

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: P927053

Luminaire Tested: DFN2DIP-HX4F0-090D040US830-RLLFLL

Issue Date: 12/12/2024

Test Information

Test Method: LM-79-2019
Report Number: P927053
REPORT IS A COMBINATION OF REPORTS P899310 AND P896187
Test Lab: INNOVATION CENTER
Issue Date: 12/12/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX4F0-090D040US830-RLLFLL
Description: 4 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

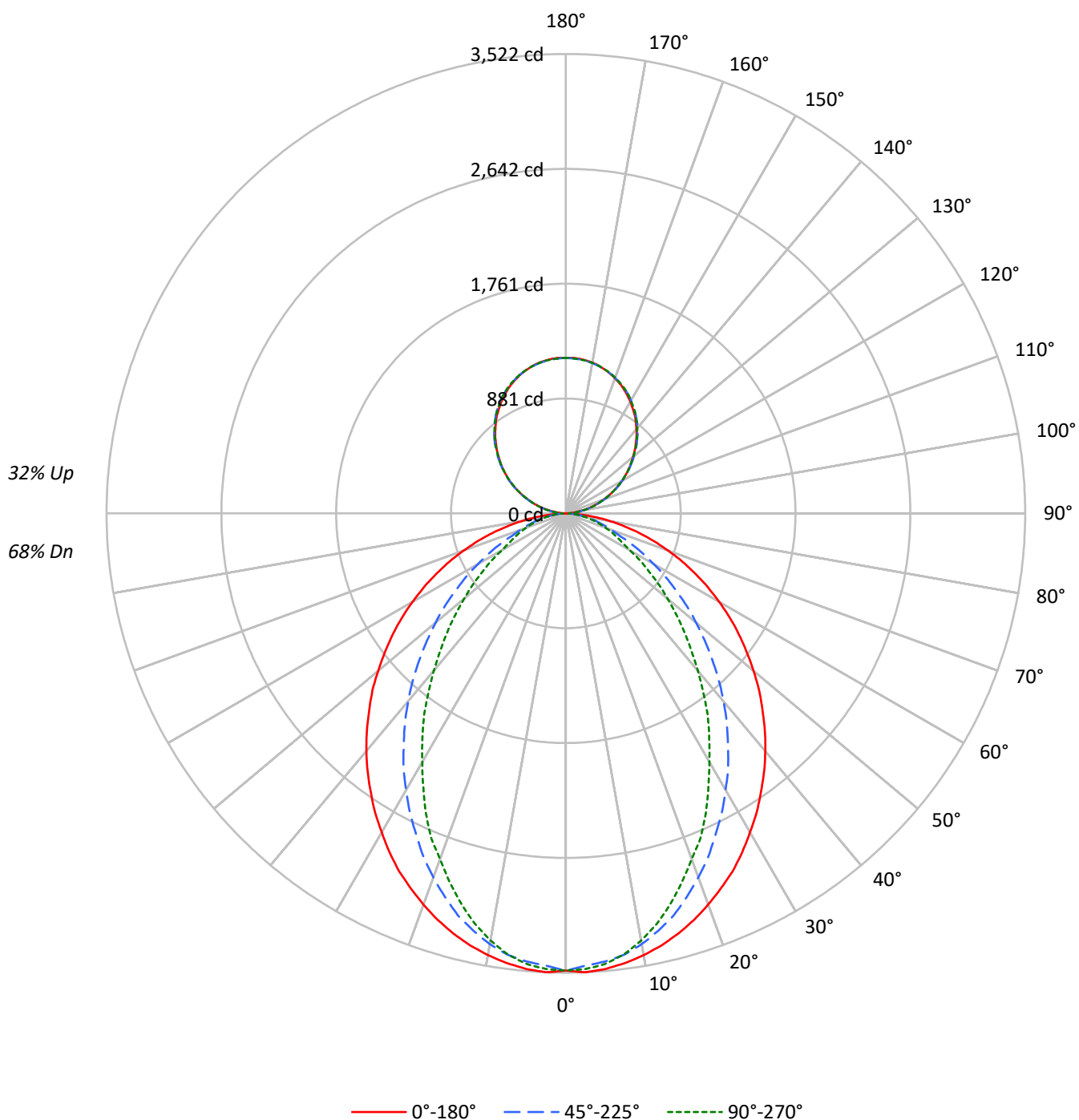
Lumens per Lamp: N/A
Luminaire Lumens: 10546.6 lumens
Efficiency: N/A
Efficacy: 88.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.54' x L: 4.09' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 118.8
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9821
Total Harmonic Distortion (THDi): 0.08
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P927053

