

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: P913370

Luminaire Tested: DFN2DIP-HX2F0-040D020US927-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P913370
REPORT IS A COMBINATION OF REPORTS P899155 AND P896039
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX2F0-040D020US927-FLLFLL
Description: 2 foot, Hexagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

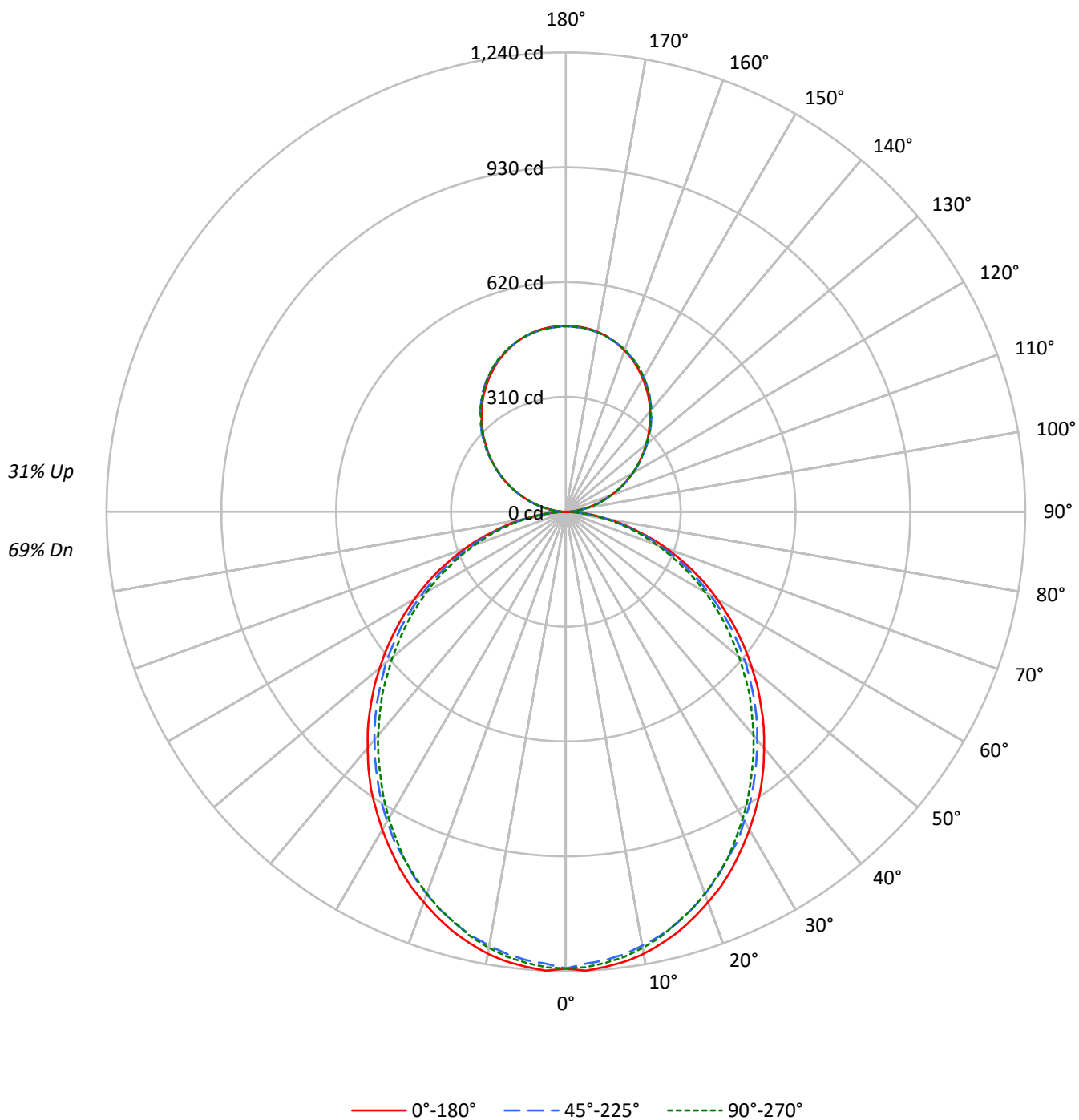
Lumens per Lamp: N/A
Luminaire Lumens: 4539.2 lumens
Efficiency: N/A
Efficacy: 88.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 1.99' x L: 2.3' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 51.3
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9933
Total Harmonic Distortion (THDi): 0.066
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P913370

CATALOG NUMBER: DFN2DIP-HX2F0-040D020US927-FLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P913370

