

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: P921556

Luminaire Tested: DFN2DIP-HX2F0-040D020US940-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P921556
REPORT IS A COMBINATION OF REPORTS P899156 AND P896039
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX2F0-040D020US940-RLLFLL
Description: 2 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

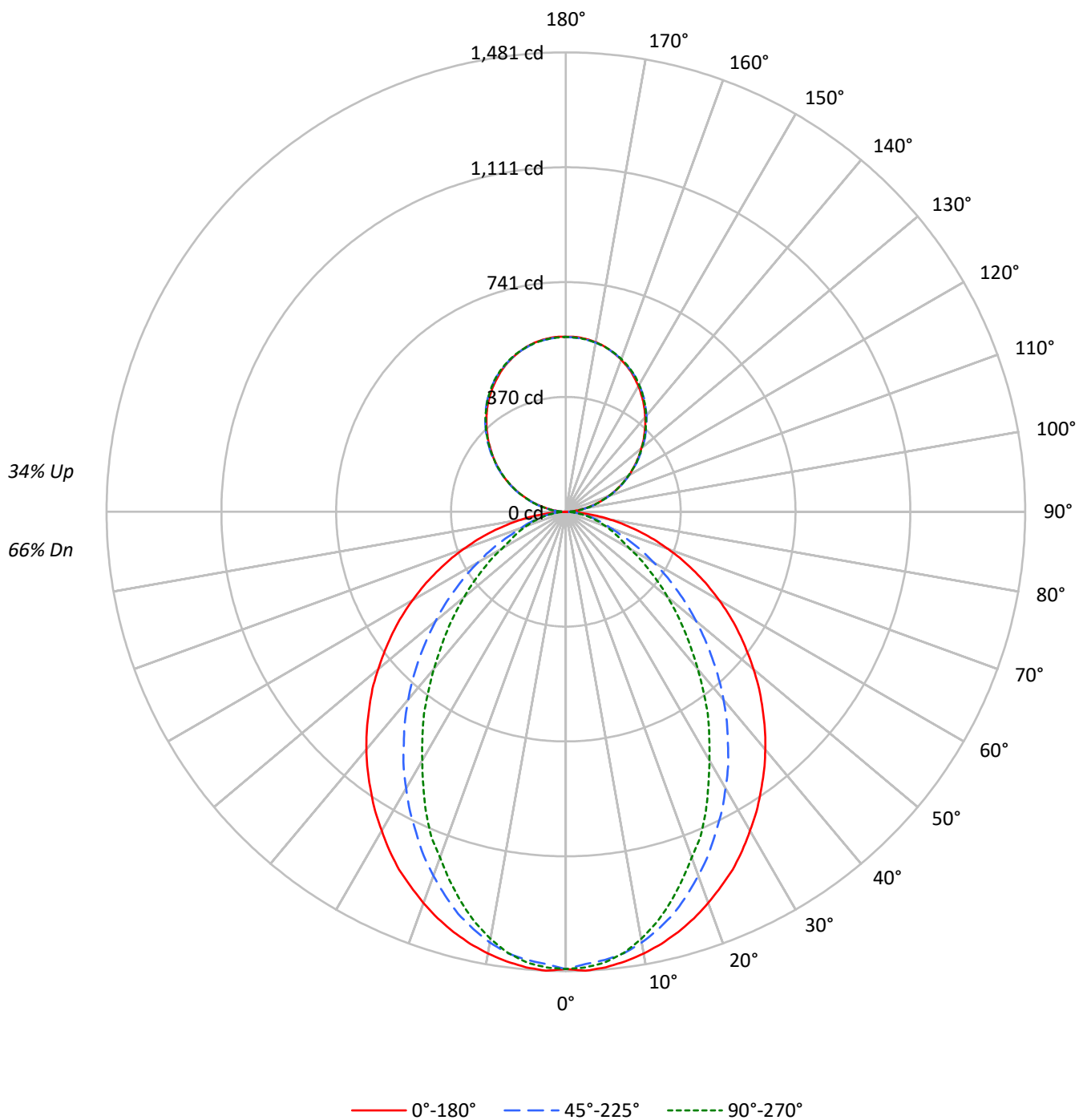
Lumens per Lamp: N/A
Luminaire Lumens: 4610.1 lumens
Efficiency: N/A
Efficacy: 89.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 1.99' x L: 2.3' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 51.3
Input Voltage (V):
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: P921556

CATALOG NUMBER: DFN2DIP-HX2F0-040D020US940-RLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P921556