CATALOG NUMBER: DFN2DIP-HX4F0-090D040US830-RLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P927053

CATALOG NUMBER: DFN2DIP-HX4F0-090D040US830-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	112	112	112	112	105	105	105	105	94	94	94	83	83	83	73	73	73
1	103	98	95	91	97	93	90	87	83	81	78	74	72	70	66	64	63
2	94	87	81	76	89	82	77	72	74	70	66	66	63	60	59	56	54
3	86	77	70	64	81	73	67	61	66	61	56	59	55	51	52	49	47
4	79	69	61	55	75	65	58	53	59	53	49	53	48	45	47	44	41
5	73	62	53	48	69	59	51	46	53	47	43	48	43	39	43	39	36
6	68	56	48	42	64	53	46	40	48	42	38	44	39	35	39	35	32
7	63	51	43	37	59	48	41	36	44	38	33	40	35	31	36	32	29
8	58	46	38	33	55	44	37	32	40	34	30	37	32	28	33	29	26
9	55	42	35	30	52	41	34	29	37	31	27	34	29	25	31	27	24
10	51	39	32	27	48	37	31	26	34	29	25	32	27	23	29	25	22

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2607	2607	2607
5°	2611	2566	2582
10°	2586	2516	2498
15°	2550	2433	2368
20°	2503	2318	2209
25°	2455	2190	2055
30°	2391	2059	1860
35°	2328	1917	1689
40°	2263	1771	1492
45°	2188	1608	1314
50°	2111	1444	1140
55°	2031	1269	973
60°	1937	1086	801
65°	1830	899	721
70°	1700	726	653
75°	1537	640	594
80°	1300	538	516
85°	909	360	388

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2188 cd/sqm

TEST NUMBER: P927053

CATALOG NUMBER: DFN2DIP-HX4F0-090D040US830-RLFL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	328.6	3.1
10°-20°	902.0	8.6
20°-30°	1266.4	12.0
30°-40°	1380.4	13.1
40°-50°	1268.7	12.0
50°-60°	996.4	9.4
60°-70°	648.6	6.1
70°-80°	333.9	3.2
80°-90°	88.6	0.8
90°-100°	73.8	0.7
100°-110°	234.4	2.2
110°-120°	401.2	3.8
120°-130°	527.6	5.0
130°-140°	592.2	5.6
140°-150°	580.7	5.5
150°-160°	487.2	4.6
160°-170°	323.1	3.1
170°-180°	112.9	1.1
0°-30°	2496.9	23.7
0°-40°	3877.3	36.8
0°-60°	6142.5	58.2
0°-90°	7213.5	68.4
90°-120°	709.4	6.7
90°-150°	2409.9	22.9
90°-180°	3333.0	31.6
0°-180°	10546.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3506	3506	3506	3506	3506	
5°	3506	3490	3449	3477	3468	332
15°	3334	3300	3192	3132	3100	940
25°	3027	2925	2716	2586	2538	1392
35°	2608	2446	2167	1967	1897	1632
45°	2132	1919	1586	1361	1285	1647
55°	1621	1374	1031	841	781	1449
65°	1095	838	552	444	435	1085
75°	584	362	254	232	229	617
85°	136	70	60	60	60	156
90°	1	13	35	33	34	10
95°	52	63	64	64	63	58
105°	216	219	221	223	223	228
115°	402	408	406	406	402	398
125°	586	594	592	588	587	523
135°	757	768	771	770	767	585
145°	920	927	932	934	930	575
155°	1051	1054	1058	1063	1059	484
165°	1144	1143	1143	1150	1145	323
175°	1190	1187	1185	1192	1186	113
180°	1192	1192	1192	1192	1192	

