

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: P917074

Luminaire Tested: DFN2DIP-PN4F0-120D040US930-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P917074
REPORT IS A COMBINATION OF REPORTS P899626 AND P896497
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN4F0-120D040US930-RLLFLL
Description: 4 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

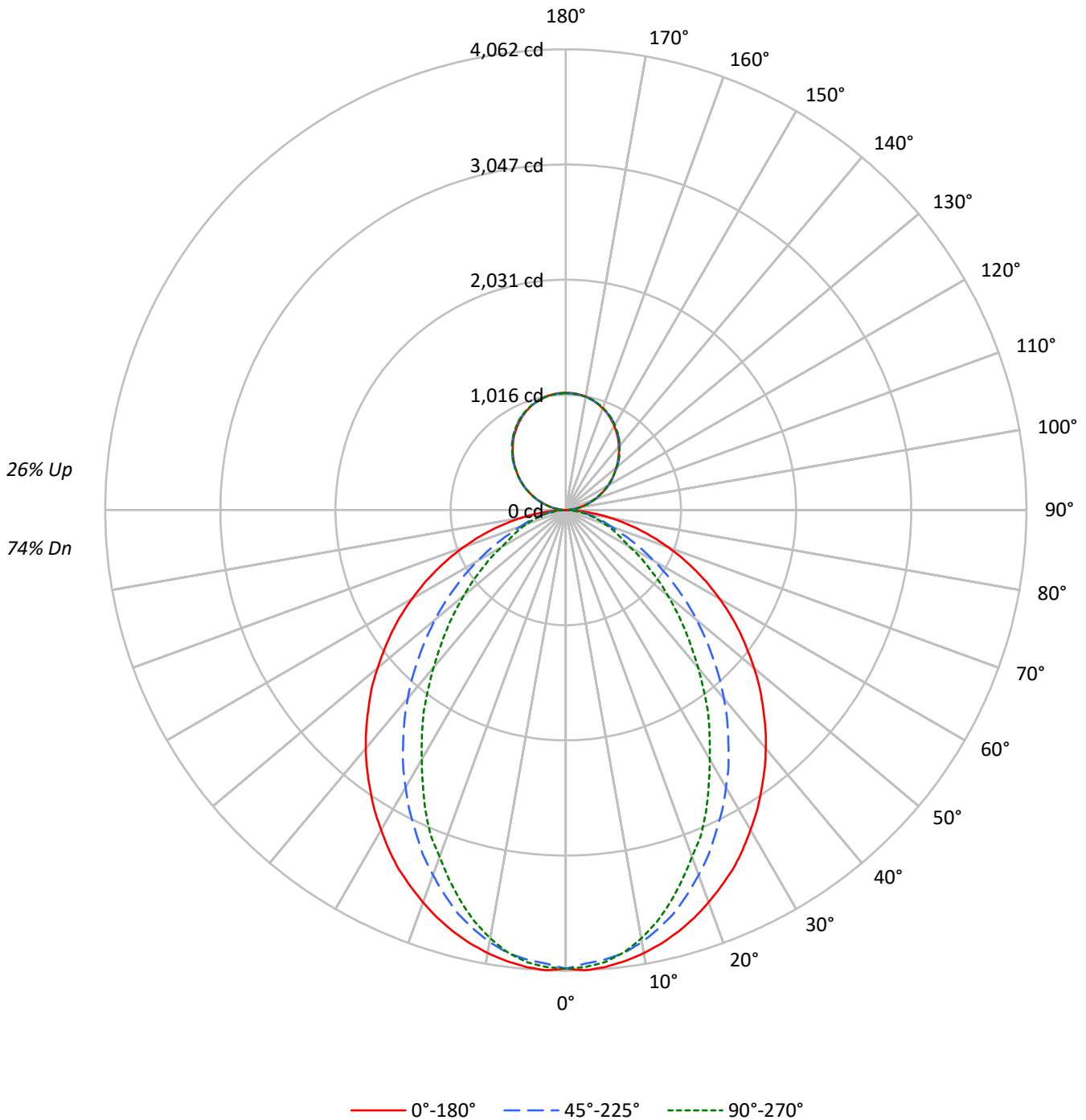
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 11202.2 lumens
Efficiency: N/A
Efficacy: 71.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.74' x L: 3.94' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 156.6
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9781
Total Harmonic Distortion (THDi): 0.075
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				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	113	113	113	113	107	107	107	107	97	97	97	87	87	87	78	78	78	74			
1	104	100	96	93	99	95	92	89	86	84	81	78	76	74	70	69	68	64			
2	95	88	82	77	90	84	79	74	76	72	68	69	66	63	63	60	58	55			
3	87	78	71	65	83	75	68	63	68	63	58	62	58	54	56	53	50	47			
4	80	70	62	56	76	67	60	54	61	55	51	56	51	47	51	47	44	41			
5	74	63	54	48	70	60	53	47	55	49	44	51	45	42	46	42	39	36			
6	69	57	48	43	65	54	47	41	50	44	39	46	41	37	42	38	35	32			
7	64	51	43	38	61	49	42	37	46	39	35	42	37	33	39	34	31	29			
8	59	47	39	34	57	45	38	33	42	36	31	39	34	30	36	31	28	26			
9	56	43	36	31	53	42	35	30	39	33	28	36	31	27	33	29	26	24			
10	52	40	33	28	50	39	32	27	36	30	26	33	28	25	31	27	23	22			

