

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: P916763

Luminaire Tested: DFN2DIP-PN3F0-090D040US930-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P916763
REPORT IS A COMBINATION OF REPORTS P901058 AND P897955
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN3F0-090D040US930-RLLONL
Description: 3 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

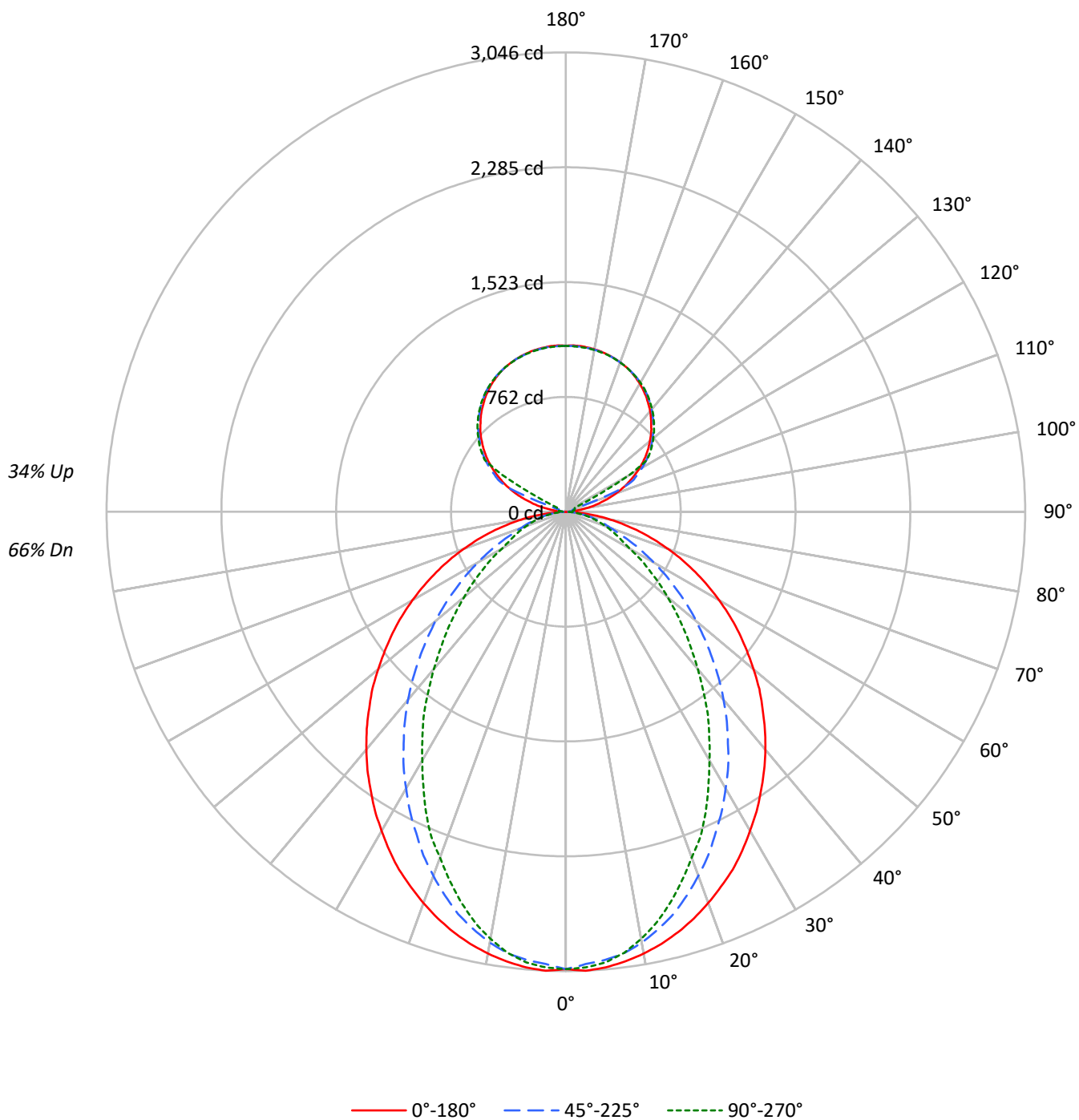
Lumens per Lamp: N/A
Luminaire Lumens: 9465.6 lumens
Efficiency: N/A
Efficacy: 77.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.96' x L: 3.11' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 123
Input Voltage (V):
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

TEST NUMBER: P916763

CATALOG NUMBER: DFN2DIP-PN3F0-090D040US930-RLLONL

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	111	111	111	111	104	104	104	104	92	92	92	81	81	81	71	71	71
1	102	98	94	91	96	92	89	86	82	79	77	72	71	69	64	62	61
2	93	86	80	75	88	81	76	72	73	68	65	64	61	59	57	54	52
3	86	76	69	63	80	72	66	61	65	60	55	57	54	50	51	48	45
4	79	68	60	54	74	65	58	52	58	52	48	52	47	44	46	42	40
5	73	61	53	47	68	58	51	45	52	46	42	47	42	38	42	38	35
6	67	55	47	41	63	52	45	40	47	41	37	43	38	34	38	34	31
7	62	50	42	37	59	48	40	35	43	37	33	39	34	30	35	31	28
8	58	46	38	33	55	44	37	32	40	34	29	36	31	27	32	28	25
9	54	42	35	29	51	40	33	29	37	31	27	33	28	25	30	26	23
10	51	39	32	27	48	37	30	26	34	28	24	31	26	23	28	24	21