CATALOG NUMBER: DFN2DIP-HX2F0-040D020US940-RLFL

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°	3473	3473	3473
5°	3473	3410	3434
10°	3434	3335	3316
15°	3381	3217	3137
20°	3313	3057	2920
25°	3243	2880	2711
30°	3151	2698	2448
35°	3061	2505	2216
40°	2969	2305	1953
45°	2863	2085	1714
50°	2752	1863	1481
55°	2636	1627	1258
60°	2502	1381	1030
65°	2347	1133	919
70°	2159	901	823
75°	1922	779	737
80°	1581	630	621
85°	1034	389	434

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2863 cd/sqm

TEST NUMBER: P921556

CATALOG NUMBER: DFN2DIP-HX2F0-040D020US940-RLFL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	138.2	3.0
10°-20°	379.3	8.2
20°-30°	532.5	11.6
30°-40°	580.5	12.6
40°-50°	533.5	11.6
50°-60°	419.0	9.1
60°-70°	272.7	5.9
70°-80°	140.4	3.0
80°-90°	37.4	0.8
90°-100°	34.9	0.8
100°-110°	110.9	2.4
110°-120°	189.8	4.1
120°-130°	249.6	5.4
130°-140°	280.2	6.1
140°-150°	274.7	6.0
150°-160°	230.4	5.0
160°-170°	152.8	3.3
170°-180°	53.4	1.2
0°-30°	1049.9	22.8
0°-40°	1630.4	35.4
0°-60°	2582.9	56.0
0°-90°	3033.4	65.8
90°-120°	335.6	7.3
90°-150°	1140.0	24.7
90°-180°	1577.0	34.2
0°-180°	4610.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1474	1474	1474	1474	1474	
5°	1474	1468	1450	1462	1458	140
15°	1402	1387	1342	1317	1304	395
25°	1273	1230	1142	1087	1067	585
35°	1097	1029	911	827	798	686
45°	896	807	667	572	540	692
55°	682	578	434	354	328	609
65°	460	352	232	187	183	456
75°	245	152	107	97	96	260
85°	57	29	25	25	25	66
90°	0	6	17	16	16	5
95°	25	30	30	30	30	28
105°	102	104	105	106	106	108
115°	190	193	192	192	190	188
125°	277	281	280	278	278	248
135°	358	364	364	364	363	277
145°	435	438	441	442	440	272
155°	497	499	500	503	501	229
165°	541	541	541	544	542	153
175°	563	562	561	564	561	53
180°	564	564	564	564	564	

TEST NUMBER: P921556

CATALOG NUMBER: DFN2DIP-HX2F0-040D020US940-RLFL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1474.2	1474.2	1474.2	1474.2	1474.2
2.5°	1480.9	1474.2	1459.5	1472.9	1470.2
5°	1474.2	1467.5	1450.1	1462.1	1458.2
7.5°	1462.1	1454.2	1435.6	1440.7	1434.1
10°	1446.2	1436.8	1410.2	1406.0	1398.2
12.5°	1426.2	1414.2	1378.0	1370.1	1355.4
15°	1402.1	1387.4	1342.1	1316.8	1303.5
17.5°	1374.1	1352.7	1296.6	1267.4	1246.0
20°	1342.1	1315.4	1248.7	1215.4	1186.0
22.5°	1307.4	1276.8	1199.3	1154.0	1134.1
25°	1272.7	1230.0	1141.9	1087.4	1067.2
27.5°	1231.5	1186.0	1088.6	1025.9	995.1
30°	1187.4	1136.6	1029.8	961.9	925.9
32.5°	1144.7	1083.2	973.9	893.9	860.4
35°	1096.7	1028.6	911.2	827.2	797.7
37.5°	1050.0	976.5	852.5	760.4	727.1
40°	1000.6	920.6	791.1	696.4	661.7
42.5°	949.8	864.5	729.8	631.0	597.7
45°	896.5	807.1	667.1	572.3	540.3
47.5°	845.9	751.2	607.1	512.3	483.0
50°	789.8	695.1	548.3	456.2	428.3
52.5°	735.0	635.0	492.3	404.2	378.9
55°	681.7	577.6	433.5	353.6	328.2
57.5°	627.1	520.3	381.6	306.8	285.5
60°	571.0	464.2	326.8	258.9	237.6
62.5°	516.4	409.7	280.1	216.2	205.5
65°	460.3	352.1	232.1	186.8	182.7
67.5°	407.0	298.8	186.8	164.1	160.1
70°	350.9	246.8	154.7	141.4	136.0
72.5°	297.6	198.8	129.4	118.8	116.1
75°	245.4	152.0	106.7	97.4	96.1
77.5°	193.5	108.0	84.1	78.7	76.0
80°	145.3	77.4	63.9	58.8	58.8
82.5°	101.4	52.1	44.1	41.3	41.3
85°	57.3	29.3	25.3	25.3	25.3
87.5°	21.4	10.6	10.6	9.4	9.4
90°	0.5	6.2	16.7	15.6	16.1
92.5°	10.5	14.3	14.8	15.3	15.3
95°	24.8	29.6	30.4	30.4	29.6
97.5°	41.3	45.7	47.6	47.6	47.6
100°	60.4	64.3	65.6	65.6	65.1
102.5°	80.4	83.3	85.2	85.7	85.2
105°	102.4	103.7	104.8	105.6	105.6
107.5°	124.1	126.2	126.2	126.5	124.1
110°	145.3	147.9	147.9	147.9	146.6

