

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: P902672

Luminaire Tested: DFN2DIP-HX3F0-090D050US830-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P902672
REPORT IS A COMBINATION OF REPORTS P899242 AND P896089
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX3F0-090D050US830-RLLFLL
Description: 3 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

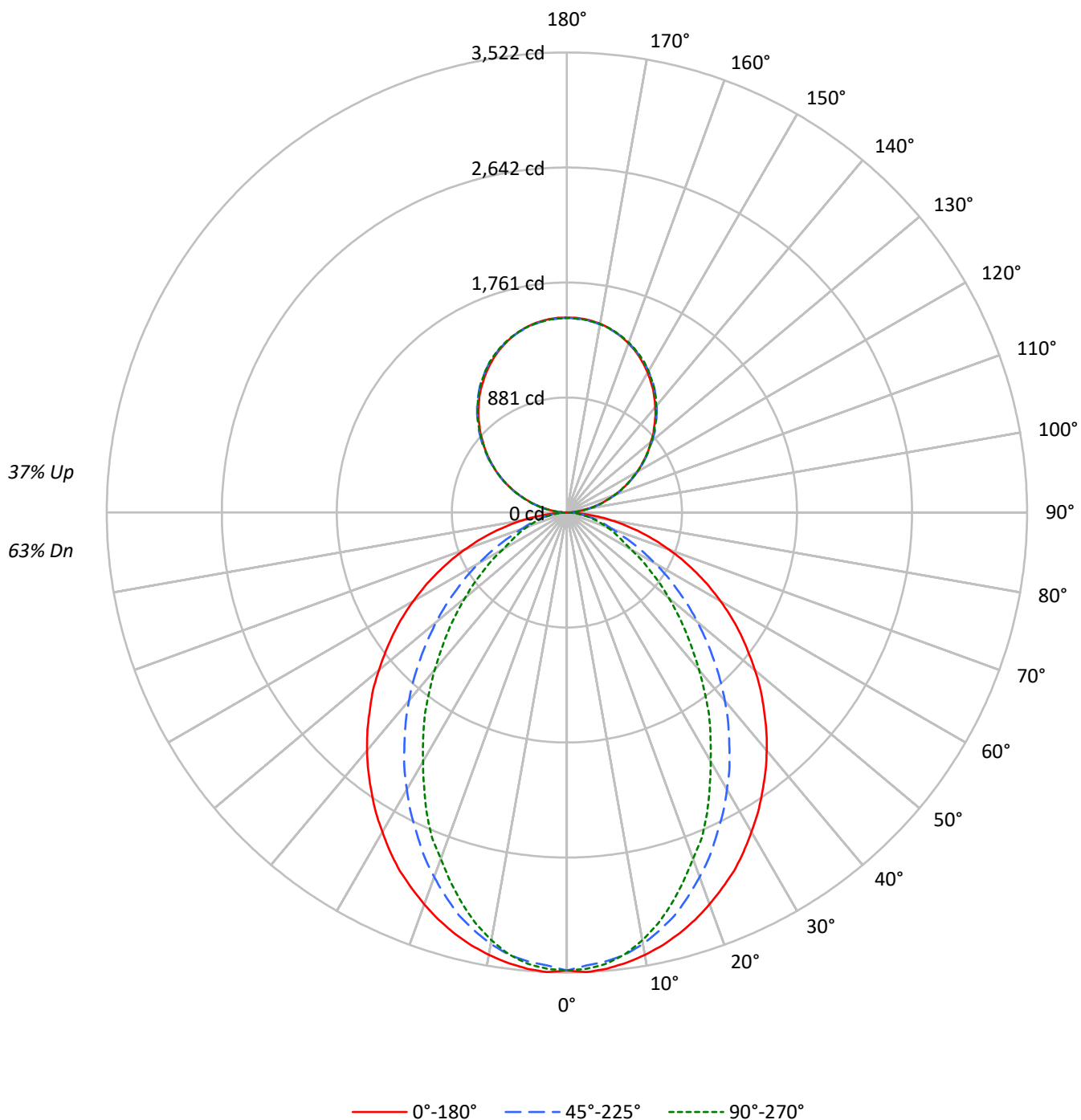
Lumens per Lamp: N/A
Luminaire Lumens: 11381.2 lumens
Efficiency: N/A
Efficacy: 88.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.84' x L: 3.28' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 129.3
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9968
Total Harmonic Distortion (THDi): 0.064
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P902672

CATALOG NUMBER: DFN2DIP-HX3F0-090D050US830-RLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P902672

