

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: P918829

Luminaire Tested: DFN2DIP-HX2F0-040D020US935-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P918829
REPORT IS A COMBINATION OF REPORTS P900676 AND P897595
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX2F0-040D020US935-RLLONL
Description: 2 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

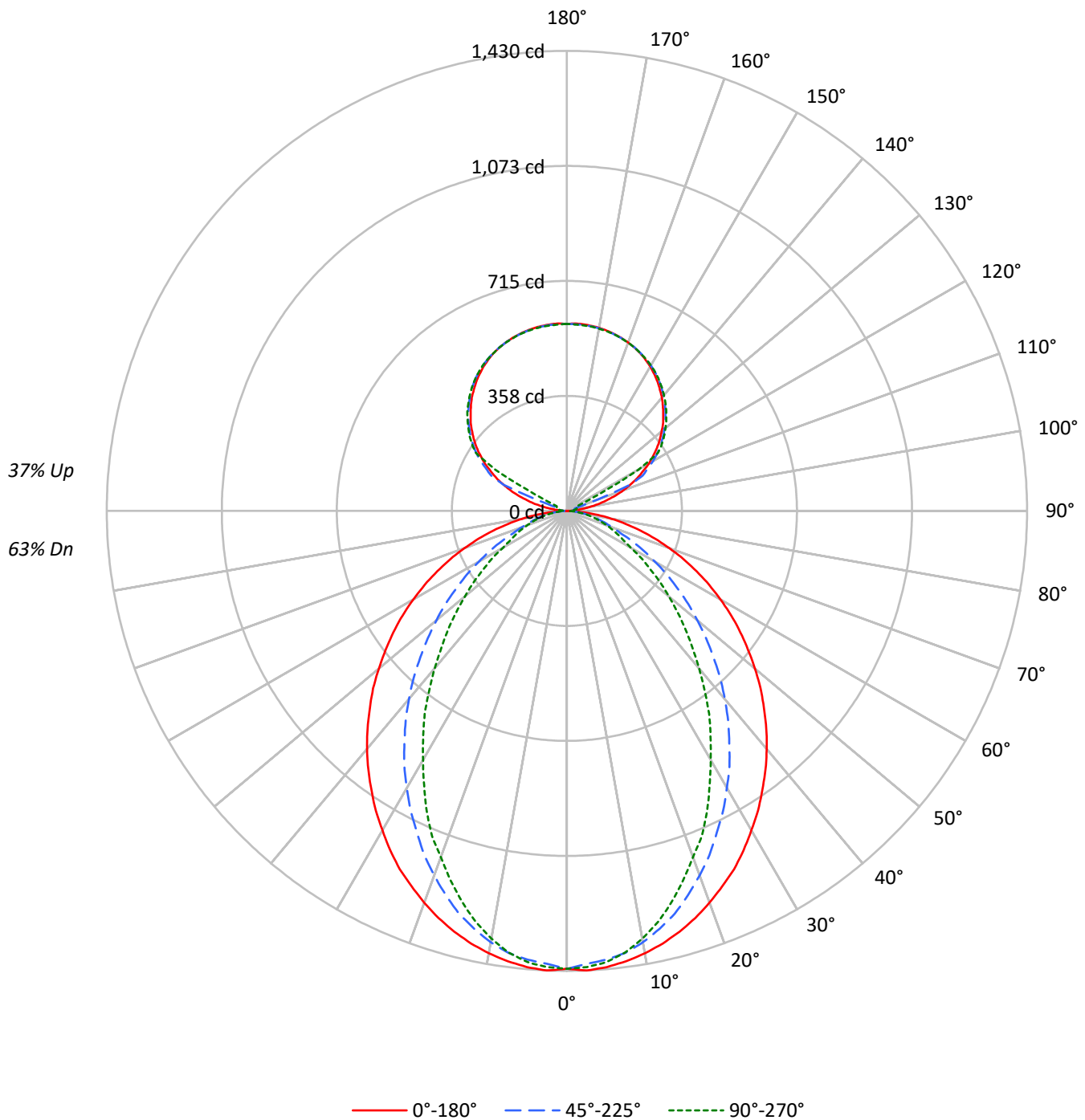
Lumens per Lamp: N/A
Luminaire Lumens: 4632.1 lumens
Efficiency: N/A
Efficacy: 90.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 1.99' x L: 2.3' x H: 0.1')
CIE Type: Semi-Direct

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: P918829

CATALOG NUMBER: DFN2DIP-HX2F0-040D020US935-RLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P918829

