

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: P924693

Luminaire Tested: DFN2DIP-PN2F0-030D020US950-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P924693
REPORT IS A COMBINATION OF REPORTS P900983 AND P897905
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN2F0-030D020US950-FLLONL
Description: 2 foot, Pentagon Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

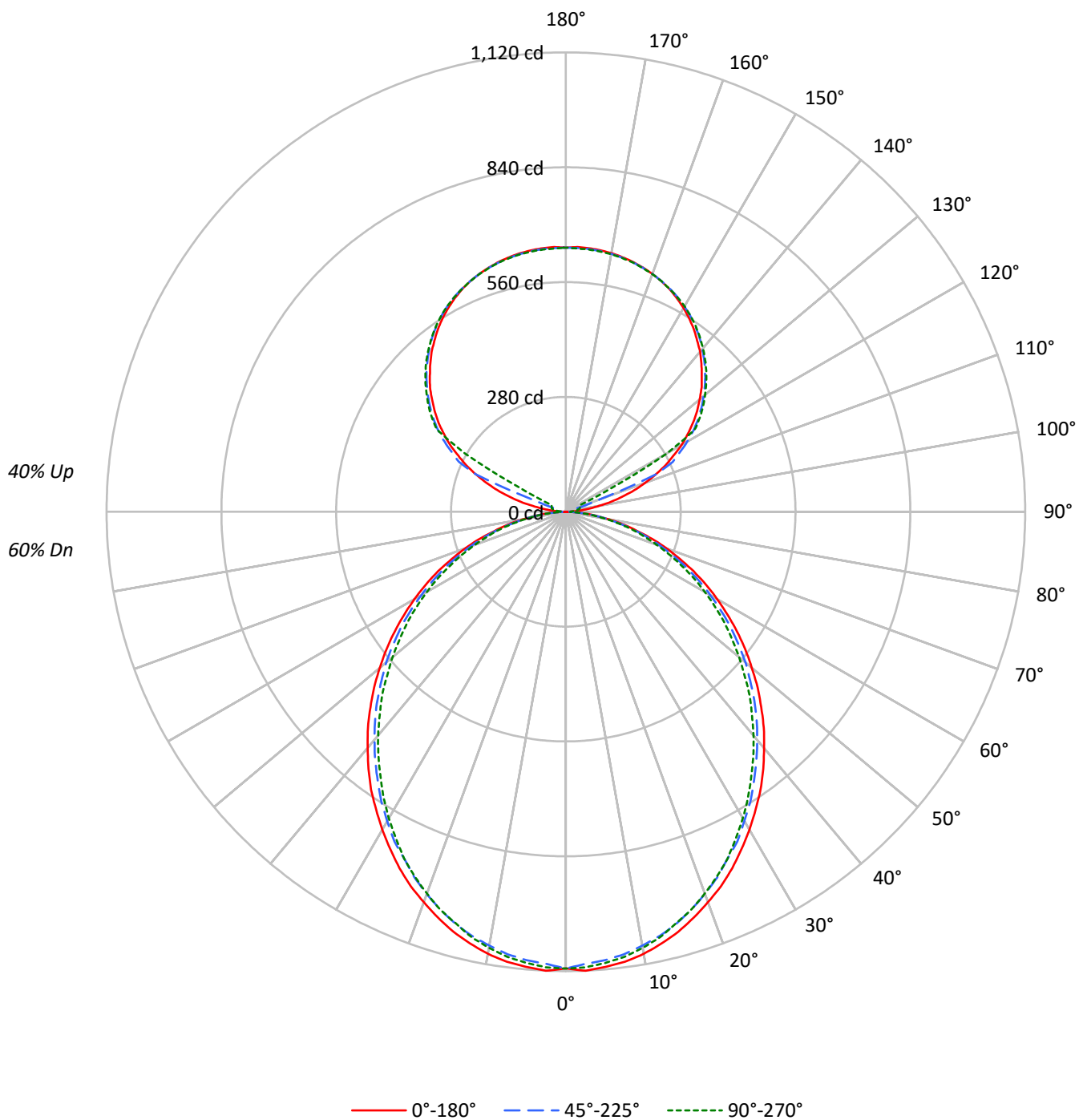
Lumens per Lamp: N/A
Luminaire Lumens: 4722.3 lumens
Efficiency: N/A
Efficacy: 107.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.17' x L: 2.29' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 43.8
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9972
Total Harmonic Distortion (THDi): 0.128
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		102	102	102	102		89	89	89		77	77	77		65	65	65
1	100	96	92	88		93	90	86	83		78	75	73		67	66	64		58	56	55
2	91	84	77	72		85	78	73	68		68	64	61		59	56	53		51	49	47
3	83	73	66	60		77	69	62	57		60	55	51		52	48	45		45	42	40
4	76	65	57	51		71	61	54	48		54	48	44		47	42	39		40	37	34
5	70	58	50	44		65	55	47	42		48	42	38		42	37	34		36	33	30
6	64	52	44	38		60	49	42	36		43	37	33		38	33	30		33	29	26
7	60	47	39	33		56	44	37	32		39	33	29		35	30	26		30	26	23
8	55	43	35	30		52	40	33	28		36	30	26		32	27	23		28	24	21
9	52	39	32	26		48	37	30	25		33	27	23		29	24	21		26	22	19
10	48	36	29	24		45	34	27	23		30	25	21		27	22	19		24	20	17

