

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: P915780

Luminaire Tested: DFN2DIP-4P2F0-020D020US930-RLFL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P915780
REPORT IS A COMBINATION OF REPORTS P899012 AND P895899
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P2F0-020D020US930-RLLFLL
Description: 2 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

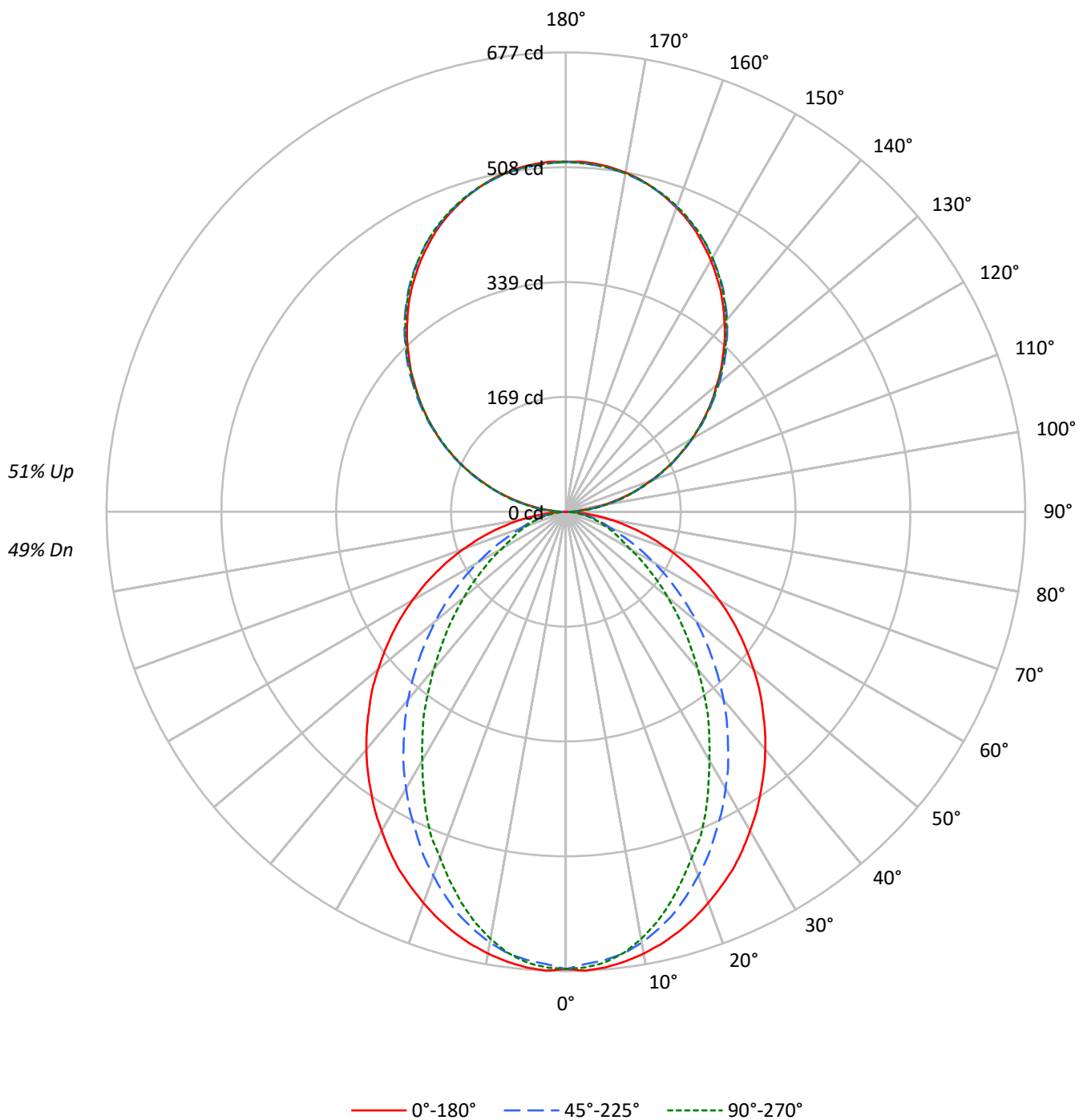
Lumens per Lamp: N/A
Luminaire Lumens: 2829.1 lumens
Efficiency: N/A
Efficacy: 87.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.07' x L: 2.07' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 32.3
Input Voltage (V):
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
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10
RCR																	
0	107	107	107	107	99	99	99	99	83	83	83	68	68	68	55	55	55
1	98	94	90	87	90	87	84	81	73	71	69	61	59	58	50	49	48
2	90	83	77	72	82	76	71	67	65	61	58	54	51	49	44	42	41
3	82	73	66	60	75	68	61	57	58	53	49	48	45	42	40	37	35
4	75	65	57	51	69	60	54	48	51	46	42	43	40	36	36	33	31
5	69	58	50	44	64	54	47	42	46	41	37	39	35	32	32	29	27
6	64	52	44	39	59	49	42	37	42	36	32	35	31	28	30	26	24
7	59	47	40	34	55	44	37	32	38	33	29	32	28	25	27	24	22
8	55	43	36	30	51	40	33	29	35	29	26	30	26	23	25	22	20
9	51	39	32	27	47	37	30	26	32	27	23	27	23	20	23	20	18
10	48	36	29	24	44	34	28	23	30	24	21	25	21	19	22	18	16

