

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: P922190

Luminaire Tested: DFN2DIP-PN3F0-080D040US940-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P922190
REPORT IS A COMBINATION OF REPORTS P899536 AND P896399
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN3F0-080D040US940-RLLFLL
Description: 3 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

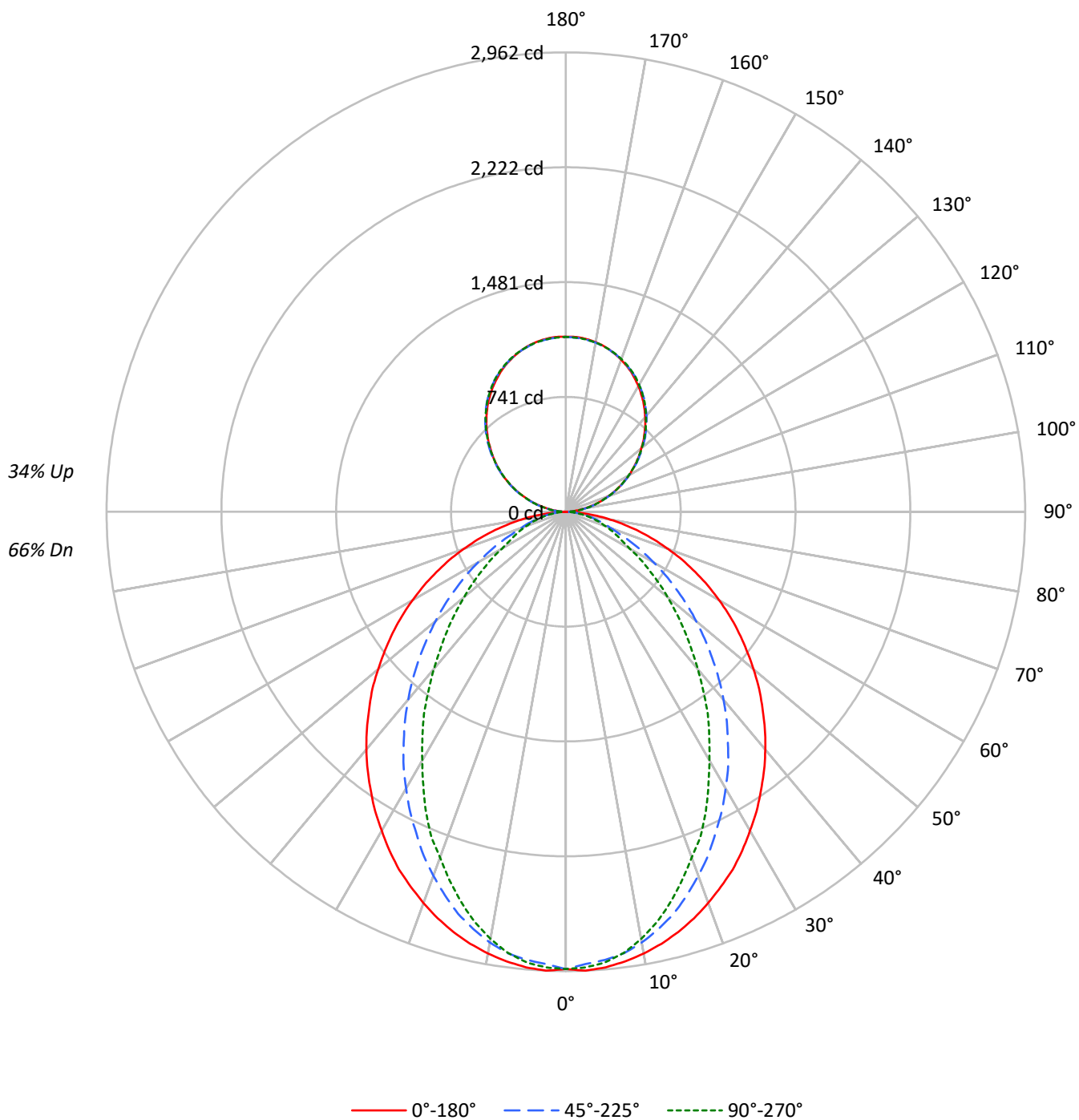
Lumens per Lamp: N/A
Luminaire Lumens: 9220.3 lumens
Efficiency: N/A
Efficacy: 83.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.96' x L: 3.11' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 109.9
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9967
Total Harmonic Distortion (THDi): 0.063
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	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	70	69		63	62	61
2	93	86	80	75		88	81	76	72		72	68	65		64	61	58		57	54	52
3	86	76	69	63		80	72	66	61		65	59	55		57	53	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		42	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		36	31	27		33	28	25		30	26	23
10	51	39	31	27		48	37	30	26		34	28	24		31	26	23		28	24	21

