

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: P921935

Luminaire Tested: DFN2DIP-HX4F0-120D080US940-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P921935
REPORT IS A COMBINATION OF REPORTS P899388 AND P896188
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX4F0-120D080US940-RLLFLL
Description: 4 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

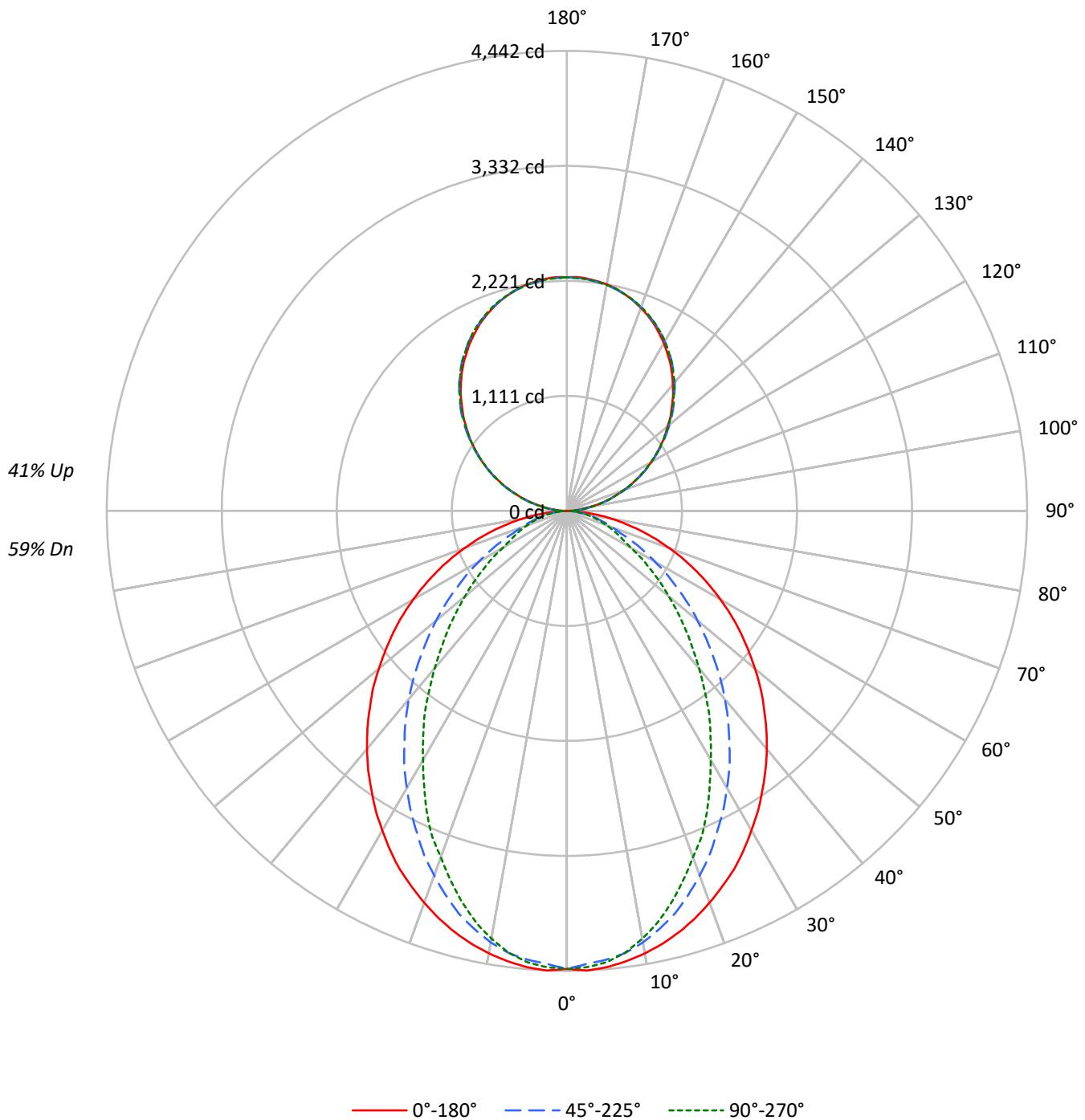
Lumens per Lamp: N/A
Luminaire Lumens: 15408.7 lumens
Efficiency: N/A
Efficacy: 89.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.54' x L: 4.09' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 171.5
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: P921935

