

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: P928386

Luminaire Tested: DFN2DIP-HX4F0-100D040US927-RLLONL

Issue Date: 12/12/2024

Test Information

Test Method: LM-79-2019
Report Number: P928386
REPORT IS A COMBINATION OF REPORTS P900832 AND P896187
Test Lab: INNOVATION CENTER
Issue Date: 12/12/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX4F0-100D040US927-RLONL
Description: 4 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

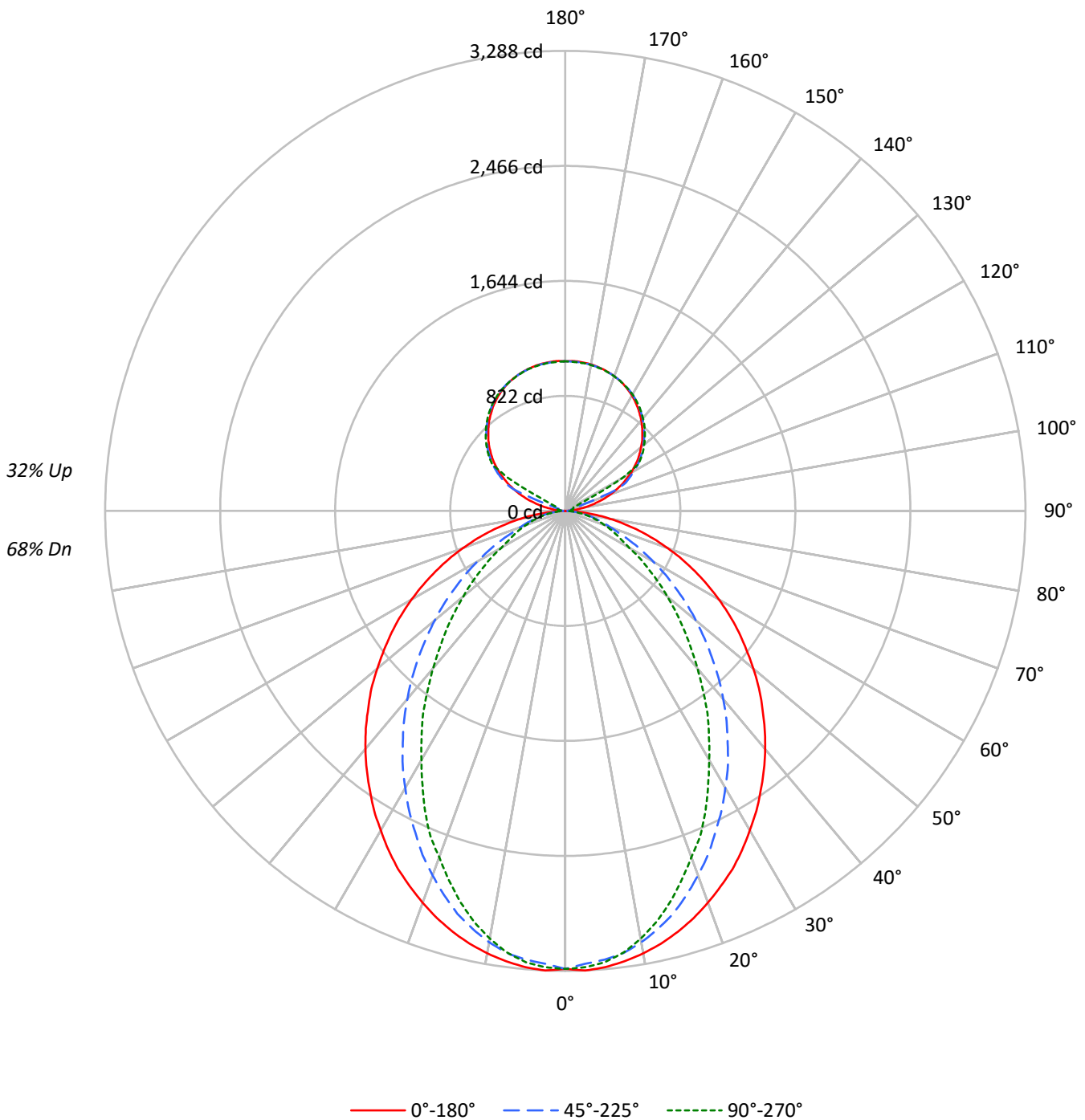
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 9868.3 lumens
Efficiency: N/A
Efficacy: 76.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.54' x L: 4.09' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 129.5
Input Voltage (V):
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: 0.946
Total Harmonic Distortion (THDi): 0.132
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	111	111	111	111	105	105	105	105	93	93	93	83	83	83	73	73	73	68				68
1	103	98	95	91	97	93	90	87	83	81	78	74	72	70	65	64	63	59				59
2	94	87	81	76	88	82	77	72	74	69	66	66	63	60	58	56	54	50				50
3	86	77	70	64	81	73	66	61	66	60	56	59	55	51	52	49	47	43				43
4	79	69	61	55	75	65	58	53	59	53	49	53	48	45	47	44	41	38				38
5	73	62	53	48	69	59	51	46	53	47	42	48	43	39	43	39	36	33				33
6	68	56	47	42	64	53	46	40	48	42	38	43	39	35	39	35	32	30				30
7	63	50	43	37	59	48	41	36	44	38	33	40	35	31	36	32	29	26				26
8	58	46	38	33	55	44	37	32	40	34	30	37	32	28	33	29	26	24				24
9	55	42	35	30	52	41	34	29	37	31	27	34	29	25	31	27	24	22				22
10	51	39	32	27	48	37	31	26	34	29	25	31	27	23	29	25	22	20				20