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3447	3447	3447
5°	3450	3389	3412
10°	3414	3321	3300
15°	3365	3208	3127
20°	3301	3055	2915
25°	3235	2883	2710
30°	3147	2707	2452
35°	3061	2519	2224
40°	2974	2324	1964
45°	2872	2107	1728
50°	2767	1889	1498
55°	2657	1657	1276
60°	2529	1414	1049
65°	2382	1167	942
70°	2204	937	851
75°	1980	821	771
80°	1655	681	663
85°	1125	443	490

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2872 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	276.3	3.0
10°-20°	758.6	8.2
20°-30°	1065.0	11.6
30°-40°	1160.9	12.6
40°-50°	1067.0	11.6
50°-60°	838.0	9.1
60°-70°	545.4	5.9
70°-80°	280.8	3.0
80°-90°	74.9	0.8
90°-100°	69.8	0.8
100°-110°	221.8	2.4
110°-120°	379.5	4.1
120°-130°	499.2	5.4
130°-140°	560.3	6.1
140°-150°	549.4	6.0
150°-160°	460.9	5.0
160°-170°	305.7	3.3
170°-180°	106.8	1.2
0°-30°	2099.9	22.8
0°-40°	3260.8	35.4
0°-60°	5165.8	56.0
0°-90°	6066.8	65.8
90°-120°	671.2	7.3
90°-150°	2280.1	24.7
90°-180°	3153.0	34.2
0°-180°	9220.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2948	2948	2948	2948	2948	
5°	2948	2935	2900	2924	2916	280
15°	2804	2775	2684	2634	2607	790
25°	2546	2460	2284	2175	2134	1171
35°	2193	2057	1822	1654	1595	1373
45°	1793	1614	1334	1144	1081	1385
55°	1363	1155	867	707	656	1218
65°	921	704	464	374	365	913
75°	491	304	214	195	192	519
85°	115	59	51	51	51	132
90°	1	12	33	31	32	9
95°	50	59	61	61	59	55
105°	205	207	210	211	211	216
115°	381	386	385	384	381	377
125°	554	562	560	557	556	495
135°	717	727	729	728	725	554
145°	870	877	882	883	880	544
155°	995	998	1000	1005	1002	458
165°	1082	1081	1081	1088	1083	305
175°	1126	1123	1121	1128	1122	107
180°	1128	1128	1128	1128	1128	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2948.4	2948.4	2948.4	2948.4	2948.4
2.5°	2961.6	2948.4	2918.9	2945.8	2940.4
5°	2948.4	2935.1	2900.2	2924.3	2916.3
7.5°	2924.3	2908.4	2871.0	2881.6	2868.2
10°	2892.3	2873.6	2820.4	2812.2	2796.3
12.5°	2852.4	2828.3	2756.1	2740.2	2710.8
15°	2804.3	2774.8	2684.2	2633.6	2606.9
17.5°	2748.2	2705.4	2593.4	2534.8	2492.0
20°	2684.2	2630.7	2497.4	2430.9	2371.9
22.5°	2614.9	2553.4	2398.6	2308.0	2268.1
25°	2545.5	2460.1	2283.9	2174.7	2134.5
27.5°	2462.8	2371.9	2177.2	2051.8	1990.4
30°	2374.8	2273.1	2059.8	1923.9	1851.6
32.5°	2289.3	2166.5	1947.9	1787.7	1720.9
35°	2193.3	2057.2	1822.5	1654.4	1595.4
37.5°	2099.9	1953.0	1705.0	1520.7	1454.2
40°	2001.2	1841.2	1582.2	1392.8	1323.4
42.5°	1899.8	1729.1	1459.6	1262.0	1195.4
45°	1793.1	1614.2	1334.2	1144.5	1080.6
47.5°	1691.8	1502.4	1214.2	1024.5	965.9
50°	1579.6	1390.3	1096.7	912.4	856.6
52.5°	1470.1	1269.9	984.5	808.5	757.9
55°	1363.3	1155.3	867.1	707.1	656.5
57.5°	1254.1	1040.6	763.2	613.8	571.0
60°	1141.9	928.5	653.6	517.7	475.0
62.5°	1032.7	819.2	560.3	432.3	411.1
65°	920.6	704.3	464.2	373.7	365.4
67.5°	813.9	597.6	373.7	328.1	320.2
70°	701.8	493.7	309.4	282.8	272.1
72.5°	595.0	397.4	258.8	237.6	232.1
75°	490.9	304.1	213.5	194.7	192.3
77.5°	387.0	216.0	168.2	157.4	152.0
80°	290.7	154.9	128.0	117.4	117.4
82.5°	202.7	104.2	88.0	82.7	82.7
85°	114.7	58.6	50.6	50.6	50.6
87.5°	42.7	21.2	21.2	18.7	18.7
90°	1.0	12.2	33.3	31.3	32.3
92.5°	21.0	28.5	29.6	30.6	30.6
95°	49.7	59.2	60.9	60.9	59.2
97.5°	82.7	91.5	95.2	95.2	95.2
100°	120.7	128.6	131.3	131.3	130.3
102.5°	160.9	166.7	170.4	171.4	170.4
105°	204.7	207.4	209.5	211.2	211.2
107.5°	248.3	252.4	252.4	253.0	248.3
110°	290.4	295.9	295.9	295.9	293.2