CATALOG NUMBER: DFN2DIP-HX4F0-120D080US940-RLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P921935

CATALOG NUMBER: DFN2DIP-HX4F0-120D080US940-RLLFLL

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	109	109	109	109	102	102	102	102	88	88	88	76	76	76	64	64	64
1	100	96	92	89	94	90	87	84	78	76	74	68	66	64	58	57	56
2	92	85	79	74	86	79	74	70	69	65	62	60	57	55	52	50	48
3	84	75	68	62	78	70	64	59	62	57	53	54	50	47	46	44	41
4	77	67	59	53	72	63	56	51	55	50	46	48	44	41	42	39	36
5	71	60	52	46	66	56	49	44	50	44	40	44	39	36	38	34	32
6	66	54	46	40	61	51	44	39	45	39	35	40	35	32	35	31	28
7	61	49	41	36	57	46	39	34	41	35	31	36	32	28	32	28	25
8	57	45	37	32	53	42	35	30	38	32	28	33	29	25	29	26	23
9	53	41	34	29	50	39	32	27	35	29	25	31	26	23	27	24	21
10	50	38	31	26	47	36	29	25	32	27	23	29	24	21	25	22	19

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3288	3288	3288
5°	3294	3237	3257
10°	3262	3173	3151
15°	3217	3069	2988
20°	3158	2925	2787
25°	3097	2763	2593
30°	3016	2597	2346
35°	2936	2418	2130
40°	2855	2234	1882
45°	2761	2029	1658
50°	2663	1822	1438
55°	2562	1601	1227
60°	2444	1370	1010
65°	2308	1135	909
70°	2144	915	823
75°	1938	808	749
80°	1640	678	650
85°	1147	455	490

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2761 cd/sqm

TEST NUMBER: P921935

CATALOG NUMBER: DFN2DIP-HX4F0-120D080US940-RLFL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	414.5	2.7
10°-20°	1137.8	7.4
20°-30°	1597.5	10.4
30°-40°	1741.4	11.3
40°-50°	1600.5	10.4
50°-60°	1256.9	8.2
60°-70°	818.2	5.3
70°-80°	421.2	2.7
80°-90°	113.9	0.7
90°-100°	139.6	0.9
100°-110°	443.6	2.9
110°-120°	759.1	4.9
120°-130°	998.3	6.5
130°-140°	1120.6	7.3
140°-150°	1098.9	7.1
150°-160°	921.8	6.0
160°-170°	611.3	4.0
170°-180°	213.7	1.4
0°-30°	3149.8	20.4
0°-40°	4891.2	31.7
0°-60°	7748.6	50.3
0°-90°	9101.8	59.1
90°-120°	1342.3	8.7
90°-150°	4560.1	29.6
90°-180°	6307.0	40.9
0°-180°	15408.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4422	4422	4422	4422	4422	
5°	4422	4403	4350	4386	4375	419
15°	4206	4162	4026	3950	3910	1185
25°	3818	3690	3426	3262	3202	1756
35°	3290	3086	2734	2482	2393	2059
45°	2690	2421	2001	1717	1621	2077
55°	2045	1733	1301	1061	985	1827
65°	1381	1056	696	560	548	1369
75°	736	456	320	292	288	779
85°	172	88	76	76	76	197
90°	2	24	67	63	65	15
95°	99	118	122	122	118	111
105°	410	415	419	422	422	432
115°	762	773	769	767	762	753
125°	1108	1125	1120	1113	1111	990
135°	1433	1454	1458	1456	1451	1108
145°	1740	1754	1764	1766	1759	1087
155°	1990	1995	2001	2010	2004	916
165°	2164	2162	2162	2176	2166	611
175°	2252	2247	2242	2256	2244	214
180°	2256	2256	2256	2256	2256	