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2434	2434	2434
5°	2438	2396	2411
10°	2414	2349	2332
15°	2381	2271	2211
20°	2337	2165	2063
25°	2292	2045	1919
30°	2232	1922	1737
35°	2173	1790	1577
40°	2113	1653	1393
45°	2043	1502	1227
50°	1971	1348	1064
55°	1896	1185	908
60°	1809	1014	748
65°	1709	840	673
70°	1587	677	609
75°	1435	598	555
80°	1213	502	481
85°	849	336	362

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 2043 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	306.8	3.1
10°-20°	842.2	8.5
20°-30°	1182.4	12.0
30°-40°	1288.9	13.1
40°-50°	1184.6	12.0
50°-60°	930.3	9.4
60°-70°	605.5	6.1
70°-80°	311.7	3.2
80°-90°	81.4	0.8
90°-100°	35.2	0.4
100°-110°	131.4	1.3
110°-120°	348.6	3.5
120°-130°	578.1	5.9
130°-140°	614.1	6.2
140°-150°	570.7	5.8
150°-160°	458.8	4.6
160°-170°	295.7	3.0
170°-180°	101.8	1.0
0°-30°	2331.3	23.6
0°-40°	3620.2	36.7
0°-60°	5735.1	58.1
0°-90°	6733.8	68.2
90°-120°	515.2	5.2
90°-150°	2278.1	23.1
90°-180°	3134.0	31.8
0°-180°	9868.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3273	3273	3273	3273	3273	
5°	3273	3258	3220	3247	3238	310
15°	3113	3081	2980	2924	2894	877
25°	2826	2731	2536	2414	2370	1300
35°	2435	2284	2023	1837	1771	1524
45°	1991	1792	1481	1271	1200	1537
55°	1514	1283	963	785	729	1353
65°	1022	782	515	415	406	1013
75°	545	338	237	216	213	576
85°	127	65	56	56	56	146
90°	1	9	15	19	21	9
95°	50	25	30	34	33	59
105°	235	258	47	56	59	251
115°	445	458	477	119	64	438
125°	629	639	654	659	662	561
135°	778	791	798	805	804	601
145°	903	902	915	921	917	565
155°	994	987	996	1001	995	458
165°	1048	1043	1045	1051	1045	296
175°	1071	1066	1068	1073	1065	102
180°	1069	1069	1069	1069	1069	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3273.3	3273.3	3273.3	3273.3	3273.3
2.5°	3288.1	3273.3	3240.6	3270.5	3264.5
5°	3273.3	3258.5	3219.9	3246.6	3237.8
7.5°	3246.6	3229.0	3187.5	3199.1	3184.4
10°	3211.1	3190.3	3131.3	3122.1	3104.6
12.5°	3166.8	3140.0	3059.9	3042.3	3009.6
15°	3113.4	3080.6	2980.1	2923.8	2894.3
17.5°	3051.1	3003.7	2879.2	2814.1	2766.7
20°	2980.1	2920.7	2772.6	2698.8	2633.4
22.5°	2903.1	2834.9	2662.9	2562.4	2518.1
25°	2826.1	2731.2	2535.7	2414.3	2369.7
27.5°	2734.3	2633.4	2417.2	2278.0	2209.8
30°	2636.6	2523.7	2286.7	2135.9	2055.8
32.5°	2541.7	2405.2	2162.6	1984.8	1910.5
35°	2435.1	2284.0	2023.4	1836.7	1771.3
37.5°	2331.4	2168.3	1893.0	1688.4	1614.5
40°	2221.7	2044.2	1756.6	1546.3	1469.3
42.5°	2109.2	1919.6	1620.5	1401.1	1327.2
45°	1990.7	1792.1	1481.3	1270.7	1199.6
47.5°	1878.2	1668.0	1348.0	1137.4	1072.4
50°	1753.7	1543.4	1217.5	1013.0	951.0
52.5°	1632.1	1409.9	1093.1	897.6	841.3
55°	1513.6	1282.6	962.7	785.1	728.8
57.5°	1392.3	1155.3	847.4	681.4	633.9
60°	1267.8	1030.9	725.7	574.8	527.4
62.5°	1146.5	909.5	622.0	480.0	456.4
65°	1022.1	781.9	515.4	414.8	405.7
67.5°	903.6	663.5	414.8	364.2	355.4
70°	779.1	548.1	343.5	313.9	302.1
72.5°	660.6	441.2	287.3	263.7	257.7
75°	545.0	337.6	237.0	216.2	213.4
77.5°	429.7	239.8	186.7	174.7	168.8
80°	322.7	171.9	142.1	130.4	130.4
82.5°	225.0	115.6	97.7	91.8	91.8
85°	127.3	65.0	56.2	56.2	56.2
87.5°	47.4	23.6	23.6	20.8	20.8
90°	0.7	9.3	15.4	19.4	20.8
92.5°	19.4	16.2	18.5	20.1	20.8
95°	50.2	24.7	30.1	34.1	33.3
97.5°	90.5	27.1	39.4	41.8	42.5
100°	136.9	31.0	44.1	50.2	51.8
102.5°	187.9	186.5	45.6	54.1	56.5
105°	235.1	258.4	47.2	55.7	58.8
107.5°	290.1	309.4	48.8	57.3	60.4
110°	342.8	358.9	135.4	58.1	61.1