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2412	2412	2412
5°	2412	2373	2391
10°	2388	2336	2355
15°	2349	2293	2301
20°	2298	2234	2245
25°	2247	2165	2182
30°	2184	2100	2103
35°	2124	2025	2019
40°	2050	1949	1939
45°	1977	1872	1856
50°	1896	1791	1762
55°	1812	1698	1674
60°	1716	1588	1573
65°	1611	1473	1454
70°	1477	1334	1325
75°	1293	1166	1201
80°	1070	952	974
85°	727	602	611

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1977 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	104.8	2.2
10°-20°	294.9	6.2
20°-30°	433.4	9.2
30°-40°	503.4	10.7
40°-50°	502.7	10.6
50°-60°	438.4	9.3
60°-70°	324.1	6.9
70°-80°	183.3	3.9
80°-90°	49.5	1.0
90°-100°	21.2	0.4
100°-110°	79.1	1.7
110°-120°	209.9	4.4
120°-130°	348.2	7.4
130°-140°	369.8	7.8
140°-150°	343.7	7.3
150°-160°	276.4	5.9
160°-170°	178.1	3.8
170°-180°	61.3	1.3
0°-30°	833.1	17.6
0°-40°	1336.5	28.3
0°-60°	2277.6	48.2
0°-90°	2834.5	60.0
90°-120°	310.3	6.6
90°-150°	1372.0	29.1
90°-180°	1888.0	40.0
0°-180°	4722.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1114	1114	1114	1114	1114	
5°	1114	1109	1098	1106	1104	106
15°	1060	1054	1040	1044	1039	299
25°	959	951	933	935	933	441
35°	828	817	800	793	788	517
45°	674	666	650	638	634	520
55°	510	503	490	478	472	456
65°	344	337	327	317	312	340
75°	180	178	172	166	168	192
85°	44	43	42	38	38	49
90°	0	6	9	12	13	4
95°	30	15	18	20	20	36
105°	142	156	28	34	35	151
115°	268	276	288	72	38	264
125°	379	385	394	397	398	338
135°	469	476	480	485	484	362
145°	544	543	551	554	552	340
155°	599	594	600	603	599	276
165°	631	628	629	633	629	178
175°	645	642	643	646	642	61
180°	644	644	644	644	644	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1113.6	1113.6	1113.6	1113.6	1113.6
2.5°	1120.1	1114.7	1102.9	1113.6	1111.6
5°	1113.6	1109.4	1097.6	1106.2	1104.1
7.5°	1106.2	1099.8	1087.9	1096.6	1094.4
10°	1094.4	1086.9	1074.1	1082.6	1079.5
12.5°	1078.3	1071.9	1059.1	1064.4	1062.3
15°	1060.1	1053.8	1039.8	1044.1	1038.7
17.5°	1037.6	1031.3	1017.3	1022.6	1017.3
20°	1013.0	1006.6	991.6	994.7	990.5
22.5°	988.4	978.8	964.8	964.8	962.6
25°	959.4	950.9	932.7	934.8	932.7
27.5°	927.3	919.8	905.9	902.8	897.4
30°	895.2	886.6	870.6	867.4	863.1
32.5°	861.0	854.6	837.4	830.9	826.6
35°	827.8	817.1	799.9	793.4	788.1
37.5°	790.3	780.7	763.5	755.9	750.6
40°	751.8	743.2	726.0	716.5	712.2
42.5°	714.3	705.7	688.6	677.8	671.4
45°	673.6	666.1	650.0	638.2	633.9
47.5°	633.9	626.5	609.3	597.5	591.1
50°	592.1	586.8	571.8	556.8	551.5
52.5°	551.5	544.0	530.1	518.3	510.8
55°	509.8	503.3	490.5	477.7	472.3
57.5°	467.9	462.6	448.7	435.8	431.5
60°	426.2	422.0	407.0	395.1	392.0
62.5°	385.5	378.0	367.3	356.6	352.3
65°	343.8	337.3	326.6	317.0	311.7
67.5°	301.0	295.5	285.9	278.5	274.2
70°	261.3	257.0	247.4	239.8	235.6
72.5°	220.7	216.3	210.9	203.5	200.3
75°	179.8	177.8	172.4	166.0	168.2
77.5°	143.5	139.2	137.0	133.8	130.7
80°	107.1	106.0	103.8	100.6	98.5
82.5°	72.8	72.8	71.8	67.4	67.4
85°	43.9	42.8	41.8	38.5	37.5
87.5°	19.3	17.2	15.0	11.8	10.7
90°	0.5	5.6	9.3	11.6	12.6
92.5°	11.6	9.8	11.2	12.1	12.6
95°	30.2	14.9	18.1	20.5	20.0
97.5°	54.5	16.3	23.8	25.2	25.7
100°	82.5	18.6	26.5	30.2	31.2
102.5°	113.2	112.3	27.5	32.6	34.1
105°	141.7	155.6	28.4	33.5	35.4
107.5°	174.8	186.3	29.4	34.4	36.3
110°	206.4	216.2	81.6	35.0	36.8