TEST NUMBER: P921935

CATALOG NUMBER: DFN2DIP-HX4F0-120D080US940-RLFL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	4422.5	4422.5	4422.5	4422.5	4422.5
2.5°	4442.5	4422.5	4378.4	4418.7	4410.6
5°	4422.5	4402.6	4350.3	4386.4	4374.6
7.5°	4386.4	4362.6	4306.6	4322.3	4302.3
10°	4338.4	4310.4	4230.5	4218.2	4194.5
12.5°	4278.5	4242.5	4134.1	4110.4	4066.3
15°	4206.4	4162.2	4026.3	3950.3	3910.4
17.5°	4122.3	4058.2	3890.0	3802.2	3738.0
20°	4026.3	3946.1	3746.1	3646.3	3557.9
22.5°	3922.3	3830.2	3597.9	3462.0	3402.1
25°	3818.3	3690.0	3425.9	3262.0	3201.7
27.5°	3694.3	3557.9	3265.8	3077.7	2985.5
30°	3562.2	3409.8	3089.6	2885.8	2777.5
32.5°	3434.0	3249.7	2921.9	2681.6	2581.3
35°	3290.1	3085.8	2733.7	2481.5	2393.2
37.5°	3149.9	2929.5	2557.5	2281.1	2181.3
40°	3001.7	2761.8	2373.3	2089.2	1985.1
42.5°	2849.6	2593.6	2189.4	1893.0	1793.2
45°	2689.6	2421.3	2001.3	1716.8	1620.8
47.5°	2537.5	2253.5	1821.2	1536.8	1448.9
50°	2369.5	2085.4	1645.0	1368.6	1285.0
52.5°	2205.1	1904.9	1476.9	1212.7	1136.8
55°	2045.0	1732.9	1300.6	1060.7	984.7
57.5°	1881.1	1560.9	1144.8	920.6	856.5
60°	1713.0	1392.8	980.4	776.7	712.6
62.5°	1549.1	1228.9	840.3	648.5	616.5
65°	1380.9	1056.5	696.4	560.5	548.2
67.5°	1220.8	896.3	560.5	492.1	480.3
70°	1052.7	740.6	464.1	424.2	408.0
72.5°	892.6	596.2	388.1	356.2	348.2
75°	736.3	456.0	320.2	292.1	288.3
77.5°	580.5	324.0	252.3	236.1	228.0
80°	436.1	232.3	191.9	176.2	176.2
82.5°	304.1	156.2	132.1	123.9	123.9
85°	172.0	87.9	76.0	76.0	76.0
87.5°	64.1	31.8	31.8	28.0	28.0
90°	2.1	24.5	66.7	62.6	64.6
92.5°	42.2	57.2	59.2	61.2	61.2
95°	99.3	118.3	121.7	121.7	118.3
97.5°	165.3	183.0	190.5	190.5	190.5
100°	241.5	257.1	262.5	262.5	260.5
102.5°	321.7	333.3	340.7	342.8	340.7
105°	409.5	414.9	419.0	422.4	422.4
107.5°	496.5	504.7	504.7	506.0	496.5
110°	580.9	591.7	591.7	591.7	586.3