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	336.0	341.8	340.7	338.0	336.0
115°	380.8	386.4	384.6	383.6	380.8
117.5°	425.4	432.9	428.2	425.4	422.8
120°	470.4	477.8	470.4	470.4	467.3
122.5°	511.1	520.7	515.9	513.2	511.1
125°	554.0	562.5	559.8	556.7	555.7
127.5°	595.8	606.4	602.6	598.5	595.8
130°	634.9	647.2	645.5	643.5	639.7
132.5°	678.8	688.3	689.0	684.2	681.5
135°	716.6	727.1	729.2	728.1	725.4
137.5°	758.8	767.2	768.9	768.2	764.2
140°	795.8	804.3	809.0	809.0	805.3
142.5°	833.9	842.4	845.1	846.1	842.4
145°	870.0	876.7	882.2	883.2	879.5
147.5°	902.2	910.7	914.8	916.5	912.8
150°	935.6	941.4	945.1	948.2	945.1
152.5°	965.2	970.9	975.7	979.5	975.7
155°	994.7	997.5	1000.5	1005.3	1002.2
157.5°	1020.3	1022.3	1024.0	1030.8	1026.0
160°	1043.0	1045.1	1046.1	1051.9	1047.8
162.5°	1064.1	1064.1	1065.1	1071.6	1066.8
165°	1082.2	1081.1	1081.1	1087.9	1083.2
167.5°	1098.5	1095.4	1095.4	1102.2	1097.4
170°	1110.7	1108.0	1107.0	1113.7	1108.0
172.5°	1119.2	1116.5	1115.4	1122.3	1116.5
175°	1126.1	1123.3	1121.2	1128.0	1122.3
177.5°	1129.8	1127.0	1125.0	1130.8	1125.0
180°	1128.0	1128.0	1128.0	1128.0	1128.0

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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	12.77	13.75	13.58	14.58	15.61	8.73	9.71	9.55	10.55	11.57
	3H	14.45	15.33	15.28	16.17	17.23	9.93	10.80	10.76	11.65	12.70
	4H	15.06	15.89	15.91	16.74	17.81	10.38	11.21	11.23	12.06	13.12
	6H	15.49	16.25	16.34	17.10	18.18	10.70	11.46	11.56	12.32	13.40
	8H	15.61	16.34	16.48	17.21	18.29	10.80	11.52	11.66	12.39	13.48
	12H	15.68	16.37	16.55	17.24	18.34	10.84	11.53	11.71	12.40	13.51
4H	2H	12.80	13.63	13.65	14.48	15.55	9.34	10.17	10.19	11.02	12.09
	3H	14.64	15.32	15.50	16.21	17.29	10.70	11.39	11.56	12.27	13.35
	4H	15.33	15.95	16.20	16.83	17.95	11.25	11.87	12.12	12.75	13.86
	6H	15.85	16.39	16.74	17.29	18.40	11.67	12.21	12.56	13.11	14.23
	8H	16.02	16.52	16.91	17.42	18.55	11.80	12.30	12.69	13.20	14.32
	12H	16.12	16.57	17.03	17.49	18.62	11.87	12.32	12.78	13.24	14.37
8H	4H	15.31	15.81	16.20	16.71	17.84	11.54	12.04	12.43	12.94	14.06
	6H	15.87	16.29	16.79	17.23	18.35	12.05	12.47	12.97	13.41	14.53
	8H	16.09	16.45	17.01	17.39	18.53	12.24	12.61	13.17	13.54	14.68
	12H	16.23	16.55	17.16	17.47	18.67	12.36	12.68	13.29	13.61	14.80
12H	4H	15.27	15.72	16.18	16.64	17.77	11.55	12.00	12.46	12.92	14.05
	6H	15.85	16.22	16.78	17.15	18.29	12.10	12.47	13.03	13.40	14.54
	8H	16.07	16.39	17.00	17.32	18.51	12.31	12.64	13.24	13.56	14.76