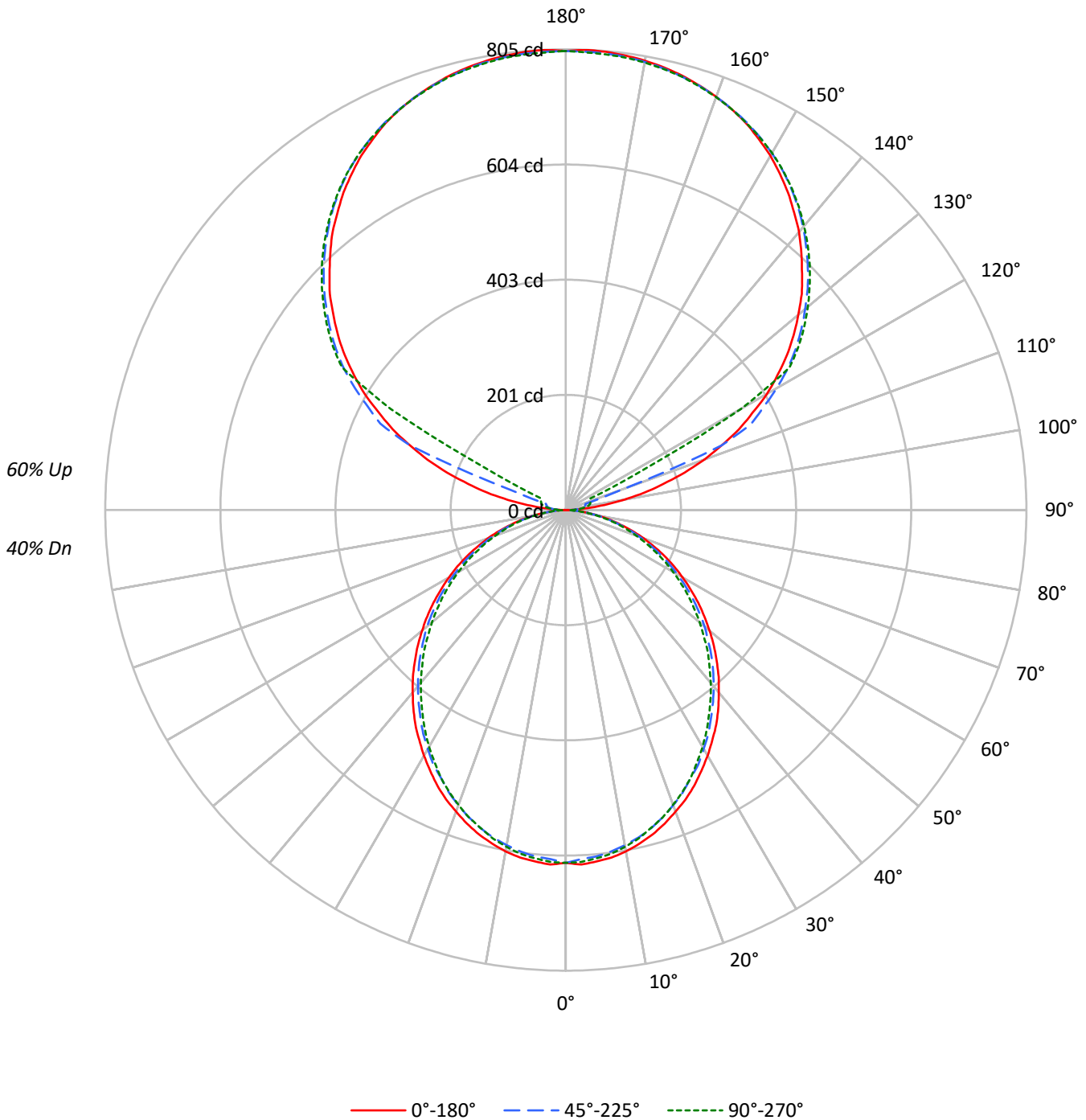
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3921.3 lumens
Efficiency: N/A
Efficacy: 98.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.07' x L: 2.07' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 40
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9967
Total Harmonic Distortion (THDi): 0.063
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	105	105	105	105	95	95	95	95	78	78	78	62	62	62	47	47	47	47	47	47	40
1	96	91	87	84	87	83	80	77	68	66	64	54	53	51	41	41	40	40	40	40	34
2	87	80	74	69	79	73	68	63	60	56	53	48	45	43	37	35	33	33	33	33	28
3	79	70	63	57	72	64	58	53	53	48	44	42	39	36	32	30	28	28	28	28	24
4	73	62	54	48	66	57	50	45	47	42	38	37	34	31	29	26	24	24	24	24	21
5	67	55	47	41	60	50	44	38	42	37	33	34	30	27	26	23	21	21	21	21	18
6	61	49	41	36	56	45	38	33	38	32	28	30	26	23	24	21	19	19	19	19	16
7	57	45	37	31	51	41	34	29	34	29	25	28	24	21	22	19	17	17	17	17	14
8	52	40	33	27	48	37	30	26	31	26	22	25	21	18	20	17	15	15	15	15	12
9	49	37	29	24	44	34	27	23	28	23	20	23	19	17	18	15	13	13	13	13	11
10	46	34	27	22	41	31	25	20	26	21	18	21	18	15	17	14	12	12	12	12	10

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1544	1544	1544
5°	1543	1518	1530
10°	1528	1494	1506
15°	1502	1465	1472
20°	1469	1427	1436
25°	1435	1382	1395
30°	1394	1341	1344
35°	1355	1292	1290
40°	1307	1243	1238
45°	1260	1193	1185
50°	1208	1141	1125
55°	1153	1080	1068
60°	1090	1009	1003
65°	1022	935	926
70°	935	844	844
75°	817	736	763
80°	671	598	617
85°	448	373	385

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 1260 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	58.0	1.5
10°-20°	163.3	4.2
20°-30°	239.9	6.1
30°-40°	278.7	7.1
40°-50°	278.3	7.1
50°-60°	242.7	6.2
60°-70°	179.4	4.6
70°-80°	101.5	2.6
80°-90°	28.2	0.7
90°-100°	26.5	0.7
100°-110°	98.6	2.5
110°-120°	261.5	6.7
120°-130°	433.7	11.1
130°-140°	460.7	11.7
140°-150°	428.1	10.9
150°-160°	344.2	8.8
160°-170°	221.8	5.7
170°-180°	76.3	1.9
0°-30°	461.2	11.8
0°-40°	739.9	18.9
0°-60°	1260.8	32.2
0°-90°	1569.9	40.0
90°-120°	386.5	9.9
90°-150°	1709.0	43.6
90°-180°	2351.0	60.0
0°-180°	3921.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	616	616	616	616	616	
5°	616	614	608	612	611	59