TEST NUMBER: P921556

CATALOG NUMBER: DFN2DIP-HX2F0-040D020US940-RLFL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	168.0	170.9	170.4	169.0	168.0
115°	190.5	193.1	192.3	191.8	190.5
117.5°	212.8	216.5	214.1	212.8	211.3
120°	235.1	238.9	235.1	235.1	233.6
122.5°	255.6	260.3	258.0	256.6	255.6
125°	277.0	281.2	279.9	278.4	277.9
127.5°	297.9	303.2	301.3	299.3	297.9
130°	317.4	323.6	322.7	321.7	319.9
132.5°	339.4	344.2	344.5	342.1	340.7
135°	358.3	363.6	364.5	364.1	362.7
137.5°	379.3	383.6	384.5	384.1	382.1
140°	397.9	402.2	404.6	404.6	402.7
142.5°	417.0	421.2	422.6	423.0	421.2
145°	435.0	438.4	441.1	441.6	439.7
147.5°	451.1	455.4	457.4	458.2	456.4
150°	467.8	470.6	472.5	474.0	472.5
152.5°	482.6	485.4	487.9	489.7	487.9
155°	497.4	498.7	500.2	502.7	501.1
157.5°	510.1	511.1	512.0	515.4	513.0
160°	521.6	522.5	523.1	525.9	523.9
162.5°	532.1	532.1	532.5	535.8	533.4
165°	541.1	540.6	540.6	543.9	541.6
167.5°	549.2	547.7	547.7	551.1	548.8
170°	555.4	554.0	553.5	556.9	554.0
172.5°	559.6	558.2	557.8	561.2	558.2
175°	563.0	561.7	560.6	564.0	561.2
177.5°	564.9	563.6	562.5	565.3	562.5
180°	564.0	564.0	564.0	564.0	564.0

TEST NUMBER: P921556

CATALOG NUMBER: DFN2DIP-HX2F0-040D020US940-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	12.70	13.67	13.51	14.51	15.54	8.68	9.66	9.49	10.49	11.52
	3H	14.36	15.24	15.19	16.08	17.14	9.86	10.74	10.69	11.58	12.64
	4H	14.96	15.78	15.80	16.63	17.70	10.31	11.13	11.15	11.98	13.05
	6H	15.37	16.13	16.22	16.98	18.07	10.62	11.38	11.48	12.24	13.32
	8H	15.49	16.21	16.35	17.08	18.17	10.71	11.43	11.57	12.31	13.39
	12H	15.54	16.23	16.41	17.10	18.21	10.75	11.44	11.62	12.31	13.41
4H	2H	12.73	13.55	13.58	14.40	15.47	9.28	10.10	10.13	10.95	12.02
	3H	14.54	15.23	15.40	16.11	17.19	10.62	11.31	11.48	12.19	13.27
	4H	15.22	15.84	16.09	16.72	17.84	11.16	11.78	12.03	12.66	13.78
	6H	15.72	16.26	16.61	17.16	18.28	11.57	12.11	12.46	13.01	14.13
	8H	15.88	16.39	16.78	17.28	18.41	11.69	12.19	12.58	13.09	14.22
	12H	15.97	16.42	16.88	17.34	18.47	11.75	12.21	12.67	13.12	14.26
8H	4H	15.20	15.70	16.09	16.60	17.72	11.44	11.94	12.33	12.84	13.96
	6H	15.74	16.15	16.66	17.09	18.22	11.94	12.35	12.86	13.29	14.42
	8H	15.94	16.31	16.87	17.24	18.38	12.12	12.48	13.04	13.42	14.56
	12H	16.07	16.39	17.00	17.32	18.51	12.23	12.55	13.16	13.48	14.67
12H	4H	15.15	15.60	16.06	16.52	17.65	11.44	11.90	12.36	12.81	13.95
	6H	15.71	16.08	16.64	17.01	18.16	11.98	12.35	12.91	13.28	14.43
	8H	15.92	16.25	16.85	17.17	18.37	12.18	12.51	13.11	13.43	14.63

END OF REPORT