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2952	2952	2952
5°	2956	2905	2924
10°	2927	2849	2829
15°	2887	2755	2683
20°	2833	2625	2503
25°	2779	2480	2329
30°	2706	2331	2108
35°	2634	2171	1914
40°	2561	2006	1692
45°	2476	1822	1490
50°	2388	1636	1293
55°	2296	1438	1104
60°	2190	1230	909
65°	2068	1019	819
70°	1920	823	742
75°	1734	726	676
80°	1465	610	588
85°	1021	410	446

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 2476 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	379.0	3.4
10°-20°	1040.3	9.3
20°-30°	1460.6	13.0
30°-40°	1592.1	14.2
40°-50°	1463.4	13.1
50°-60°	1149.2	10.3
60°-70°	748.0	6.7
70°-80°	385.1	3.4
80°-90°	101.2	0.9
90°-100°	63.8	0.6
100°-110°	202.8	1.8
110°-120°	347.0	3.1
120°-130°	456.4	4.1
130°-140°	512.3	4.6
140°-150°	502.4	4.5
150°-160°	421.4	3.8
160°-170°	279.5	2.5
170°-180°	97.7	0.9
0°-30°	2879.9	25.7
0°-40°	4472.0	39.9
0°-60°	7084.6	63.2
0°-90°	8319.0	74.3
90°-120°	613.6	5.5
90°-150°	2084.7	18.6
90°-180°	2883.0	25.7
0°-180°	11202.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4044	4044	4044	4044	4044	
5°	4044	4025	3978	4010	4000	383
15°	3846	3806	3681	3612	3575	1084
25°	3491	3374	3132	2982	2927	1606
35°	3008	2821	2500	2269	2188	1883
45°	2459	2214	1830	1570	1482	1899
55°	1870	1584	1189	970	900	1671
65°	1263	966	637	512	501	1252
75°	673	417	293	267	264	712
85°	157	80	70	70	70	181
90°	1	11	30	29	30	11
95°	45	54	56	56	54	51
105°	187	190	192	193	193	198
115°	348	353	352	351	348	344
125°	506	514	512	509	508	453
135°	655	665	667	666	663	506
145°	795	802	807	808	804	497
155°	910	912	915	919	916	419
165°	989	988	988	995	990	279
175°	1030	1027	1025	1031	1026	98
180°	1031	1031	1031	1031	1031	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	4043.6	4043.6	4043.6	4043.6	4043.6
2.5°	4061.8	4043.6	4003.2	4040.0	4032.6
5°	4043.6	4025.3	3977.5	4010.5	3999.7
7.5°	4010.5	3988.8	3937.6	3951.9	3933.7
10°	3966.7	3941.1	3868.0	3856.8	3835.1
12.5°	3911.9	3878.9	3779.9	3758.2	3717.8
15°	3845.9	3805.6	3681.3	3611.8	3575.3
17.5°	3769.0	3710.4	3556.7	3476.4	3417.7
20°	3681.3	3607.9	3425.1	3333.8	3253.0
22.5°	3586.2	3502.0	3289.6	3165.3	3110.6
25°	3491.1	3373.8	3132.3	2982.4	2927.3
27.5°	3377.7	3253.0	2985.9	2814.0	2729.7
30°	3257.0	3117.6	2824.8	2638.5	2539.5
32.5°	3139.7	2971.2	2671.5	2451.8	2360.1
35°	3008.1	2821.3	2499.5	2268.9	2188.1
37.5°	2880.0	2678.5	2338.4	2085.6	1994.4
40°	2744.5	2525.1	2169.9	1910.2	1815.0
42.5°	2605.4	2371.4	2001.8	1730.8	1639.6
45°	2459.1	2213.8	1829.8	1569.7	1481.9
47.5°	2320.1	2060.4	1665.2	1405.1	1324.7
50°	2166.4	1906.7	1504.1	1251.3	1174.8
52.5°	2016.2	1741.6	1350.3	1108.8	1039.3
55°	1869.8	1584.5	1189.2	969.8	900.3
57.5°	1719.9	1427.2	1046.7	841.7	783.1
60°	1566.2	1273.4	896.4	710.1	651.5
62.5°	1416.3	1123.6	768.3	592.9	563.7
65°	1262.6	966.0	636.7	512.5	501.2
67.5°	1116.2	819.5	512.5	450.0	439.1
70°	962.5	677.1	424.4	387.8	373.1
72.5°	816.1	545.1	354.8	325.7	318.4
75°	673.2	416.9	292.8	267.1	263.6
77.5°	530.8	296.2	230.6	215.9	208.5
80°	398.8	212.4	175.5	161.1	161.1
82.5°	278.0	142.8	120.7	113.3	113.3
85°	157.3	80.4	69.5	69.5	69.5
87.5°	58.6	29.1	29.1	25.6	25.6
90°	0.9	11.2	30.5	28.6	29.5
92.5°	19.2	26.1	27.1	28.0	28.0
95°	45.4	54.1	55.7	55.7	54.1
97.5°	75.6	83.6	87.1	87.1	87.1
100°	110.4	117.6	120.0	120.0	119.1
102.5°	147.1	152.4	155.8	156.7	155.8
105°	187.2	189.6	191.5	193.1	193.1
107.5°	227.0	230.7	230.7	231.3	227.0
110°	265.5	270.5	270.5	270.5	268.1