15°	587	583	576	578	575	165
25°	531	526	516	518	516	244
35°	458	452	443	439	436	286
45°	373	369	360	353	351	288
55°	282	279	272	264	261	252
65°	190	187	181	176	172	188
75°	100	98	95	92	93	106
85°	24	24	23	21	21	27
90°	1	7	12	15	16	4
95°	38	18	23	26	25	45
105°	176	194	35	42	44	188
115°	334	344	358	89	48	329
125°	472	479	490	494	496	421
135°	584	593	598	604	603	451
145°	677	677	687	691	688	424
155°	746	741	748	751	746	344
165°	786	782	784	788	784	222
175°	804	800	801	805	799	76
180°	802	802	802	802	802	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	616.5	616.5	616.5	616.5	616.5
2.5°	620.0	617.1	610.5	616.5	615.4
5°	616.5	614.2	607.6	612.4	611.2
7.5°	612.4	608.8	602.3	607.0	605.9
10°	605.9	601.7	594.6	599.3	597.5
12.5°	596.9	593.4	586.3	589.2	588.0
15°	586.8	583.4	575.6	578.0	575.0
17.5°	574.4	570.9	563.2	566.1	563.2
20°	560.8	557.2	548.9	550.7	548.3
22.5°	547.2	541.9	534.1	534.1	532.9
25°	531.2	526.4	516.3	517.5	516.3
27.5°	513.3	509.2	501.5	499.8	496.8
30°	495.6	490.8	482.0	480.2	477.8
32.5°	476.6	473.1	463.6	460.0	457.6
35°	458.3	452.3	442.8	439.3	436.3
37.5°	437.5	432.1	422.6	418.5	415.5
40°	416.1	411.4	401.9	396.6	394.2
42.5°	395.4	390.6	381.2	375.3	371.7
45°	372.9	368.8	359.8	353.3	350.9
47.5°	350.9	346.8	337.3	330.7	327.3
50°	327.8	324.9	316.6	308.2	305.3
52.5°	305.3	301.1	293.4	286.9	282.8
55°	282.2	278.6	271.5	264.4	261.4
57.5°	259.0	256.1	248.3	241.3	238.8
60°	235.9	233.6	225.3	218.7	217.0
62.5°	213.4	209.2	203.4	197.4	195.0
65°	190.3	186.7	180.9	175.5	172.5
67.5°	166.6	163.6	158.3	154.2	151.8
70°	144.7	142.3	136.9	132.8	130.5
72.5°	122.2	119.8	116.8	112.6	110.9
75°	99.6	98.5	95.4	91.9	93.1
77.5°	79.5	77.1	75.8	74.1	72.3
80°	59.3	58.7	57.5	55.7	54.5
82.5°	40.3	40.3	39.8	37.4	37.4
85°	24.2	23.7	23.1	21.3	20.8
87.5°	10.7	9.5	8.3	6.6	5.9
90°	0.6	7.0	11.6	14.6	15.6
92.5°	14.6	12.2	13.9	15.1	15.6
95°	37.7	18.5	22.6	25.6	25.0
97.5°	67.9	20.4	29.5	31.4	31.9
100°	102.7	23.2	33.1	37.7	38.9
102.5°	141.0	139.9	34.2	40.6	42.4
105°	176.4	193.8	35.4	41.7	44.1
107.5°	217.6	232.1	36.6	42.9	45.3
110°	257.1	269.3	101.6	43.6	45.9



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	294.3	304.7	294.8	44.7	46.4
115°	333.7	343.6	358.1	89.4	47.6
117.5°	368.0	379.5	389.4	306.4	154.4