TEST NUMBER: P927053

CATALOG NUMBER: DFN2DIP-HX4F0-090D040US830-RLFL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3505.8	3505.8	3505.8	3505.8	3505.8
2.5°	3521.7	3505.8	3470.8	3502.8	3496.4
5°	3505.8	3490.0	3448.6	3477.2	3467.7
7.5°	3477.2	3458.3	3413.9	3426.4	3410.5
10°	3439.2	3416.9	3353.7	3343.9	3325.0
12.5°	3391.7	3363.1	3277.3	3258.4	3223.4
15°	3334.5	3299.5	3191.8	3131.5	3099.9
17.5°	3267.8	3217.0	3083.7	3014.0	2963.2
20°	3191.8	3128.2	2969.5	2890.5	2820.4
22.5°	3109.3	3036.3	2852.1	2744.4	2697.0
25°	3026.8	2925.1	2715.8	2585.8	2538.1
27.5°	2928.5	2820.4	2588.9	2439.8	2366.7
30°	2823.8	2703.0	2449.2	2287.6	2201.8
32.5°	2722.1	2576.0	2316.2	2125.7	2046.3
35°	2608.1	2446.2	2167.1	1967.2	1897.2
37.5°	2497.0	2322.3	2027.4	1808.3	1729.2
40°	2379.5	2189.3	1881.3	1656.2	1573.7
42.5°	2259.0	2056.1	1735.5	1500.6	1421.5
45°	2132.1	1919.4	1586.4	1360.9	1284.8
47.5°	2011.6	1786.4	1443.7	1218.2	1148.5
50°	1878.3	1653.1	1304.0	1084.9	1018.6
52.5°	1748.1	1510.1	1170.8	961.4	901.1
55°	1621.1	1373.7	1031.0	840.9	780.6
57.5°	1491.2	1237.4	907.5	729.8	679.0
60°	1357.9	1104.0	777.3	615.6	564.8
62.5°	1228.0	974.2	666.2	514.0	488.8
65°	1094.6	837.5	552.0	444.3	434.6
67.5°	967.8	710.6	444.3	390.1	380.7
70°	834.5	587.1	368.0	336.3	323.5
72.5°	707.5	472.6	307.6	282.4	276.1
75°	583.7	361.5	253.8	231.6	228.6
77.5°	460.1	256.8	199.9	187.2	180.8
80°	345.7	184.2	152.1	139.7	139.7
82.5°	241.0	123.8	104.7	98.3	98.3
85°	136.3	69.7	60.2	60.2	60.2
87.5°	50.8	25.3	25.3	22.2	22.2
90°	1.0	12.9	35.2	33.1	34.1
92.5°	22.2	30.2	31.3	32.3	32.3
95°	52.5	62.6	64.4	64.4	62.6
97.5°	87.4	96.7	100.7	100.7	100.7
100°	127.6	135.9	138.7	138.7	137.7
102.5°	170.0	176.2	180.1	181.1	180.1
105°	216.4	219.2	221.4	223.2	223.2
107.5°	262.4	266.7	266.7	267.4	262.4
110°	307.0	312.7	312.7	312.7	309.9

