

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: P915790

Luminaire Tested: DFN2DIP-4P2F0-030D020US930-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P915790
REPORT IS A COMBINATION OF REPORTS P899013 AND P895899
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P2F0-030D020US930-FLLFLL
Description: 2 foot, 90deg - 4way Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

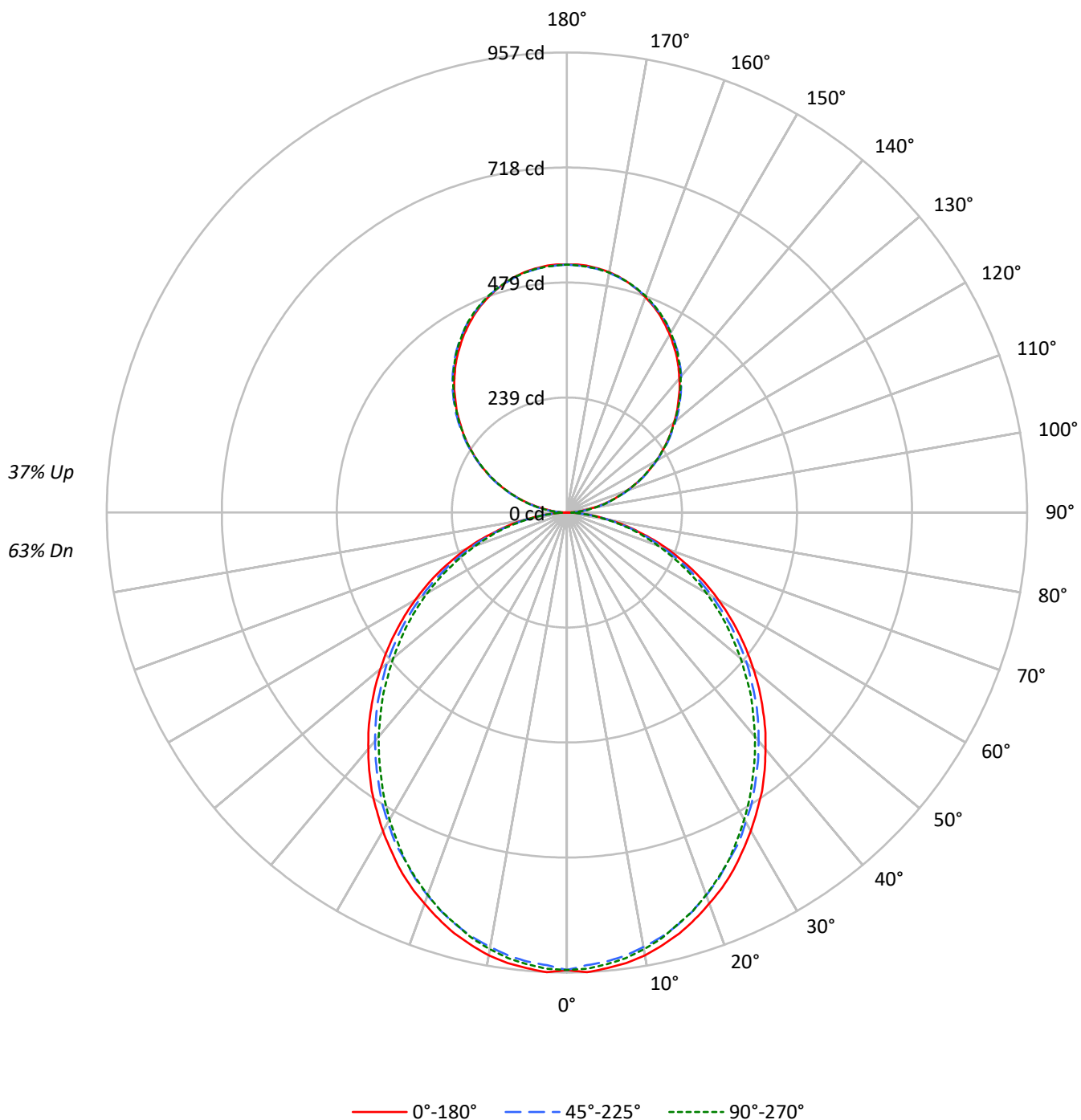
Lumens per Lamp: N/A
Luminaire Lumens: 3864.5 lumens
Efficiency: N/A
Efficacy: 89.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.07' x L: 2.07' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 43.3
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9954
Total Harmonic Distortion (THDi): 0.076
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	110	110	110	110	103	103	103	103	90	90	90	79	79	79	68	68	68
1	101	96	92	89	94	90	87	84	79	77	74	69	67	66	60	59	57
2	92	84	78	72	86	79	73	69	70	65	62	61	58	55	53	50	48
3	84	74	66	60	78	70	63	58	61	56	52	54	50	46	47	44	41
4	77	66	57	51	71	62	54	49	55	49	44	48	43	40	42	38	35
5	70	58	50	44	66	55	48	42	49	43	38	43	38	35	38	34	31
6	65	53	44	38	61	50	42	37	44	38	33	39	34	30	34	30	27
7	60	48	39	34	56	45	38	32	40	34	30	36	31	27	31	27	24
8	56	43	35	30	52	41	34	29	37	31	26	33	28	24	29	25	22
9	52	40	32	27	49	38	30	26	34	28	24	30	25	22	27	23	20
10	49	36	29	24	46	35	28	23	31	25	21	28	23	20	25	21	18