CATALOG NUMBER: DFN2DIP-HX3F0-090D050US830-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	110	110	110	110	104	104	104	104	91	91	91	79	79	79	68	68	68
1	101	97	93	90	95	91	88	85	81	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	64	59	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	68	57	50	45	51	45	41	46	41	37	40	37	34
6	67	55	47	41	62	52	45	39	47	41	36	41	37	33	37	33	30
7	62	50	42	36	58	47	40	35	42	37	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	28	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°	4061	4061	4061
5°	4066	3994	4020
10°	4024	3913	3887
15°	3966	3781	3683
20°	3891	3600	3433
25°	3815	3397	3192
30°	3712	3190	2886
35°	3611	2968	2618
40°	3508	2738	2311
45°	3389	2483	2033
50°	3266	2227	1762
55°	3137	1952	1501
60°	2988	1667	1233
65°	2816	1376	1107
70°	2608	1105	999
75°	2345	968	904
80°	1966	803	777
85°	1343	522	570

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3389 cd/sqm

TEST NUMBER: P902672

CATALOG NUMBER: DFN2DIP-HX3F0-090D050US830-RLFL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	328.6	2.9
10°-20°	902.0	7.9
20°-30°	1266.4	11.1
30°-40°	1380.5	12.1
40°-50°	1268.8	11.1
50°-60°	996.5	8.8
60°-70°	648.6	5.7
70°-80°	333.9	2.9
80°-90°	89.5	0.8
90°-100°	92.2	0.8
100°-110°	293.0	2.6
110°-120°	501.5	4.4
120°-130°	659.5	5.8
130°-140°	740.3	6.5
140°-150°	725.9	6.4
150°-160°	609.0	5.4
160°-170°	403.9	3.5
170°-180°	141.2	1.2
0°-30°	2497.0	21.9
0°-40°	3877.5	34.1
0°-60°	6142.8	54.0
0°-90°	7214.7	63.4
90°-120°	886.7	7.8
90°-150°	3012.5	26.5
90°-180°	4167.0	36.6
0°-180°	11381.2	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°	3335	3300	3192	3132	3100	940
25°	3027	2925	2716	2586	2538	1392
35°	2608	2446	2167	1967	1897	1632
45°	2132	1920	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	16	44	41	43	11
95°	66	78	80	80	78	73
105°	270	274	277	279	279	285
115°	503	510	508	507	503	498
125°	732	743	740	736	734	654
135°	947	961	963	962	958	732
145°	1149	1158	1166	1167	1162	718
155°	1314	1318	1322	1328	1324	605
165°	1430	1428	1428	1438	1431	403
175°	1488	1484	1482	1490	1483	141
180°	1490	1490	1490	1490	1490	

TEST NUMBER: P902672

CATALOG NUMBER: DFN2DIP-HX3F0-090D050US830-RLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3506.0	3506.0	3506.0	3506.0	3506.0
2.5°	3521.8	3506.0	3470.9	3503.0	3496.5
5°	3506.0	3490.1	3448.8	3477.3	3467.9
7.5°	3477.3	3458.5	3414.1	3426.5	3410.7
10°	3439.3	3417.1	3353.8	3344.0	3325.2
12.5°	3391.8	3363.3	3277.4	3258.6	3223.5
15°	3334.6	3299.7	3191.9	3131.6	3100.0
17.5°	3268.0	3217.2	3083.8	3014.2	2963.4
20°	3191.9	3128.3	2969.7	2890.6	2820.6
22.5°	3109.4	3036.4	2852.2	2744.5	2697.1
25°	3027.0	2925.3	2715.9	2586.0	2538.2
27.5°	2928.7	2820.6	2589.0	2439.9	2366.8
30°	2824.0	2703.1	2449.3	2287.7	2201.9
32.5°	2722.3	2576.2	2316.3	2125.8	2046.4
35°	2608.2	2446.3	2167.2	1967.3	1897.2
37.5°	2497.1	2322.4	2027.5	1808.4	1729.3
40°	2379.6	2189.4	1881.4	1656.2	1573.8
42.5°	2259.1	2056.2	1735.6	1500.7	1421.5
45°	2132.2	1919.5	1586.5	1360.9	1284.9
47.5°	2011.7	1786.5	1443.8	1218.2	1148.6
50°	1878.4	1653.1	1304.1	1085.0	1018.6
52.5°	1748.1	1510.1	1170.8	961.4	901.2
55°	1621.2	1373.8	1031.0	840.9	780.6
57.5°	1491.3	1237.5	907.6	729.8	679.0
60°	1357.9	1104.1	777.3	615.7	564.9
62.5°	1228.0	974.2	666.2	514.1	488.8
65°	1094.7	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°	707.6	472.6	307.6	282.4	276.1
75°	583.7	361.6	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	123.9	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°	1.3	16.2	44.0	41.4	42.7
92.5°	27.9	37.7	39.1	40.4	40.4
95°	65.6	78.2	80.4	80.4	78.2
97.5°	109.1	120.8	125.8	125.8	125.8
100°	159.5	169.8	173.4	173.4	172.1
102.5°	212.5	220.2	225.1	226.5	225.1
105°	270.5	274.1	276.8	279.0	279.0
107.5°	328.0	333.4	333.4	334.3	328.0
110°	383.7	391.0	391.0	391.0	387.3