TEST NUMBER: P927053

CATALOG NUMBER: DFN2DIP-HX4F0-090D040US830-RLFL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	355.1	361.3	360.1	357.3	355.1
115°	402.5	408.4	406.5	405.5	402.5
117.5°	449.7	457.6	452.6	449.7	446.8
120°	497.2	505.0	497.2	497.2	493.9
122.5°	540.2	550.3	545.3	542.4	540.2
125°	585.6	594.5	591.7	588.4	587.4
127.5°	629.8	640.9	636.9	632.6	629.8
130°	671.1	684.1	682.3	680.1	676.1
132.5°	717.4	727.5	728.3	723.2	720.4
135°	757.4	768.5	770.7	769.6	766.7
137.5°	802.0	810.9	812.7	812.0	807.7
140°	841.1	850.1	855.1	855.1	851.2
142.5°	881.4	890.4	893.2	894.3	890.4
145°	919.5	926.7	932.4	933.5	929.6
147.5°	953.6	962.6	966.9	968.7	964.7
150°	988.9	995.0	999.0	1002.2	999.0
152.5°	1020.2	1026.2	1031.3	1035.2	1031.3
155°	1051.4	1054.3	1057.5	1062.6	1059.3
157.5°	1078.4	1080.5	1082.3	1089.5	1084.4
160°	1102.4	1104.6	1105.6	1111.8	1107.4
162.5°	1124.7	1124.7	1125.8	1132.6	1127.6
165°	1143.8	1142.7	1142.7	1149.8	1144.9
167.5°	1161.1	1157.8	1157.8	1165.0	1159.9
170°	1174.0	1171.1	1170.0	1177.2	1171.1
172.5°	1182.9	1180.1	1179.0	1186.2	1180.1
175°	1190.2	1187.3	1185.1	1192.3	1186.2
177.5°	1194.1	1191.2	1189.1	1195.2	1189.1
180°	1192.3	1192.3	1192.3	1192.3	1192.3

TEST NUMBER: P927053

CATALOG NUMBER: DFN2DIP-HX4F0-090D040US830-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	12.04	13.05	12.83	13.86	14.84	8.02	9.02	8.81	9.83	10.81
	3H	13.74	14.64	14.54	15.45	16.47	9.22	10.12	10.02	10.94	11.95
	4H	14.35	15.20	15.17	16.03	17.05	9.68	10.53	10.50	11.35	12.38
	6H	14.78	15.57	15.62	16.40	17.44	10.01	10.79	10.84	11.63	12.66
	8H	14.92	15.66	15.76	16.51	17.55	10.11	10.85	10.95	11.70	12.74
	12H	14.98	15.69	15.83	16.54	17.60	10.16	10.87	11.00	11.71	12.78
4H	2H	12.08	12.93	12.91	13.76	14.78	8.63	9.48	9.46	10.31	11.33
	3H	13.93	14.63	14.76	15.49	16.53	10.00	10.71	10.84	11.56	12.61
	4H	14.63	15.27	15.48	16.13	17.19	10.56	11.20	11.41	12.05	13.12
	6H	15.15	15.71	16.02	16.59	17.66	10.99	11.54	11.85	12.42	13.49
	8H	15.33	15.85	16.20	16.72	17.81	11.12	11.64	11.99	12.51	13.60
	12H	15.44	15.90	16.32	16.80	17.89	11.20	11.66	12.08	12.55	13.65
8H	4H	14.61	15.13	15.48	16.00	17.09	10.85	11.37	11.72	12.24	13.33
	6H	15.18	15.61	16.08	16.53	17.61	11.38	11.81	12.27	12.72	13.81
	8H	15.40	15.78	16.31	16.69	17.79	11.57	11.95	12.48	12.86	13.96
	12H	15.55	15.88	16.46	16.78	17.94	11.70	12.03	12.61	12.93	14.09
12H	4H	14.57	15.03	15.46	15.93	17.02	10.86	11.33	11.75	12.22	13.31
	6H	15.16	15.54	16.07	16.45	17.55	11.43	11.81	12.33	12.72	13.82
	8H	15.39	15.72	16.30	16.62	17.78	11.65	11.98	12.56	12.88	14.04