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3545	3545	3545
5°	3549	3486	3510
10°	3511	3416	3394
15°	3461	3300	3216
20°	3395	3142	2998
25°	3327	2966	2788
30°	3237	2785	2522
35°	3149	2591	2288
40°	3059	2390	2020
45°	2954	2168	1777
50°	2846	1943	1540
55°	2733	1704	1313
60°	2601	1455	1079
65°	2450	1201	969
70°	2267	964	875
75°	2036	845	793
80°	1703	701	682
85°	1157	456	504

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2954 cd/sqm

TEST NUMBER: P916763

CATALOG NUMBER: DFN2DIP-PN3F0-090D040US930-RLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	284.2	3.0
10°-20°	780.3	8.2
20°-30°	1095.5	11.6
30°-40°	1194.1	12.6
40°-50°	1097.5	11.6
50°-60°	861.9	9.1
60°-70°	561.0	5.9
70°-80°	288.8	3.1
80°-90°	75.6	0.8
90°-100°	36.3	0.4
100°-110°	135.3	1.4
110°-120°	358.8	3.8
120°-130°	595.1	6.3
130°-140°	632.1	6.7
140°-150°	587.5	6.2
150°-160°	472.3	5.0
160°-170°	304.4	3.2
170°-180°	104.8	1.1
0°-30°	2159.9	22.8
0°-40°	3354.0	35.4
0°-60°	5313.5	56.1
0°-90°	6239.0	65.9
90°-120°	530.4	5.6
90°-150°	2345.2	24.8
90°-180°	3227.0	34.1
0°-180°	9465.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3033	3033	3033	3033	3033	
5°	3033	3019	2983	3008	3000	288
15°	2884	2854	2761	2709	2682	813
25°	2618	2530	2349	2237	2196	1204
35°	2256	2116	1875	1702	1641	1412
45°	1844	1660	1372	1177	1111	1424
55°	1402	1188	892	727	675	1253
65°	947	724	478	384	376	939
75°	505	313	220	200	198	534
85°	118	60	52	52	52	135
90°	1	10	16	20	21	9
95°	52	25	31	35	34	61
105°	242	266	49	57	60	259
115°	458	471	491	123	65	451
125°	647	658	673	679	681	577
135°	801	814	821	829	828	619
145°	929	929	942	948	944	581
155°	1023	1016	1026	1030	1024	472
165°	1078	1074	1076	1082	1076	305
175°	1103	1097	1099	1105	1097	105
180°	1101	1101	1101	1101	1101	

TEST NUMBER: P916763

CATALOG NUMBER: DFN2DIP-PN3F0-090D040US930-RLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3032.7	3032.7	3032.7	3032.7	3032.7
2.5°	3046.4	3032.7	3002.3	3030.1	3024.5
5°	3032.7	3019.0	2983.2	3007.9	2999.7
7.5°	3007.9	2991.6	2953.2	2963.9	2950.2
10°	2975.0	2955.8	2901.1	2892.6	2876.3
12.5°	2933.9	2909.2	2835.0	2818.6	2788.3
15°	2884.4	2854.2	2761.0	2708.8	2681.5
17.5°	2826.8	2782.9	2667.5	2607.2	2563.3
20°	2761.0	2706.0	2568.8	2500.4	2439.8
22.5°	2689.7	2626.5	2467.2	2374.0	2333.0
25°	2618.3	2530.4	2349.3	2236.9	2195.5
27.5°	2533.3	2439.8	2239.5	2110.5	2047.3
30°	2442.7	2338.2	2118.6	1978.9	1904.6
32.5°	2354.7	2228.4	2003.6	1838.8	1770.1
35°	2256.1	2116.0	1874.6	1701.7	1641.1
37.5°	2160.0	2008.9	1753.8	1564.2	1495.8
40°	2058.4	1893.9	1627.4	1432.6	1361.3
42.5°	1954.1	1778.6	1501.3	1298.1	1229.6
45°	1844.4	1660.4	1372.3	1177.2	1111.4
47.5°	1740.1	1545.3	1248.9	1053.8	993.5
50°	1624.8	1430.0	1128.0	938.5	881.1
52.5°	1512.1	1306.3	1012.8	831.6	779.5
55°	1402.3	1188.3	891.9	727.4	675.2
57.5°	1290.0	1070.4	785.1	631.3	587.3
60°	1174.6	955.0	672.4	532.6	488.6
62.5°	1062.3	842.7	576.3	444.7	422.8
65°	946.9	724.5	477.5	384.3	375.9
67.5°	837.1	614.7	384.3	337.5	329.3
70°	721.9	507.8	318.3	290.9	279.8
72.5°	612.0	408.8	266.1	244.3	238.8
75°	504.9	312.7	219.6	200.3	197.7
77.5°	398.0	222.2	172.9	161.9	156.4
80°	299.1	159.3	131.6	120.8	120.8
82.5°	208.5	107.1	90.6	85.0	85.0
85°	117.9	60.3	52.1	52.1	52.1
87.5°	43.9	21.8	21.8	19.2	19.2
90°	0.7	9.5	15.9	20.0	21.4
92.5°	20.0	16.7	19.1	20.7	21.4
95°	51.7	25.4	31.0	35.1	34.2
97.5°	93.2	27.9	40.6	43.0	43.8
100°	141.0	31.9	45.4	51.7	53.3
102.5°	193.5	192.0	47.0	55.7	58.1
105°	242.1	266.0	48.6	57.3	60.5
107.5°	298.6	318.5	50.2	58.9	62.1
110°	352.9	369.5	139.4	59.8	62.9



