

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: P907977

Luminaire Tested: DFN2DIP-HX3F0-030D030US840-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P907977
REPORT IS A COMBINATION OF REPORTS P900722 AND P897645
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX3F0-030D030US840-RLLONL
Description: 3 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

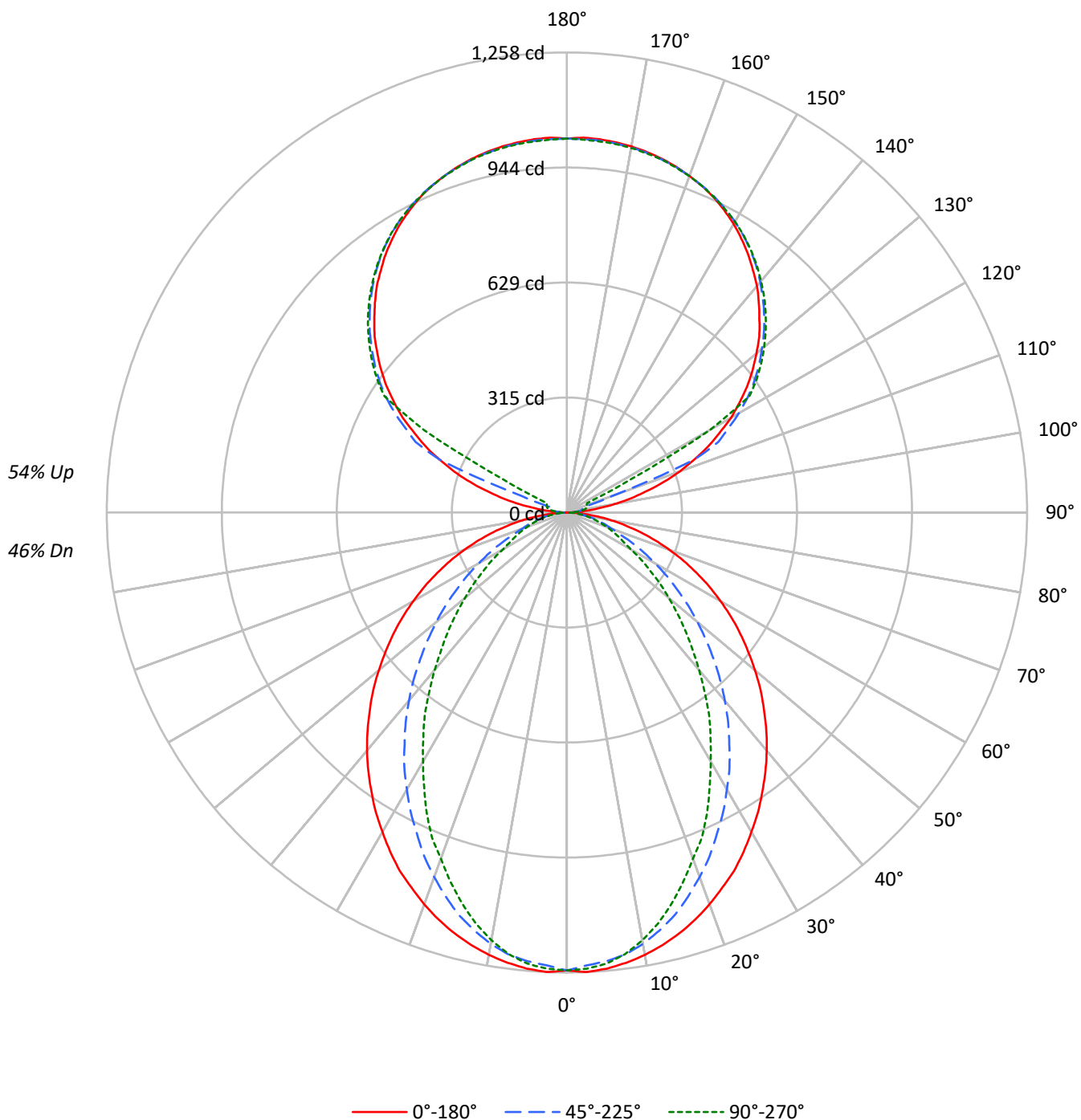
Lumens per Lamp: N/A
Luminaire Lumens: 5574.5 lumens
Efficiency: N/A
Efficacy: 119.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.84' x L: 3.28' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 46.6
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.983
Total Harmonic Distortion (THDi): 0.073
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P907977

CATALOG NUMBER: DFN2DIP-HX3F0-030D030US840-RLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P907977