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	236.2	244.6	236.7	35.9	37.3
115°	267.9	275.8	287.5	71.7	38.3
117.5°	295.4	304.7	312.6	246.0	123.9
120°	326.2	333.1	341.5	347.2	284.2
122.5°	352.2	359.7	369.0	371.8	372.3
125°	378.8	384.8	393.7	397.0	398.4
127.5°	403.1	409.6	416.6	421.2	421.7
130°	425.9	433.3	438.5	443.6	443.1
132.5°	449.1	455.2	460.3	464.5	464.1
135°	468.8	476.2	480.3	485.1	484.2
137.5°	489.2	494.8	499.5	504.2	502.8
140°	509.2	513.1	518.1	522.3	520.0
142.5°	526.0	529.4	535.4	539.1	536.7
145°	543.8	543.3	551.2	554.5	552.2
147.5°	559.1	557.7	565.6	567.9	566.1
150°	574.0	570.8	578.2	581.0	578.7
152.5°	586.6	582.9	589.9	592.7	589.4
155°	598.7	594.5	600.2	602.9	599.2
157.5°	608.6	604.8	609.0	612.3	608.6
160°	617.0	614.1	617.0	619.7	616.5
162.5°	624.3	621.5	623.9	627.2	623.0
165°	630.9	628.1	629.4	632.8	629.4
167.5°	636.0	633.2	634.6	637.9	633.6
170°	640.2	637.4	638.3	641.6	637.4
172.5°	643.0	640.2	641.2	644.4	640.2
175°	645.3	642.0	643.0	646.2	641.6
177.5°	646.2	643.0	643.5	646.7	642.5
180°	643.9	643.9	643.9	643.9	643.9

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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	11.09	12.05	11.96	12.94	14.06	10.65	11.61	11.52	12.50	13.62
	3H	12.74	13.60	13.62	14.50	15.64	12.26	13.12	13.14	14.02	15.16
	4H	13.32	14.13	14.21	15.03	16.19	12.84	13.65	13.73	14.55	15.71
	6H	13.71	14.46	14.61	15.37	16.54	13.22	13.97	14.13	14.88	16.05
	8H	13.81	14.52	14.72	15.45	16.62	13.32	14.03	14.23	14.96	16.13
	12H	13.85	14.53	14.77	15.45	16.65	13.36	14.04	14.28	14.96	16.15
4H	2H	11.55	12.37	12.45	13.27	14.43	11.20	12.02	12.10	12.92	14.08
	3H	13.40	14.08	14.31	15.02	16.19	13.01	13.68	13.92	14.62	15.79
	4H	14.11	14.73	15.03	15.66	16.85	13.69	14.31	14.61	15.24	16.44
	6H	14.61	15.14	15.54	16.10	17.29	14.19	14.72	15.12	15.68	16.88
	8H	14.75	15.25	15.69	16.20	17.41	14.33	14.83	15.26	15.77	16.99
	12H	14.82	15.27	15.78	16.24	17.45	14.38	14.84	15.34	15.80	17.02
8H	4H	14.30	14.80	15.24	15.75	16.96	13.93	14.43	14.87	15.38	16.59
	6H	14.91	15.33	15.88	16.31	17.52	14.54	14.95	15.50	15.94	17.15
	8H	15.12	15.49	16.09	16.46	17.69	14.74	15.10	15.71	16.08	17.31
	12H	15.24	15.56	16.22	16.54	17.81	14.85	15.17	15.82	16.14	17.42
12H	4H	14.29	14.74	15.25	15.70	16.92	13.93	14.38	14.88	15.34	16.56
	6H	14.94	15.30	15.91	16.28	17.51	14.57	14.94	15.55	15.92	17.15
	8H	15.17	15.49	16.14	16.46	17.74	14.80	15.12	15.78	16.09	17.37