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2383	2383	2383
5°	2382	2344	2362
10°	2358	2306	2326
15°	2319	2262	2272
20°	2267	2203	2217
25°	2215	2134	2154
30°	2152	2070	2075
35°	2092	1994	1991
40°	2018	1918	1912
45°	1945	1842	1830
50°	1864	1761	1736
55°	1780	1667	1649
60°	1683	1558	1548
65°	1578	1443	1430
70°	1444	1303	1302
75°	1260	1136	1178
80°	1037	922	953
85°	695	576	593

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 1945 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	89.6	2.3
10°-20°	252.0	6.5
20°-30°	370.4	9.6
30°-40°	430.2	11.1
40°-50°	429.7	11.1
50°-60°	374.6	9.7
60°-70°	277.0	7.2
70°-80°	156.7	4.1
80°-90°	42.8	1.1
90°-100°	31.9	0.8
100°-110°	101.4	2.6
110°-120°	173.5	4.5
120°-130°	228.2	5.9
130°-140°	256.1	6.6
140°-150°	251.2	6.5
150°-160°	210.7	5.5
160°-170°	139.7	3.6
170°-180°	48.8	1.3
0°-30°	712.0	18.4
0°-40°	1142.2	29.6
0°-60°	1946.5	50.4
0°-90°	2422.9	62.7
90°-120°	306.8	7.9
90°-150°	1042.3	27.0
90°-180°	1442.0	37.3
0°-180°	3864.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	952	952	952	952	952	
5°	952	948	938	945	944	90
15°	906	901	889	892	888	255
25°	820	813	797	799	797	377
35°	707	698	684	678	674	442
45°	576	569	556	545	542	444
55°	436	430	419	408	404	390
65°	294	288	279	271	266	290
75°	154	152	147	142	144	164
85°	38	37	36	33	32	42
90°	0	6	15	14	15	4
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°	951.7	951.7	951.7	951.7	951.7
2.5°	957.2	952.7	942.6	951.7	950.0
5°	951.7	948.1	938.0	945.3	943.5
7.5°	945.3	939.9	929.8	937.2	935.3
10°	935.3	928.9	917.9	925.2	922.5
12.5°	921.5	916.1	905.1	909.6	907.8
15°	906.0	900.6	888.6	892.3	887.7
17.5°	886.7	881.3	869.4	873.9	869.4
20°	865.7	860.2	847.4	850.1	846.5
22.5°	844.7	836.5	824.5	824.5	822.6
25°	819.9	812.7	797.1	798.9	797.1
27.5°	792.5	786.0	774.2	771.5	767.0
30°	765.1	757.7	744.0	741.3	737.6
32.5°	735.8	730.3	715.7	710.1	706.5
35°	707.4	698.3	683.6	678.1	673.5
37.5°	675.4	667.2	652.5	646.0	641.5
40°	642.5	635.1	620.4	612.3	608.6