CATALOG NUMBER: DFN2DIP-HX3F0-030D030US840-RLLONL

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	50	30	10
RCR																				
0	106	106	106	106	98	98	98	98	81	81	81	66	66	66	53	53	53			46
1	97	93	90	86	89	86	83	80	72	70	68	59	58	56	47	46	45			40
2	89	82	76	71	82	76	70	66	63	60	57	52	50	48	42	40	39			34
3	81	72	65	60	75	67	61	56	56	52	48	47	43	41	38	35	34			29
4	75	64	57	51	68	60	53	48	50	45	41	42	38	35	34	31	29			26
5	69	58	50	44	63	53	46	41	45	40	36	38	34	31	31	28	26			23
6	63	52	44	38	58	48	41	36	41	36	32	34	30	27	28	25	23			20
7	59	47	39	34	54	44	37	32	37	32	28	31	27	24	26	23	21			18
8	55	43	35	30	50	40	33	28	34	29	25	29	25	22	24	21	19			16
9	51	39	32	27	47	36	30	25	31	26	22	27	23	20	22	19	17			15
10	48	36	29	24	44	33	27	23	29	24	20	25	21	18	20	18	15			13

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1450	1450	1450
5°	1452	1426	1436
10°	1437	1397	1388
15°	1417	1350	1315
20°	1390	1286	1226
25°	1362	1213	1140
30°	1326	1139	1031
35°	1290	1060	935
40°	1253	978	826
45°	1211	887	726
50°	1167	795	629
55°	1120	697	536
60°	1067	595	441
65°	1006	491	395
70°	931	395	357
75°	837	346	323
80°	702	287	277
85°	480	187	204

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1211 cd/sqm

TEST NUMBER: P907977

CATALOG NUMBER: DFN2DIP-HX3F0-030D030US840-RLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	117.4	2.1
10°-20°	322.1	5.8
20°-30°	452.3	8.1
30°-40°	493.0	8.8
40°-50°	453.1	8.1
50°-60°	355.9	6.4
60°-70°	231.6	4.2
70°-80°	119.2	2.1
80°-90°	32.2	0.6
90°-100°	33.7	0.6
100°-110°	125.7	2.3
110°-120°	333.3	6.0
120°-130°	552.9	9.9
130°-140°	587.3	10.5
140°-150°	545.8	9.8
150°-160°	438.8	7.9
160°-170°	282.8	5.1
170°-180°	97.3	1.7
0°-30°	891.8	16.0
0°-40°	1384.8	24.8
0°-60°	2193.8	39.4
0°-90°	2576.9	46.2
90°-120°	492.7	8.8
90°-150°	2178.7	39.1
90°-180°	2998.0	53.8
0°-180°	5574.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1252	1252	1252	1252	1252	
5°	1252	1246	1232	1242	1238	119
15°	1191	1178	1140	1118	1107	336
25°	1081	1045	970	924	906	497
35°	932	874	774	703	678	583
45°	762	686	567	486	459	588
55°	579	491	368	300	279	517
65°	391	299	197	159	155	388
75°	208	129	91	83	82	220
85°	49	25	22	22	22	56
90°	1	9	15	19	20	5
95°	48	24	29	33	32	57
105°	225	247	45	53	56	240
115°	425	438	456	114	61	419
125°	602	611	625	630	633	536
135°	744	756	763	770	769	575
145°	863	863	875	880	877	540
155°	951	944	953	957	952	438
165°	1002	997	1000	1005	1000	283
175°	1025	1020	1021	1026	1019	98
180°	1022	1022	1022	1022	1022	

TEST NUMBER: P907977

CATALOG NUMBER: DFN2DIP-HX3F0-030D030US840-RLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1252.1	1252.1	1252.1	1252.1	1252.1
2.5°	1257.8	1252.1	1239.6	1251.0	1248.8
5°	1252.1	1246.5	1231.7	1241.9	1238.5
7.5°	1241.9	1235.2	1219.3	1223.8	1218.1
10°	1228.3	1220.4	1197.8	1194.3	1187.6
12.5°	1211.3	1201.1	1170.5	1163.8	1151.2
15°	1190.9	1178.4	1139.9	1118.4	1107.1
17.5°	1167.1	1149.0	1101.4	1076.5	1058.3
20°	1139.9	1117.2	1060.6	1032.4	1007.3
22.5°	1110.5	1084.4	1018.7	980.2	963.2
25°	1081.1	1044.7	970.0	923.5	906.5
27.5°	1045.9	1007.3	924.6	871.4	845.3
30°	1008.6	965.4	874.7	817.1	786.4
32.5°	972.2	920.1	827.3	759.2	730.8
35°	931.5	873.6	774.0	702.6	677.6
37.5°	891.8	829.4	724.1	645.8	617.6
40°	849.9	781.9	672.0	591.5	562.1
42.5°	806.8	734.4	619.9	535.9	507.7
45°	761.5	685.5	566.6	486.0	458.9
47.5°	718.4	638.0	515.6	435.1	410.2
50°	670.9	590.4	465.7	387.5	363.8
52.5°	624.3	539.4	418.2	343.4	321.8
55°	579.0	490.6	368.2	300.3	278.8
57.5°	532.6	441.9	324.2	260.6	242.5
60°	484.9	394.4	277.6	219.8	201.8
62.5°	438.6	347.9	237.9	183.6	174.6
65°	390.9	299.1	197.1	158.6	155.2
67.5°	345.7	253.8	158.6	139.4	135.9
70°	298.0	209.6	131.4	120.1	115.5
72.5°	252.7	168.7	109.9	100.9	98.6
75°	208.4	129.2	90.7	82.7	81.6
77.5°	164.3	91.7	71.4	66.9	64.5
80°	123.5	65.7	54.3	49.9	49.9
82.5°	86.0	44.2	37.4	35.1	35.1
85°	48.7	24.8	21.5	21.5	21.5
87.5°	18.2	9.0	9.0	8.0	8.0
90°	0.7	8.9	14.7	18.6	19.9
92.5°	18.6	15.6	17.8	19.3	19.9
95°	48.1	23.6	28.8	32.6	31.8
97.5°	86.5	26.0	37.7	40.0	40.7
100°	131.0	29.6	42.2	48.1	49.6
102.5°	179.8	178.3	43.6	51.7	54.0
105°	224.9	247.1	45.1	53.2	56.2
107.5°	277.4	295.9	46.7	54.7	57.8
110°	327.8	343.3	129.5	55.5	58.5