CATALOG NUMBER: DFN2DIP-HX2F0-040D020US935-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
RCR																	
0	110	110	110	110	103	103	103	103	91	91	91	79	79	79	68	68	68
1	101	97	93	90	95	91	88	85	80	78	76	71	69	67	61	60	59
2	93	86	80	75	87	81	75	71	71	67	64	63	60	57	55	53	51
3	85	76	69	63	80	72	65	60	63	58	54	56	52	49	49	46	44
4	78	68	60	54	73	64	57	52	57	51	47	50	46	43	44	41	38
5	72	61	53	47	67	57	50	45	51	45	41	46	41	37	40	37	34
6	67	55	47	41	62	52	45	39	46	41	36	41	37	33	37	33	30
7	62	50	42	36	58	47	40	35	42	36	32	38	33	30	34	30	27
8	58	45	38	32	54	43	36	31	39	33	29	35	30	27	31	27	24
9	54	42	34	29	51	40	33	28	36	30	26	32	27	24	29	25	22
10	50	38	31	26	47	37	30	25	33	28	24	30	25	22	27	23	20

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3354	3354	3354
5°	3354	3293	3316
10°	3315	3220	3201
15°	3264	3106	3029
20°	3199	2952	2820
25°	3131	2780	2617
30°	3043	2606	2364
35°	2956	2419	2140
40°	2867	2226	1886
45°	2764	2013	1655
50°	2657	1798	1430
55°	2545	1571	1215
60°	2416	1334	994
65°	2266	1094	888
70°	2085	871	795
75°	1855	752	711
80°	1527	608	599
85°	1000	377	421

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2764 cd/sqm

TEST NUMBER: P918829

CATALOG NUMBER: DFN2DIP-HX2F0-040D020US935-RLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	133.4	2.9
10°-20°	366.2	7.9
20°-30°	514.2	11.1
30°-40°	560.5	12.1
40°-50°	515.1	11.1
50°-60°	404.5	8.7
60°-70°	263.3	5.7
70°-80°	135.6	2.9
80°-90°	35.6	0.8
90°-100°	19.2	0.4
100°-110°	71.4	1.5
110°-120°	189.5	4.1
120°-130°	314.2	6.8
130°-140°	333.8	7.2
140°-150°	310.2	6.7
150°-160°	249.4	5.4
160°-170°	160.7	3.5
170°-180°	55.3	1.2
0°-30°	1013.8	21.9
0°-40°	1574.2	34.0
0°-60°	2493.9	53.8
0°-90°	2928.4	63.2
90°-120°	280.0	6.0
90°-150°	1238.3	26.7
90°-180°	1704.0	36.8
0°-180°	4632.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1423	1423	1423	1423	1423	
5°	1423	1417	1400	1412	1408	135
15°	1354	1340	1296	1271	1259	382
25°	1229	1188	1103	1050	1030	565
35°	1059	993	880	799	770	663
45°	866	779	644	553	522	668
55°	658	558	419	341	317	588
65°	444	340	224	180	176	441
75°	237	147	103	94	93	251
85°	55	28	24	24	24	64
90°	0	5	8	10	11	4
95°	27	13	16	18	18	32
105°	128	140	26	30	32	137
115°	242	249	260	65	34	238
125°	342	347	355	358	360	305
135°	423	430	434	438	437	327
145°	491	490	498	500	498	307
155°	540	537	542	544	541	249
165°	569	567	568	571	568	161
175°	582	580	580	583	579	55
180°	581	581	581	581	581	

TEST NUMBER: P918829

CATALOG NUMBER: DFN2DIP-HX2F0-040D020US935-RLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1423.4	1423.4	1423.4	1423.4	1423.4
2.5°	1429.9	1423.4	1409.2	1422.2	1419.5
5°	1423.4	1416.9	1400.2	1411.8	1408.0
7.5°	1411.8	1404.1	1386.1	1391.1	1384.7
10°	1396.4	1387.3	1361.6	1357.6	1350.0
12.5°	1377.1	1365.5	1330.6	1322.9	1308.7
15°	1353.8	1339.6	1295.9	1271.4	1258.6
17.5°	1326.8	1306.1	1252.0	1223.7	1203.1
20°	1295.9	1270.1	1205.7	1173.5	1145.1
22.5°	1262.4	1232.8	1158.0	1114.2	1095.0
25°	1228.9	1187.7	1102.6	1049.9	1030.4
27.5°	1189.0	1145.1	1051.1	990.6	960.9
30°	1146.5	1097.4	994.4	928.8	894.0
32.5°	1105.3	1045.9	940.4	863.1	830.8
35°	1058.9	993.2	879.9	798.7	770.2
37.5°	1013.8	942.9	823.1	734.2	702.1
40°	966.1	888.9	763.9	672.4	638.9
42.5°	917.1	834.7	704.6	609.2	577.1
45°	865.6	779.3	644.1	552.6	521.7
47.5°	816.7	725.3	586.2	494.6	466.3
50°	762.6	671.1	529.4	440.5	413.5
52.5°	709.7	613.1	475.4	390.3	365.8
55°	658.2	557.8	418.6	341.4	316.9
57.5°	605.5	502.4	368.4	296.3	275.7
60°	551.3	448.2	315.6	249.9	229.4
62.5°	498.6	395.5	270.4	208.7	198.5
65°	444.4	340.0	224.1	180.4	176.4
67.5°	393.0	288.5	180.4	158.4	154.5
70°	338.8	238.3	149.4	136.6	131.3
72.5°	287.3	191.9	124.9	114.7	112.1
75°	236.9	146.8	103.1	94.0	92.8
77.5°	186.8	104.3	81.2	76.0	73.4
80°	140.3	74.7	61.7	56.7	56.7
82.5°	97.9	50.3	42.5	39.9	39.9
85°	55.4	28.3	24.5	24.5	24.5
87.5°	20.7	10.2	10.2	9.0	9.0
90°	0.4	5.1	8.4	10.5	11.4
92.5°	10.5	8.9	10.1	10.9	11.4
95°	27.3	13.4	16.4	18.5	18.1
97.5°	49.2	14.7	21.4	22.7	23.2
100°	74.5	16.8	23.9	27.3	28.2
102.5°	102.2	101.3	24.8	29.4	30.7
105°	127.9	140.4	25.7	30.2	31.9
107.5°	157.7	168.2	26.5	31.1	32.8
110°	186.3	195.1	73.6	31.6	33.2