42.5°	610.4	603.1	588.5	579.3	573.8
45°	575.7	569.2	555.5	545.4	541.8
47.5°	541.8	535.4	520.7	510.6	505.2
50°	506.1	501.5	488.7	475.9	471.3
52.5°	471.3	464.9	453.1	443.0	436.5
55°	435.7	430.2	419.1	408.2	403.7
57.5°	399.9	395.3	383.4	372.4	368.8
60°	364.2	360.6	347.8	337.7	335.0
62.5°	329.5	323.0	313.9	304.8	301.1
65°	293.8	288.3	279.2	270.9	266.4
67.5°	257.2	252.6	244.3	238.0	234.3
70°	223.3	219.6	211.4	205.0	201.4
72.5°	188.6	184.8	180.3	173.9	171.2
75°	153.7	152.0	147.3	141.9	143.7
77.5°	122.6	119.0	117.1	114.4	111.7
80°	91.6	90.6	88.7	86.0	84.2
82.5°	62.2	62.2	61.4	57.6	57.6
85°	37.5	36.6	35.7	32.9	32.0
87.5°	16.5	14.7	12.8	10.1	9.1
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	11.25	12.24	12.09	13.10	14.18	10.80	11.79	11.64	12.65	13.73
	3H	12.90	13.78	13.75	14.65	15.76	12.41	13.29	13.26	14.17	15.27
	4H	13.47	14.31	14.34	15.19	16.31	12.98	13.82	13.85	14.70	15.81
	6H	13.86	14.64	14.74	15.52	16.65	13.36	14.14	14.24	15.02	16.15
	8H	13.96	14.70	14.85	15.60	16.73	13.46	14.20	14.35	15.10	16.23
	12H	14.01	14.71	14.90	15.61	16.76	13.50	14.20	14.39	15.10	16.25
4H	2H	11.71	12.55	12.59	13.43	14.54	11.36	12.20	12.23	13.07	14.19
	3H	13.56	14.26	14.45	15.17	16.30	13.16	13.86	14.04	14.77	15.90
	4H	14.26	14.90	15.16	15.81	16.97	13.84	14.48	14.74	15.39	16.54
	6H	14.77	15.32	15.68	16.25	17.41	14.33	14.89	15.24	15.82	16.97
	8H	14.91	15.42	15.82	16.35	17.52	14.47	14.99	15.38	15.91	17.08
	12H	14.98	15.44	15.91	16.38	17.56	14.53	14.99	15.46	15.94	17.11
8H	4H	14.46	14.97	15.37	15.90	17.07	14.08	14.60	14.99	15.52	16.69
	6H	15.07	15.49	16.01	16.46	17.63	14.68	15.11	15.62	16.08	17.25
	8H	15.27	15.65	16.22	16.61	17.80	14.88	15.26	15.83	16.22	17.40
	12H	15.40	15.73	16.35	16.68	17.92	14.99	15.32	15.94	16.27	17.51
12H	4H	14.45	14.91	15.38	15.85	17.03	14.08	14.54	15.01	15.49	16.66
	6H	15.09	15.47	16.04	16.43	17.62	14.72	15.10	15.67	16.05	17.24
	8H	15.32	15.66	16.28	16.61	17.84	14.94	15.27	15.89	16.22	17.46

END OF REPORT