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	392.3	406.1	393.0	59.6	61.9
115°	444.8	457.9	477.3	119.1	63.5
117.5°	490.5	505.9	519.2	408.4	205.8
120°	541.6	553.1	567.1	576.4	472.0
122.5°	584.8	597.2	612.8	617.4	618.2
125°	628.9	639.1	653.7	659.2	661.5
127.5°	669.2	680.0	691.7	699.4	700.1
130°	707.1	719.5	727.9	736.5	735.8
132.5°	745.7	755.9	764.4	771.3	770.6
135°	778.3	790.7	797.6	805.4	803.9
137.5°	812.3	821.5	829.4	837.1	834.8
140°	845.5	851.8	860.3	867.2	863.4
142.5°	873.5	878.9	888.9	895.0	891.2
145°	902.9	902.1	915.2	920.6	916.7
147.5°	928.3	926.0	939.2	943.0	940.0
150°	953.1	947.7	960.1	964.7	960.9
152.5°	974.0	967.8	979.4	984.1	978.7
155°	994.1	987.2	996.5	1001.1	994.9
157.5°	1010.4	1004.2	1011.2	1016.6	1010.4
160°	1024.3	1019.6	1024.3	1028.9	1023.5
162.5°	1036.6	1032.1	1035.9	1041.3	1034.4
165°	1047.5	1042.9	1045.2	1050.6	1045.2
167.5°	1056.1	1051.3	1053.8	1059.1	1052.2
170°	1063.0	1058.3	1059.9	1065.3	1058.3
172.5°	1067.6	1063.0	1064.6	1070.0	1063.0
175°	1071.4	1066.0	1067.6	1073.0	1065.3
177.5°	1073.0	1067.6	1068.4	1073.9	1066.9
180°	1069.2	1069.2	1069.2	1069.2	1069.2



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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	11.79	12.80	12.58	13.61	14.59	7.77	8.77	8.56	9.58	10.57
	3H	13.48	14.38	14.29	15.20	16.22	8.97	9.87	9.77	10.69	11.70
	4H	14.10	14.95	14.92	15.77	16.80	9.43	10.28	10.25	11.10	12.13
	6H	14.53	15.31	15.37	16.15	17.19	9.76	10.54	10.59	11.37	12.42
	8H	14.66	15.41	15.51	16.26	17.30	9.86	10.60	10.70	11.45	12.49
	12H	14.73	15.44	15.58	16.29	17.35	9.91	10.61	10.75	11.46	12.53
4H	2H	11.83	12.68	12.66	13.51	14.53	8.38	9.23	9.21	10.06	11.08
	3H	13.68	14.38	14.52	15.24	16.29	9.75	10.45	10.59	11.31	12.36
	4H	14.38	15.02	15.23	15.88	16.95	10.31	10.95	11.16	11.80	12.88
	6H	14.90	15.46	15.77	16.34	17.41	10.74	11.29	11.60	12.17	13.25
	8H	15.08	15.60	15.95	16.47	17.56	10.87	11.39	11.74	12.26	13.35
	12H	15.19	15.65	16.07	16.55	17.64	10.95	11.41	11.83	12.30	13.40
8H	4H	14.36	14.87	15.23	15.75	16.84	10.60	11.12	11.47	11.99	13.08
	6H	14.93	15.36	15.83	16.28	17.37	11.13	11.55	12.02	12.47	13.56
	8H	15.15	15.53	16.06	16.44	17.55	11.32	11.70	12.23	12.61	13.72
	12H	15.30	15.63	16.21	16.53	17.69	11.45	11.78	12.36	12.68	13.84
12H	4H	14.32	14.78	15.21	15.68	16.77	10.61	11.08	11.50	11.97	13.07
	6H	14.91	15.29	15.82	16.20	17.30	11.18	11.56	12.08	12.47	13.57
	8H	15.14	15.47	16.05	16.37	17.53	11.40	11.73	12.31	12.63	13.79