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1687	1687	1687
5°	1687	1656	1668
10°	1667	1620	1612
15°	1640	1562	1525
20°	1607	1484	1420
25°	1572	1398	1318
30°	1527	1310	1190
35°	1482	1215	1078
40°	1437	1118	950
45°	1385	1011	834
50°	1330	903	721
55°	1273	788	613
60°	1207	669	502
65°	1130	549	449
70°	1037	436	402
75°	920	376	360
80°	752	305	303
85°	485	187	215

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1385 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	63.2	2.2
10°-20°	173.4	6.1
20°-30°	243.4	8.6
30°-40°	265.4	9.4
40°-50°	243.9	8.6
50°-60°	191.5	6.8
60°-70°	124.7	4.4
70°-80°	64.2	2.3
80°-90°	17.8	0.6
90°-100°	31.9	1.1
100°-110°	101.4	3.6
110°-120°	173.5	6.1
120°-130°	228.2	8.1
130°-140°	256.1	9.1
140°-150°	251.2	8.9
150°-160°	210.7	7.4
160°-170°	139.7	4.9
170°-180°	48.8	1.7
0°-30°	480.0	17.0
0°-40°	745.3	26.3
0°-60°	1180.8	41.7
0°-90°	1387.5	49.0
90°-120°	306.8	10.8
90°-150°	1042.3	36.8
90°-180°	1442.0	51.0
0°-180°	2829.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	674	674	674	674	674	
5°	674	671	663	668	667	64
15°	641	634	614	602	596	181
25°	582	562	522	497	488	268
35°	501	470	417	378	365	314
45°	410	369	305	262	247	317
55°	312	264	198	162	150	278
65°	210	161	106	85	84	209
75°	112	70	49	44	44	119
85°	26	13	12	12	12	30
90°	0	6	15	14	15	3
95°	23	27	28	28	27	25
105°	94	95	96	96	96	99
115°	174	177	176	175	174	172
125°	253	257	256	254	254	226
135°	328	332	333	333	332	253
145°	398	401	403	404	402	248
155°	455	456	457	460	458	209
165°	495	494	494	497	495	140
175°	515	514	513	516	513	49
180°	516	516	516	516	516	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	673.9	673.9	673.9	673.9	673.9
2.5°	676.9	673.9	667.2	673.4	672.1
5°	673.9	670.9	662.9	668.5	666.6
7.5°	668.5	664.8	656.2	658.7	655.6
10°	661.1	656.8	644.7	642.8	639.2
12.5°	652.0	646.4	630.0	626.4	619.6
15°	641.0	634.2	613.5	601.9	595.9
17.5°	628.2	618.4	592.8	579.4	569.6
20°	613.5	601.3	570.9	555.6	542.2
22.5°	597.7	583.7	548.3	527.6	518.4
25°	581.9	562.3	522.0	497.1	487.9
27.5°	563.0	542.2	497.7	469.0	454.9
30°	542.8	519.6	470.8	439.8	423.2
32.5°	523.3	495.2	445.2	408.6	393.4
35°	501.3	470.3	416.6	378.1	364.7
37.5°	480.0	446.4	389.7	347.6	332.4
40°	457.4	420.9	361.7	318.4	302.5
42.5°	434.2	395.3	333.6	288.5	273.3
45°	409.9	368.9	305.0	261.6	247.0
47.5°	386.7	343.4	277.5	234.2	220.8
50°	361.1	317.8	250.7	208.6	195.8
52.5°	336.0	290.2	225.0	184.8	173.3
55°	311.6	264.1	198.2	161.7	150.0
57.5°	286.7	237.8	174.5	140.3	130.5
60°	261.1	212.2	149.4	118.4	108.6
62.5°	236.0	187.3	128.1	98.8	93.9
65°	210.4	161.0	106.2	85.4	83.6
67.5°	186.1	136.6	85.4	75.0	73.2
70°	160.4	112.8	70.7	64.7	62.2
72.5°	136.0	90.8	59.1	54.3	53.1
75°	112.2	69.5	48.8	44.5	43.9
77.5°	88.5	49.4	38.4	36.0	34.7
80°	66.4	35.4	29.3	26.8	26.8
82.5°	46.3	23.8	20.1	18.9	18.9
85°	26.2	13.4	11.6	11.6	11.6
87.5°	9.8	4.9	4.9	4.2	4.2
90°	0.5	5.6	15.2	14.3	14.8
92.5°	9.6	13.0	13.5	14.0	14.0
95°	22.7	27.1	27.8	27.8	27.1
97.5°	37.7	41.8	43.5	43.5	43.5
100°	55.2	58.8	60.0	60.0	59.5
102.5°	73.5	76.1	77.9	78.4	77.9
105°	93.6	94.8	95.8	96.5	96.5
107.5°	113.5	115.4	115.4	115.7	113.5
110°	132.8	135.3	135.3	135.3	134.0