120°	406.2	414.9	425.4	432.4	354.0
122.5°	438.7	448.1	459.7	463.1	463.7
125°	471.8	479.3	490.4	494.5	496.2
127.5°	502.0	510.1	518.9	524.7	525.2
130°	530.4	539.8	546.1	552.5	552.0
132.5°	559.4	567.0	573.4	578.6	578.1
135°	583.8	593.2	598.3	604.2	603.0
137.5°	609.3	616.3	622.2	628.0	626.2
140°	634.3	639.0	645.3	650.5	647.7
142.5°	655.3	659.3	666.9	671.5	668.6
145°	677.3	676.7	686.6	690.6	687.7
147.5°	696.4	694.7	704.6	707.4	705.1
150°	715.0	711.0	720.3	723.7	720.8
152.5°	730.6	726.0	734.7	738.2	734.2
155°	745.8	740.6	747.5	751.0	746.4
157.5°	758.0	753.4	758.6	762.6	758.0
160°	768.4	764.9	768.4	771.9	767.8
162.5°	777.7	774.2	777.1	781.2	775.9
165°	785.8	782.4	784.1	788.1	784.1
167.5°	792.2	788.7	790.4	794.6	789.3
170°	797.4	793.9	795.1	799.2	793.9
172.5°	800.9	797.4	798.6	802.6	797.4
175°	803.7	799.7	800.9	804.9	799.2
177.5°	804.9	800.9	801.5	805.6	800.3
180°	802.1	802.1	802.1	802.1	802.1



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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	7.65	8.43	8.69	9.47	10.88	7.20	7.98	8.24	9.03	10.43
	3H	9.28	9.98	10.33	11.03	12.46	8.79	9.49	9.84	10.54	11.97
	4H	9.85	10.51	10.91	11.57	13.00	9.36	10.02	10.42	11.07	12.51
	6H	10.23	10.84	11.30	11.90	13.34	9.73	10.34	10.80	11.40	12.84
	8H	10.32	10.90	11.40	11.98	13.42	9.82	10.40	10.89	11.47	12.91
	12H	10.36	10.91	11.44	11.98	13.44	9.85	10.40	10.93	11.47	12.93
4H	2H	8.09	8.75	9.15	9.80	11.24	7.73	8.39	8.80	9.45	10.88
	3H	9.92	10.47	10.99	11.55	13.00	9.51	10.06	10.59	11.15	12.59
	4H	10.61	11.12	11.69	12.19	13.66	10.19	10.69	11.27	11.77	13.24
	6H	11.10	11.54	12.19	12.63	14.09	10.67	11.10	11.76	12.20	13.66
	8H	11.24	11.64	12.33	12.73	14.21	10.80	11.21	11.89	12.30	13.77
	12H	11.30	11.66	12.40	12.77	14.25	10.85	11.22	11.95	12.32	13.80
8H	4H	10.79	11.19	11.88	12.28	13.76	10.41	10.82	11.50	11.91	13.38
	6H	11.39	11.72	12.50	12.86	14.33	11.00	11.34	12.11	12.47	13.94
	8H	11.59	11.89	12.71	13.00	14.49	11.20	11.49	12.32	12.61	14.10
	12H	11.71	11.96	12.83	13.07	14.60	11.30	11.55	12.42	12.66	14.19
12H	4H	10.77	11.14	11.87	12.24	13.72	10.40	10.76	11.50	11.87	13.35
	6H	11.41	11.71	12.53	12.82	14.31	11.04	11.33	12.16	12.45	13.94
	8H	11.63	11.89	12.75	13.00	14.53	11.25	11.51	12.37	12.62	14.15