TEST NUMBER: P916763

CATALOG NUMBER: DFN2DIP-PN3F0-090D040US930-RLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	403.8	418.1	404.6	61.3	63.8
115°	457.9	471.4	491.4	122.6	65.4
117.5°	504.9	520.8	534.4	420.4	211.8
120°	557.5	569.4	583.8	593.4	485.8
122.5°	602.0	614.8	630.8	635.5	636.3
125°	647.4	657.9	672.9	678.6	680.9
127.5°	688.8	700.0	712.0	720.0	720.7
130°	727.9	740.7	749.3	758.1	757.4
132.5°	767.7	778.1	786.8	794.0	793.3
135°	801.2	814.0	821.1	829.1	827.5
137.5°	836.2	845.7	853.8	861.7	859.3
140°	870.4	876.9	885.6	892.8	888.8
142.5°	899.2	904.7	915.1	921.4	917.5
145°	929.4	928.6	942.1	947.7	943.7
147.5°	955.6	953.2	966.8	970.8	967.7
150°	981.1	975.6	988.4	993.1	989.1
152.5°	1002.7	996.3	1008.2	1013.0	1007.5
155°	1023.4	1016.3	1025.8	1030.5	1024.2
157.5°	1040.1	1033.7	1041.0	1046.5	1040.1
160°	1054.4	1049.6	1054.4	1059.2	1053.6
162.5°	1067.1	1062.4	1066.4	1072.0	1064.8
165°	1078.3	1073.6	1075.9	1081.5	1075.9
167.5°	1087.1	1082.2	1084.8	1090.3	1083.1
170°	1094.3	1089.5	1091.0	1096.7	1089.5
172.5°	1099.0	1094.3	1095.9	1101.5	1094.3
175°	1102.9	1097.4	1099.0	1104.6	1096.7
177.5°	1104.6	1099.0	1099.8	1105.5	1098.3
180°	1100.7	1100.7	1100.7	1100.7	1100.7

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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	12.88	13.85	13.69	14.69	15.71	8.84	9.82	9.66	10.65	11.68
	3H	14.56	15.43	15.39	16.28	17.33	10.04	10.91	10.86	11.75	12.81
	4H	15.17	16.00	16.01	16.84	17.91	10.49	11.31	11.33	12.16	13.23
	6H	15.59	16.35	16.45	17.21	18.29	10.81	11.57	11.67	12.43	13.51
	8H	15.72	16.45	16.59	17.32	18.40	10.90	11.63	11.77	12.50	13.58
	12H	15.79	16.48	16.66	17.34	18.45	10.95	11.64	11.82	12.51	13.61
4H	2H	12.91	13.74	13.76	14.59	15.65	9.45	10.28	10.30	11.13	12.19
	3H	14.75	15.43	15.61	16.31	17.40	10.81	11.49	11.67	12.38	13.46
	4H	15.44	16.06	16.31	16.94	18.05	11.36	11.98	12.23	12.86	13.97
	6H	15.96	16.49	16.84	17.40	18.51	11.78	12.32	12.67	13.22	14.33
	8H	16.13	16.63	17.02	17.53	18.66	11.91	12.41	12.80	13.31	14.43
	12H	16.23	16.68	17.14	17.60	18.73	11.97	12.43	12.88	13.34	14.47
8H	4H	15.42	15.92	16.31	16.82	17.94	11.64	12.15	12.54	13.04	14.17
	6H	15.98	16.40	16.90	17.34	18.46	12.16	12.57	13.08	13.51	14.64
	8H	16.19	16.56	17.12	17.49	18.64	12.35	12.71	13.27	13.65	14.79
	12H	16.33	16.66	17.26	17.58	18.78	12.47	12.79	13.40	13.71	14.91
12H	4H	15.37	15.83	16.28	16.74	17.87	11.66	12.11	12.57	13.02	14.15
	6H	15.96	16.32	16.88	17.26	18.40	12.21	12.58	13.14	13.51	14.65
	8H	16.18	16.50	17.11	17.43	18.62	12.42	12.74	13.35	13.67	14.86