TEST NUMBER: P902672

CATALOG NUMBER: DFN2DIP-HX3F0-090D050US830-RLFL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	443.9	451.6	450.3	446.7	443.9
115°	503.2	510.5	508.2	506.9	503.2
117.5°	562.1	572.0	565.7	562.1	558.6
120°	621.4	631.3	621.4	621.4	617.4
122.5°	675.3	688.0	681.6	678.1	675.3
125°	732.0	743.2	739.6	735.6	734.2
127.5°	787.2	801.2	796.3	790.8	787.2
130°	839.0	855.1	852.8	850.2	845.2
132.5°	896.9	909.5	910.4	904.1	900.5
135°	946.8	960.6	963.4	962.1	958.5
137.5°	1002.5	1013.7	1016.0	1015.0	1009.7
140°	1051.4	1062.7	1068.9	1068.9	1064.0
142.5°	1101.7	1113.0	1116.6	1117.9	1113.0
145°	1149.4	1158.4	1165.5	1167.0	1162.0
147.5°	1192.1	1203.3	1208.7	1211.0	1206.0
150°	1236.1	1243.8	1248.7	1252.7	1248.7
152.5°	1275.3	1282.9	1289.1	1294.1	1289.1
155°	1314.3	1317.9	1321.9	1328.2	1324.2
157.5°	1348.0	1350.7	1352.9	1362.0	1355.7
160°	1378.1	1380.8	1382.1	1389.8	1384.4
162.5°	1406.0	1406.0	1407.3	1415.9	1409.6
165°	1429.8	1428.4	1428.4	1437.5	1431.2
167.5°	1451.3	1447.3	1447.3	1456.3	1450.0
170°	1467.5	1464.0	1462.6	1471.6	1464.0
172.5°	1478.8	1475.2	1473.9	1482.8	1475.2
175°	1487.8	1484.1	1481.5	1490.4	1482.8
177.5°	1492.7	1489.1	1486.4	1494.0	1486.4
180°	1490.4	1490.4	1490.4	1490.4	1490.4

TEST NUMBER: P902672

CATALOG NUMBER: DFN2DIP-HX3F0-090D050US830-RLFL

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	13.14	14.09	13.98	14.95	16.02	9.11	10.07	9.95	10.92	11.99
	3H	14.82	15.67	15.67	16.54	17.63	10.31	11.16	11.16	12.03	13.12
	4H	15.43	16.23	16.30	17.10	18.21	10.76	11.57	11.63	12.44	13.55
	6H	15.85	16.59	16.73	17.47	18.59	11.08	11.82	11.97	12.71	13.83
	8H	15.97	16.68	16.86	17.58	18.70	11.18	11.88	12.07	12.78	13.90
	12H	16.04	16.71	16.93	17.60	18.74	11.22	11.89	12.12	12.78	13.93
4H	2H	13.17	13.97	14.04	14.85	15.96	9.72	10.52	10.59	11.40	12.51
	3H	15.00	15.67	15.89	16.58	17.70	11.08	11.74	11.96	12.65	13.77
	4H	15.69	16.30	16.59	17.20	18.35	11.63	12.23	12.52	13.14	14.28
	6H	16.21	16.73	17.12	17.66	18.81	12.05	12.57	12.96	13.50	14.65
	8H	16.38	16.87	17.29	17.79	18.95	12.18	12.66	13.09	13.58	14.75
	12H	16.48	16.92	17.41	17.86	19.02	12.24	12.68	13.18	13.62	14.79
8H	4H	15.67	16.16	16.58	17.08	18.24	11.91	12.40	12.82	13.32	14.48
	6H	16.23	16.63	17.17	17.60	18.76	12.43	12.83	13.37	13.79	14.96
	8H	16.44	16.80	17.39	17.75	18.93	12.61	12.97	13.56	13.93	15.11
	12H	16.58	16.90	17.53	17.84	19.07	12.73	13.05	13.69	13.99	15.23
12H	4H	15.63	16.07	16.56	17.00	18.17	11.92	12.36	12.85	13.30	14.47
	6H	16.21	16.56	17.16	17.52	18.70	12.47	12.83	13.42	13.79	14.97
	8H	16.43	16.74	17.38	17.69	18.92	12.69	13.00	13.64	13.95	15.18