TEST NUMBER: P918829

CATALOG NUMBER: DFN2DIP-HX2F0-040D020US935-RLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	213.2	220.8	213.6	32.4	33.7
115°	241.8	248.9	259.5	64.7	34.5
117.5°	266.6	275.0	282.1	222.1	111.8
120°	294.4	300.7	308.2	313.3	256.5
122.5°	317.9	324.6	333.0	335.5	336.0
125°	341.9	347.3	355.3	358.3	359.6
127.5°	363.8	369.6	376.0	380.1	380.6
130°	384.3	391.1	395.7	400.4	399.9
132.5°	405.4	410.9	415.4	419.2	418.9
135°	423.1	429.8	433.5	437.8	437.0
137.5°	441.5	446.6	450.8	455.0	453.7
140°	459.6	463.0	467.6	471.4	469.3
142.5°	474.8	477.8	483.2	486.5	484.4
145°	490.8	490.3	497.5	500.4	498.3
147.5°	504.6	503.3	510.5	512.6	510.9
150°	518.1	515.1	521.9	524.3	522.3
152.5°	529.4	526.1	532.4	534.9	531.9
155°	540.4	536.6	541.7	544.2	540.8
157.5°	549.2	545.9	549.7	552.6	549.2
160°	556.8	554.2	556.8	559.3	556.4
162.5°	563.4	560.9	563.1	566.0	562.2
165°	569.4	566.9	568.1	571.1	568.1
167.5°	574.0	571.4	572.7	575.7	571.9
170°	577.8	575.2	576.1	579.0	575.2
172.5°	580.3	577.8	578.7	581.6	577.8
175°	582.4	579.5	580.3	583.2	579.0
177.5°	583.2	580.3	580.7	583.7	579.9
180°	581.2	581.2	581.2	581.2	581.2

TEST NUMBER: P918829

CATALOG NUMBER: DFN2DIP-HX2F0-040D020US935-RLONL

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	12.37	13.32	13.21	14.18	15.25	8.35	9.30	9.19	10.16	11.23
	3H	14.03	14.88	14.88	15.75	16.85	9.53	10.38	10.39	11.25	12.35
	4H	14.63	15.43	15.50	16.30	17.41	9.97	10.78	10.85	11.65	12.76
	6H	15.03	15.77	15.92	16.65	17.78	10.29	11.03	11.17	11.91	13.03
	8H	15.15	15.85	16.04	16.75	17.88	10.37	11.08	11.26	11.98	13.10
	12H	15.21	15.88	16.10	16.77	17.92	10.41	11.08	11.31	11.98	13.12
4H	2H	12.40	13.20	13.27	14.07	15.18	8.95	9.75	9.82	10.62	11.73
	3H	14.21	14.87	15.09	15.78	16.91	10.29	10.95	11.17	11.86	12.99
	4H	14.88	15.49	15.78	16.39	17.55	10.82	11.43	11.72	12.33	13.49
	6H	15.38	15.90	16.30	16.83	17.99	11.23	11.75	12.15	12.68	13.84
	8H	15.55	16.03	16.46	16.96	18.12	11.35	11.84	12.27	12.76	13.93
	12H	15.63	16.07	16.57	17.01	18.18	11.41	11.85	12.35	12.79	13.97
8H	4H	14.86	15.35	15.77	16.27	17.43	11.10	11.59	12.01	12.51	13.68
	6H	15.40	15.80	16.34	16.77	17.93	11.60	12.00	12.54	12.96	14.13
	8H	15.60	15.96	16.55	16.91	18.10	11.78	12.13	12.73	13.09	14.27
	12H	15.73	16.04	16.68	16.99	18.22	11.89	12.20	12.84	13.15	14.38
12H	4H	14.81	15.25	15.75	16.19	17.36	11.11	11.54	12.04	12.48	13.66
	6H	15.37	15.73	16.33	16.69	17.87	11.64	12.00	12.59	12.95	14.14
	8H	15.58	15.90	16.54	16.84	18.08	11.84	12.16	12.80	13.10	14.34