TEST NUMBER: P921935

CATALOG NUMBER: DFN2DIP-HX4F0-120D080US940-RLFL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	672.0	683.6	681.5	676.1	672.0
115°	761.8	772.7	769.3	767.2	761.8
117.5°	850.9	865.9	856.3	850.9	845.4
120°	940.7	955.6	940.7	940.7	934.5
122.5°	1022.3	1041.3	1031.8	1026.4	1022.3
125°	1108.0	1125.0	1119.5	1113.4	1111.4
127.5°	1191.7	1212.7	1205.2	1197.1	1191.7
130°	1269.9	1294.3	1290.9	1286.9	1279.4
132.5°	1357.6	1376.6	1378.0	1368.5	1363.1
135°	1433.1	1454.2	1458.3	1456.3	1450.8
137.5°	1517.4	1534.5	1537.8	1536.5	1528.3
140°	1591.6	1608.6	1618.1	1618.1	1610.6
142.5°	1667.8	1684.8	1690.2	1692.3	1684.8
145°	1739.9	1753.5	1764.3	1766.4	1758.9
147.5°	1804.5	1821.5	1829.6	1833.1	1825.6
150°	1871.2	1882.7	1890.2	1896.3	1890.2
152.5°	1930.3	1941.9	1951.4	1958.9	1951.4
155°	1989.5	1994.9	2001.1	2010.5	2004.5
157.5°	2040.5	2044.6	2048.0	2061.5	2052.1
160°	2086.1	2090.2	2092.2	2103.7	2095.6
162.5°	2128.2	2128.2	2130.3	2143.2	2133.7
165°	2164.3	2162.2	2162.2	2175.9	2166.3
167.5°	2196.9	2190.8	2190.8	2204.4	2194.9
170°	2221.4	2216.0	2213.9	2227.6	2216.0
172.5°	2238.5	2233.0	2231.0	2244.5	2233.0
175°	2252.0	2246.6	2242.5	2256.1	2244.5
177.5°	2259.5	2254.1	2250.0	2261.6	2250.0
180°	2256.1	2256.1	2256.1	2256.1	2256.1

TEST NUMBER: P921935

CATALOG NUMBER: DFN2DIP-HX4F0-120D080US940-RLLFLL

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	12.09	13.00	12.97	13.90	15.04	8.06	8.97	8.95	9.87	11.01
	3H	13.77	14.59	14.67	15.50	16.66	9.26	10.07	10.15	10.98	12.15
	4H	14.39	15.16	15.30	16.07	17.24	9.71	10.48	10.63	11.40	12.57
	6H	14.81	15.52	15.74	16.44	17.63	10.04	10.75	10.96	11.67	12.85
	8H	14.94	15.62	15.87	16.55	17.74	10.13	10.81	11.06	11.74	12.93
	12H	15.01	15.65	15.94	16.58	17.79	10.18	10.82	11.12	11.75	12.96
4H	2H	12.12	12.89	13.03	13.80	14.97	8.67	9.44	9.58	10.35	11.52
	3H	13.96	14.59	14.88	15.54	16.73	10.03	10.67	10.95	11.61	12.80
	4H	14.65	15.23	15.59	16.17	17.39	10.58	11.16	11.52	12.10	13.32
	6H	15.17	15.67	16.12	16.64	17.85	11.01	11.51	11.96	12.47	13.68
	8H	15.35	15.82	16.30	16.77	18.00	11.14	11.60	12.09	12.56	13.79
	12H	15.45	15.87	16.42	16.84	18.08	11.21	11.63	12.18	12.60	13.84
8H	4H	14.63	15.09	15.58	16.05	17.28	10.87	11.33	11.82	12.29	13.52
	6H	15.20	15.58	16.17	16.58	17.81	11.39	11.78	12.37	12.78	14.00
	8H	15.41	15.75	16.40	16.74	17.99	11.58	11.92	12.57	12.91	14.16
	12H	15.56	15.86	16.55	16.84	18.13	11.71	12.01	12.70	12.99	14.28
12H	4H	14.58	15.00	15.55	15.98	17.21	10.88	11.30	11.85	12.27	13.50
	6H	15.17	15.51	16.16	16.50	17.75	11.44	11.78	12.43	12.77	14.01
	8H	15.40	15.70	16.39	16.68	17.97	11.66	11.96	12.64	12.94	14.23

END OF REPORT