TEST NUMBER: P907977

CATALOG NUMBER: DFN2DIP-HX3F0-030D030US840-RLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	375.2	388.4	375.9	57.0	59.2
115°	425.4	438.0	456.5	113.9	60.7
117.5°	469.1	483.8	496.4	390.6	196.8
120°	517.9	529.0	542.3	551.2	451.3
122.5°	559.3	571.2	586.0	590.4	591.2
125°	601.5	611.1	625.2	630.4	632.6
127.5°	640.0	650.3	661.5	668.8	669.5
130°	676.2	688.1	696.2	704.3	703.7
132.5°	713.2	722.9	730.9	737.6	736.9
135°	744.3	756.2	762.8	770.2	768.7
137.5°	776.8	785.7	793.1	800.5	798.3
140°	808.6	814.6	822.6	829.3	825.7
142.5°	835.4	840.5	850.1	856.0	852.3
145°	863.4	862.6	875.3	880.4	876.7
147.5°	887.8	885.6	898.2	901.8	898.9
150°	911.5	906.4	918.2	922.5	918.9
152.5°	931.4	925.5	936.7	941.1	935.9
155°	950.7	944.1	952.9	957.4	951.5
157.5°	966.2	960.4	967.0	972.2	966.2
160°	979.6	975.1	979.6	984.0	978.8
162.5°	991.4	986.9	990.7	995.8	989.2
165°	1001.7	997.3	999.6	1004.7	999.6
167.5°	1009.9	1005.4	1007.6	1012.9	1006.2
170°	1016.5	1012.1	1013.6	1018.8	1012.1
172.5°	1021.0	1016.5	1018.0	1023.2	1016.5
175°	1024.6	1019.5	1021.0	1026.1	1018.8
177.5°	1026.1	1021.0	1021.8	1026.9	1020.3
180°	1022.5	1022.5	1022.5	1022.5	1022.5

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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	8.03	8.83	9.03	9.83	11.16	4.01	4.81	5.00	5.81	7.14
	3H	9.70	10.42	10.71	11.43	12.77	5.19	5.91	6.20	6.92	8.26
	4H	10.30	10.98	11.32	11.99	13.35	5.64	6.31	6.65	7.33	8.68
	6H	10.72	11.34	11.74	12.36	13.72	5.95	6.57	6.98	7.59	8.96
	8H	10.84	11.43	11.87	12.46	13.83	6.04	6.63	7.07	7.67	9.03
	12H	10.89	11.46	11.93	12.49	13.87	6.08	6.64	7.12	7.67	9.06
4H	2H	8.05	8.72	9.07	9.74	11.09	4.59	5.27	5.62	6.29	7.64
	3H	9.86	10.43	10.90	11.47	12.84	5.94	6.50	6.97	7.54	8.91
	4H	10.55	11.06	11.59	12.10	13.49	6.48	6.99	7.52	8.03	9.42
	6H	11.05	11.50	12.10	12.55	13.94	6.89	7.33	7.94	8.39	9.78
	8H	11.22	11.64	12.28	12.69	14.09	7.02	7.43	8.07	8.48	9.88
	12H	11.31	11.69	12.38	12.75	14.16	7.08	7.45	8.15	8.52	9.92
8H	4H	10.51	10.93	11.56	11.98	13.38	6.75	7.17	7.80	8.22	9.62
	6H	11.07	11.41	12.14	12.50	13.90	7.26	7.61	8.34	8.70	10.10
	8H	11.28	11.58	12.36	12.66	14.07	7.45	7.75	8.53	8.83	10.25
	12H	11.41	11.67	12.50	12.75	14.21	7.57	7.83	8.65	8.90	10.36
12H	4H	10.46	10.84	11.53	11.90	13.31	6.76	7.13	7.82	8.19	9.60
	6H	11.04	11.34	12.13	12.42	13.84	7.31	7.61	8.39	8.69	10.11
	8H	11.26	11.52	12.34	12.59	14.05	7.52	7.78	8.60	8.85	10.31