

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: P913090

Luminaire Tested: DFN2DIP-4P3F0-020D030US927-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P913090
REPORT IS A COMBINATION OF REPORTS P899039 AND P895917
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P3F0-020D030US927-FLLFLL
Description: 3 foot, 90deg - 4way Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

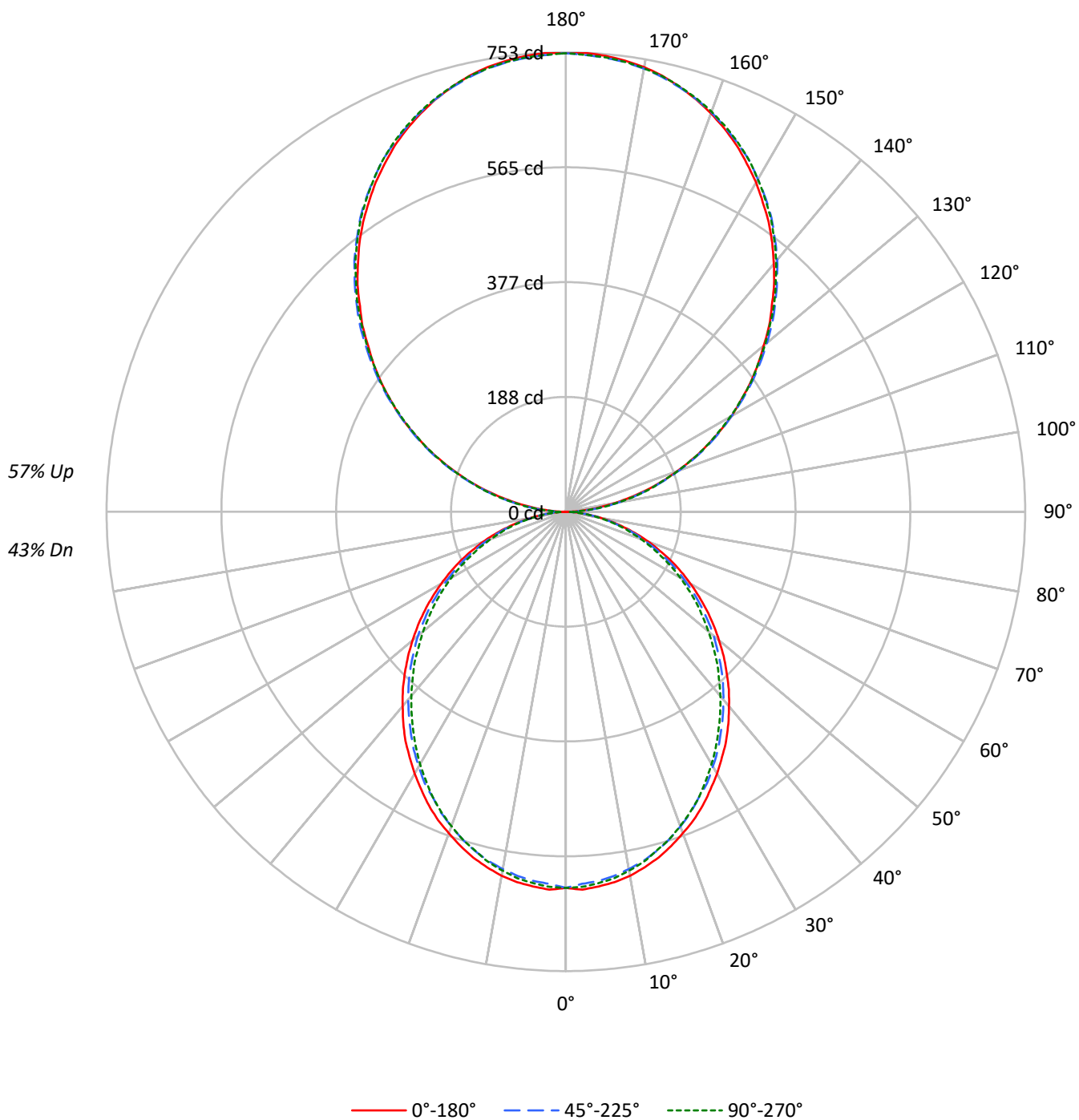
Lumens per Lamp: N/A
Luminaire Lumens: 3671.8 lumens
Efficiency: N/A
Efficacy: 96.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.07' x L: 3.07' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 37.9
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
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10
RCR																	
0	105	105	105	105	96	96	96	96	79	79	79	64	64	64	49	49	49
1	96	92	88	85	88	84	81	78	69	67	65	56	54	53	44	43	42
2	88	80	74	69	80	73	68	64	61	57	54	49	47	44	38	37	35
3	80	70	63	57	73	65	58	53	54	49	45	44	40	37	34	32	30
4	73	62	55	49	66	57	50	45	48	43	39	39	35	32	30	28	26
5	67	56	47	42	61	51	44	39	43	37	33	35	31	28	27	25	22
6	62	50	42	36	56	46	39	34	38	33	29	31	27	24	25	22	20
7	57	45	37	31	52	41	34	29	35	29	25	29	24	21	23	20	18
8	53	41	33	28	48	38	31	26	32	26	23	26	22	19	21	18	16
9	49	37	30	25	45	34	28	23	29	24	20	24	20	17	19	16	14
10	46	34	27	22	42	31	25	21	27	22	18	22	18	15	18	15	13

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	703	703	703
5°	703	692	697
10°	697	683	687
15°	686	671	673
20°	672	655	657
25°	658	636	639
30°	640	618	617
35°	623	597	593
40°	603	576	571
45°	582	554	548
50°	559	532	521
55°	536	506	496
60°	509	476	468
65°	480	444	435
70°	443	405	399
75°	391	358	366
80°	329	299	302
85°	231	198	198