CATALOG NUMBER: DFN2DIP-HX2F0-040D020US927-FLLFL

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	112	112	112	112	106	106	106	106	94	94	94	83	83	83	74	74	74
1	102	98	94	90	96	92	89	86	83	80	77	74	71	70	65	64	62
2	93	85	79	74	88	81	75	70	72	68	64	65	61	58	57	55	52
3	85	75	67	61	80	71	64	59	64	58	54	57	53	49	51	48	45
4	78	67	58	52	73	63	56	50	57	51	46	51	46	42	46	42	39
5	71	59	51	45	67	56	49	43	51	45	40	46	41	37	41	37	34
6	66	53	45	39	62	51	43	38	46	40	35	41	36	32	37	33	30
7	61	48	40	34	58	46	39	33	42	36	31	38	33	29	34	30	26
8	57	44	36	31	54	42	35	30	38	32	28	35	29	26	31	27	24
9	53	40	33	27	50	39	31	26	35	29	25	32	27	23	29	25	21
10	50	37	30	25	47	36	29	24	32	27	22	30	25	21	27	23	20

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2905	2905	2905
5°	2905	2858	2878
10°	2877	2812	2834
15°	2830	2759	2768
20°	2768	2688	2701
25°	2706	2604	2623
30°	2631	2526	2527
35°	2558	2434	2425
40°	2470	2342	2327
45°	2381	2249	2227
50°	2285	2151	2111
55°	2183	2038	2004
60°	2067	1905	1881
65°	1941	1765	1737
70°	1780	1596	1579
75°	1560	1392	1427
80°	1291	1133	1152
85°	877	712	712

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2381 cd/sqm

TEST NUMBER: P913370

CATALOG NUMBER: DFN2DIP-HX2F0-040D020US927-FLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	116.0	2.6
10°-20°	326.5	7.2
20°-30°	479.8	10.6
30°-40°	557.3	12.3
40°-50°	556.6	12.3
50°-60°	485.3	10.7
60°-70°	358.8	7.9
70°-80°	203.0	4.5
80°-90°	55.0	1.2
90°-100°	31.0	0.7
100°-110°	98.5	2.2
110°-120°	168.6	3.7
120°-130°	221.7	4.9
130°-140°	248.9	5.5
140°-150°	244.1	5.4
150°-160°	204.7	4.5
160°-170°	135.8	3.0
170°-180°	47.5	1.0
0°-30°	922.4	20.3
0°-40°	1479.7	32.6
0°-60°	2521.7	55.6
0°-90°	3138.5	69.1
90°-120°	298.1	6.6
90°-150°	1012.8	22.3
90°-180°	1401.0	30.9
0°-180°	4539.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1233	1233	1233	1233	1233	
5°	1233	1228	1215	1225	1222	117
15°	1174	1167	1151	1156	1150	331
25°	1062	1053	1033	1035	1033	489
35°	916	905	886	878	873	572
45°	746	738	720	707	702	576
55°	564	557	543	529	523	505
65°	381	373	362	351	345	376
75°	199	197	191	184	186	213
85°	49	48	46	43	42	54
90°	0	6	15	14	14	4
95°	22	26	27	27	26	25
105°	91	92	93	94	94	96
115°	169	172	171	170	169	167
125°	246	250	249	247	247	220
135°	318	323	324	323	322	246
145°	386	389	392	392	391	241
155°	442	443	444	447	445	203
165°	481	480	480	483	481	136
175°	500	499	498	501	498	48
180°	501	501	501	501	501	

TEST NUMBER: P913370

CATALOG NUMBER: DFN2DIP-HX2F0-040D020US927-FLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1233.0	1233.0	1233.0	1233.0	1233.0
2.5°	1240.2	1234.2	1221.1	1233.0	1230.7
5°	1233.0	1228.3	1215.2	1224.6	1222.4
7.5°	1224.6	1217.6	1204.5	1214.1	1211.7
10°	1211.7	1203.4	1189.2	1198.6	1195.1
12.5°	1193.8	1186.8	1172.6	1178.5	1176.1
15°	1173.7	1166.6	1151.2	1156.0	1150.1
17.5°	1148.8	1141.8	1126.3	1132.2	1126.3
20°	1121.5	1114.4	1097.9	1101.4	1096.8
22.5°	1094.3	1083.6	1068.2	1068.2	1065.8
25°	1062.2	1052.8	1032.7	1035.0	1032.7
27.5°	1026.7	1018.3	1003.1	999.5	993.6
30°	991.2	981.7	963.9	960.4	955.6
32.5°	953.2	946.2	927.2	920.0	915.2
35°	916.5	904.7	885.7	878.5	872.6
37.5°	875.0	864.3	845.3	837.0	831.1
40°	832.3	822.8	803.7	793.2	788.5
42.5°	790.8	781.2	762.4	750.4	743.4
45°	745.8	737.5	719.6	706.7	701.9
47.5°	701.9	693.6	674.6	661.6	654.5
50°	655.6	649.7	633.1	616.5	610.5
52.5°	610.5	602.3	586.9	573.9	565.5
55°	564.4	557.2	543.0	528.8	522.9
57.5°	518.1	512.2	496.7	482.5	477.8
60°	471.8	467.1	450.6	437.5	434.0
62.5°	426.8	418.5	406.7	394.8	390.1
65°	380.6	373.4	361.6	350.9	345.1
67.5°	333.2	327.2	316.6	308.3	303.6
70°	289.3	284.6	273.9	265.5	260.9
72.5°	244.3	239.5	233.6	225.3	221.7
75°	199.2	196.9	190.8	183.8	186.2
77.5°	158.8	154.1	151.7	148.1	144.7
80°	118.6	117.3	114.9	111.5	109.1
82.5°	80.6	80.6	79.5	74.7	74.7
85°	48.6	47.5	46.3	42.6	41.5
87.5°	21.4	19.0	16.6	13.1	11.8
90°	0.5	5.5	14.8	13.9	14.3
92.5°	9.3	12.7	13.2	13.6	13.6
95°	22.0	26.3	27.0	27.0	26.3
97.5°	36.7	40.6	42.3	42.3	42.3
100°	53.6	57.1	58.3	58.3	57.8
102.5°	71.5	74.0	75.7	76.1	75.7
105°	90.9	92.1	93.1	93.8	93.8
107.5°	110.3	112.1	112.1	112.4	110.3
110°	129.0	131.4	131.4	131.4	130.2