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	153.6	156.2	155.8	154.5	153.6
115°	174.1	176.6	175.9	175.4	174.1
117.5°	194.5	198.0	195.8	194.5	193.2
120°	215.0	218.4	215.0	215.0	213.6
122.5°	233.7	238.0	235.9	234.6	233.7
125°	253.2	257.1	255.9	254.5	254.0
127.5°	272.4	277.2	275.5	273.6	272.4
130°	290.2	295.9	295.1	294.2	292.4
132.5°	310.3	314.7	314.9	312.8	311.5
135°	327.6	332.4	333.3	332.9	331.6
137.5°	346.8	350.7	351.6	351.2	349.4
140°	363.8	367.7	369.9	369.9	368.2
142.5°	381.2	385.1	386.4	386.8	385.1
145°	397.7	400.8	403.3	403.7	402.0
147.5°	412.5	416.4	418.2	419.0	417.3
150°	427.7	430.3	432.0	433.4	432.0
152.5°	441.2	443.8	446.0	447.8	446.0
155°	454.8	456.0	457.4	459.6	458.2
157.5°	466.4	467.3	468.1	471.2	469.0
160°	476.9	477.8	478.3	480.9	479.0
162.5°	486.5	486.5	486.9	489.9	487.7
165°	494.7	494.2	494.2	497.3	495.2
167.5°	502.1	500.8	500.8	503.9	501.7
170°	507.8	506.5	506.1	509.2	506.5
172.5°	511.7	510.4	510.0	513.1	510.4
175°	514.8	513.6	512.6	515.7	513.1
177.5°	516.5	515.3	514.3	516.9	514.3
180°	515.7	515.7	515.7	515.7	515.7

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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	8.74	9.56	9.71	10.54	11.83	4.70	5.52	5.67	6.50	7.79
	3H	10.39	11.13	11.38	12.12	13.43	5.87	6.60	6.85	7.59	8.90
	4H	10.98	11.68	11.98	12.67	13.99	6.30	7.00	7.30	7.99	9.31
	6H	11.39	12.03	12.39	13.03	14.36	6.60	7.24	7.61	8.24	9.57
	8H	11.50	12.11	12.52	13.13	14.45	6.68	7.29	7.70	8.31	9.63
	12H	11.56	12.13	12.57	13.14	14.49	6.72	7.30	7.74	8.31	9.66
4H	2H	8.75	9.45	9.75	10.44	11.76	5.28	5.98	6.29	6.97	8.29
	3H	10.55	11.13	11.56	12.15	13.48	6.61	7.19	7.62	8.21	9.54
	4H	11.23	11.75	12.24	12.77	14.12	7.14	7.67	8.16	8.68	10.04
	6H	11.72	12.17	12.75	13.21	14.56	7.53	7.99	8.56	9.03	10.38
	8H	11.88	12.30	12.91	13.34	14.70	7.65	8.07	8.68	9.10	10.47
	12H	11.96	12.35	13.01	13.39	14.76	7.70	8.08	8.75	9.13	10.50
8H	4H	11.19	11.61	12.22	12.64	14.01	7.40	7.83	8.43	8.86	10.22
	6H	11.73	12.08	12.78	13.15	14.52	7.89	8.24	8.95	9.32	10.68
	8H	11.93	12.24	12.99	13.30	14.68	8.07	8.37	9.13	9.43	10.82
	12H	12.05	12.32	13.12	13.38	14.80	8.17	8.44	9.23	9.49	10.92
12H	4H	11.14	11.52	12.19	12.57	13.94	7.40	7.79	8.45	8.83	10.20
	6H	11.70	12.01	12.76	13.07	14.45	7.94	8.24	9.00	9.30	10.68
	8H	11.91	12.18	12.97	13.23	14.65	8.13	8.40	9.19	9.45	10.88

END OF REPORT