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 753 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	58.0	1.6
10°-20°	163.3	4.4
20°-30°	239.9	6.5
30°-40°	278.7	7.6
40°-50°	278.3	7.6
50°-60°	242.7	6.6
60°-70°	179.4	4.9
70°-80°	101.5	2.8
80°-90°	28.9	0.8
90°-100°	46.5	1.3
100°-110°	147.8	4.0
110°-120°	252.9	6.9
120°-130°	332.6	9.1
130°-140°	373.3	10.2
140°-150°	366.1	10.0
150°-160°	307.1	8.4
160°-170°	203.7	5.5
170°-180°	71.2	1.9
0°-30°	461.2	12.6
0°-40°	739.9	20.1
0°-60°	1260.8	34.3
0°-90°	1570.7	42.8
90°-120°	447.2	12.2
90°-150°	1519.2	41.4
90°-180°	2101.0	57.2
0°-180°	3671.8	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	8	22	21	22	4
95°	33	40	41	41	40	37
105°	136	138	140	141	141	144
115°	254	257	256	256	254	251
125°	369	375	373	371	370	330
135°	477	484	486	485	483	369
145°	580	584	588	588	586	362
155°	663	665	667	670	668	305
165°	721	720	720	725	722	203
175°	750	748	747	752	748	71
180°	752	752	752	752	752	

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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°	0.7	8.2	22.2	20.8	21.5
92.5°	14.0	19.0	19.7	20.4	20.4
95°	33.1	39.5	40.6	40.6	39.5
97.5°	55.1	60.9	63.5	63.5	63.5
100°	80.4	85.6	87.5	87.5	86.8
102.5°	107.2	111.1	113.5	114.2	113.5
105°	136.4	138.2	139.6	140.7	140.7
107.5°	165.4	168.1	168.1	168.6	165.4
110°	193.5	197.2	197.2	197.2	195.4



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	223.9	227.8	227.0	225.2	223.9
115°	253.8	257.4	256.3	255.6	253.8
117.5°	283.4	288.4	285.3	283.4	281.6
120°	313.4	318.4	313.4	313.4	311.3
122.5°	340.6	346.9	343.7	341.9	340.6
125°	369.2	374.8	373.0	370.9	370.3
127.5°	397.0	404.0	401.6	398.8	397.0
130°	423.0	431.2	430.1	428.7	426.2
132.5°	452.3	458.6	459.1	455.9	454.1
135°	477.4	484.4	485.8	485.1	483.3
137.5°	505.5	511.2	512.3	511.9	509.1
140°	530.2	535.9	539.1	539.1	536.5
142.5°	555.6	561.3	563.1	563.8	561.3
145°	579.6	584.2	587.8	588.4	586.0
147.5°	601.2	606.8	609.5	610.7	608.2
150°	623.4	627.2	629.7	631.8	629.7
152.5°	643.1	646.9	650.1	652.6	650.1
155°	662.8	664.6	666.6	669.8	667.8
157.5°	679.8	681.1	682.3	686.8	683.7
160°	695.0	696.3	697.0	700.8	698.1
162.5°	709.0	709.0	709.7	714.0	710.8
165°	721.0	720.3	720.3	724.8	721.7
167.5°	731.9	729.8	729.8	734.4	731.2
170°	740.1	738.2	737.6	742.1	738.2
172.5°	745.7	743.9	743.2	747.7	743.9
175°	750.3	748.5	747.1	751.6	747.7
177.5°	752.7	750.9	749.6	753.4	749.6
180°	751.6	751.6	751.6	751.6	751.6

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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	5.30	6.10	6.32	7.13	8.50	4.86	5.66	5.88	6.68	8.06
	3H	6.95	7.67	7.98	8.71	10.10	6.47	7.18	7.49	8.22	9.61
	4H	7.54	8.22	8.58	9.25	10.65	7.04	7.72	8.08	8.76	10.16
	6H	7.93	8.56	8.98	9.60	11.01	7.43	8.06	8.48	9.10	10.51
	8H	8.03	8.63	9.09	9.69	11.09	7.53	8.13	8.58	9.18	10.59
	12H	8.08	8.64	9.14	9.69	11.12	7.57	8.13	8.63	9.18	10.61
4H	2H	5.75	6.43	6.80	7.47	8.87	5.40	6.08	6.44	7.12	8.51
	3H	7.61	8.18	8.66	9.24	10.65	7.20	7.77	8.25	8.83	10.24
	4H	8.32	8.84	9.38	9.89	11.33	7.89	8.41	8.95	9.47	10.90
	6H	8.82	9.27	9.89	10.35	11.78	8.39	8.84	9.46	9.92	11.35
	8H	8.97	9.39	10.04	10.46	11.90	8.53	8.95	9.60	10.02	11.47
	12H	9.04	9.42	10.13	10.50	11.95	8.59	8.97	9.68	10.05	11.50
8H	4H	8.50	8.92	9.57	9.99	11.44	8.13	8.54	9.20	9.62	11.06
	6H	9.13	9.47	10.22	10.59	12.03	8.74	9.09	9.84	10.20	11.64
	8H	9.34	9.65	10.44	10.74	12.20	8.95	9.25	10.05	10.35	11.81
	12H	9.47	9.74	10.57	10.83	12.33	9.06	9.33	10.16	10.42	11.92
12H	4H	8.49	8.86	9.57	9.95	11.40	8.12	8.50	9.21	9.58	11.03
	6H	9.16	9.46	10.26	10.56	12.02	8.78	9.08	9.88	10.18	11.64
	8H	9.39	9.66	10.49	10.75	12.25	9.01	9.28	10.11	10.37	11.87