TEST NUMBER: P913370

CATALOG NUMBER: DFN2DIP-HX2F0-040D020US927-FLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	149.2	151.8	151.4	150.1	149.2
115°	169.2	171.6	170.9	170.4	169.2
117.5°	189.0	192.3	190.2	189.0	187.7
120°	208.9	212.2	208.9	208.9	207.6
122.5°	227.0	231.2	229.2	228.0	227.0
125°	246.1	249.9	248.7	247.3	246.8
127.5°	264.7	269.3	267.7	265.9	264.7
130°	282.0	287.5	286.7	285.8	284.2
132.5°	301.5	305.8	306.0	304.0	302.7
135°	318.3	323.0	323.8	323.4	322.2
137.5°	337.0	340.8	341.6	341.3	339.4
140°	353.5	357.3	359.4	359.4	357.7
142.5°	370.4	374.1	375.4	375.8	374.1
145°	386.4	389.4	391.9	392.3	390.6
147.5°	400.8	404.6	406.4	407.1	405.4
150°	415.6	418.1	419.8	421.1	419.8
152.5°	428.7	431.3	433.4	435.1	433.4
155°	441.9	443.1	444.4	446.6	445.2
157.5°	453.2	454.1	454.9	457.9	455.7
160°	463.3	464.2	464.7	467.2	465.4
162.5°	472.7	472.7	473.1	476.0	473.9
165°	480.7	480.2	480.2	483.2	481.2
167.5°	487.9	486.6	486.6	489.6	487.5
170°	493.4	492.2	491.7	494.7	492.2
172.5°	497.2	495.9	495.5	498.5	495.9
175°	500.2	499.0	498.0	501.1	498.5
177.5°	501.8	500.7	499.7	502.2	499.7
180°	501.1	501.1	501.1	501.1	501.1

TEST NUMBER: P913370

CATALOG NUMBER: DFN2DIP-HX2F0-040D020US927-FLLFLL

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	12.44	13.51	13.22	14.30	15.27	12.02	13.08	12.79	13.88	14.85
	3H	14.09	15.05	14.88	15.86	16.85	13.63	14.59	14.42	15.39	16.39
	4H	14.67	15.58	15.48	16.39	17.40	14.21	15.12	15.02	15.93	16.94
	6H	15.06	15.90	15.88	16.72	17.74	14.60	15.44	15.42	16.26	17.28
	8H	15.16	15.96	15.99	16.80	17.82	14.71	15.50	15.53	16.34	17.37
	12H	15.21	15.97	16.04	16.80	17.85	14.75	15.51	15.58	16.34	17.39
4H	2H	12.92	13.82	13.73	14.64	15.65	12.58	13.48	13.39	14.30	15.31
	3H	14.77	15.53	15.59	16.38	17.40	14.39	15.14	15.21	15.99	17.02
	4H	15.48	16.16	16.31	17.01	18.06	15.08	15.77	15.92	16.62	17.67
	6H	15.98	16.57	16.83	17.44	18.50	15.58	16.18	16.43	17.05	18.11
	8H	16.12	16.68	16.98	17.54	18.61	15.73	16.28	16.58	17.15	18.22
	12H	16.19	16.69	17.07	17.58	18.66	15.79	16.29	16.66	17.17	18.25
8H	4H	15.68	16.23	16.53	17.10	18.17	15.33	15.88	16.18	16.75	17.82
	6H	16.29	16.75	17.17	17.66	18.73	15.94	16.40	16.82	17.30	18.38
	8H	16.49	16.90	17.39	17.80	18.89	16.14	16.55	17.03	17.45	18.54
	12H	16.62	16.98	17.51	17.87	19.01	16.25	16.61	17.15	17.50	18.65
12H	4H	15.67	16.17	16.55	17.06	18.13	15.33	15.83	16.20	16.71	17.79
	6H	16.31	16.72	17.21	17.63	18.71	15.97	16.38	16.87	17.28	18.37
	8H	16.55	16.91	17.44	17.80	18.94	16.20	16.56	17.10	17.46	18.60