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	307.2	312.5	311.5	309.1	307.2
115°	348.2	353.3	351.6	350.7	348.2
117.5°	389.0	395.8	391.5	389.0	386.5
120°	430.1	436.8	430.1	430.1	427.2
122.5°	467.3	476.1	471.7	469.2	467.3
125°	506.5	514.3	511.8	509.0	508.1
127.5°	544.8	554.4	551.0	547.2	544.8
130°	580.5	591.7	590.2	588.3	584.9
132.5°	620.6	629.3	630.0	625.6	623.1
135°	655.2	664.8	666.7	665.7	663.2
137.5°	693.7	701.5	703.0	702.4	698.7
140°	727.6	735.4	739.7	739.7	736.3
142.5°	762.5	770.2	772.7	773.6	770.2
145°	795.4	801.6	806.6	807.6	804.1
147.5°	824.9	832.7	836.4	838.0	834.5
150°	855.4	860.7	864.1	866.9	864.1
152.5°	882.5	887.7	892.1	895.5	892.1
155°	909.5	912.0	914.8	919.2	916.3
157.5°	932.9	934.7	936.2	942.5	938.1
160°	953.7	955.5	956.4	961.7	958.0
162.5°	972.9	972.9	973.9	979.7	975.4
165°	989.4	988.5	988.5	994.7	990.3
167.5°	1004.4	1001.5	1001.5	1007.8	1003.4
170°	1015.5	1013.0	1012.1	1018.3	1013.0
172.5°	1023.3	1020.8	1019.9	1026.1	1020.8
175°	1029.6	1027.0	1025.2	1031.4	1026.1
177.5°	1033.0	1030.5	1028.6	1033.9	1028.6
180°	1031.4	1031.4	1031.4	1031.4	1031.4



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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	12.93	14.01	13.66	14.75	15.63	8.90	9.98	9.62	10.72	11.59
	3H	14.63	15.60	15.37	16.35	17.26	10.11	11.07	10.84	11.82	12.73
	4H	15.26	16.16	16.01	16.92	17.85	10.57	11.48	11.33	12.24	13.16
	6H	15.69	16.53	16.46	17.30	18.23	10.90	11.74	11.67	12.51	13.45
	8H	15.83	16.62	16.61	17.41	18.35	11.00	11.80	11.78	12.58	13.52
	12H	15.90	16.66	16.68	17.44	18.40	11.05	11.81	11.84	12.59	13.56
4H	2H	12.98	13.89	13.74	14.65	15.57	9.53	10.43	10.29	11.19	12.12
	3H	14.84	15.59	15.61	16.39	17.33	10.90	11.65	11.67	12.45	13.39
	4H	15.54	16.22	16.33	17.02	17.99	11.46	12.14	12.24	12.94	13.91
	6H	16.07	16.66	16.88	17.48	18.46	11.89	12.48	12.70	13.30	14.28
	8H	16.25	16.81	17.06	17.62	18.61	12.02	12.58	12.83	13.39	14.38
	12H	16.36	16.86	17.19	17.69	18.69	12.10	12.60	12.93	13.43	14.43
8H	4H	15.53	16.08	16.33	16.89	17.88	11.76	12.31	12.57	13.12	14.11
	6H	16.10	16.56	16.94	17.42	18.41	12.29	12.74	13.12	13.60	14.59
	8H	16.32	16.73	17.17	17.58	18.59	12.48	12.88	13.33	13.74	14.74
	12H	16.48	16.83	17.33	17.68	18.74	12.61	12.97	13.46	13.81	14.87
12H	4H	15.49	15.98	16.32	16.82	17.81	11.77	12.27	12.60	13.11	14.10
	6H	16.08	16.49	16.93	17.34	18.35	12.34	12.74	13.18	13.60	14.60
	8H	16.31	16.67	17.16	17.52	18.58	12.56	12.92	13.41	13.76	14.82