

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: P902470

Luminaire Tested: DFN2DIP-HX2F0-040D050US830-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P902470
REPORT IS A COMBINATION OF REPORTS P899185 AND P896039
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX2F0-040D050US830-FLLFLL
Description: 2 foot, Hexagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

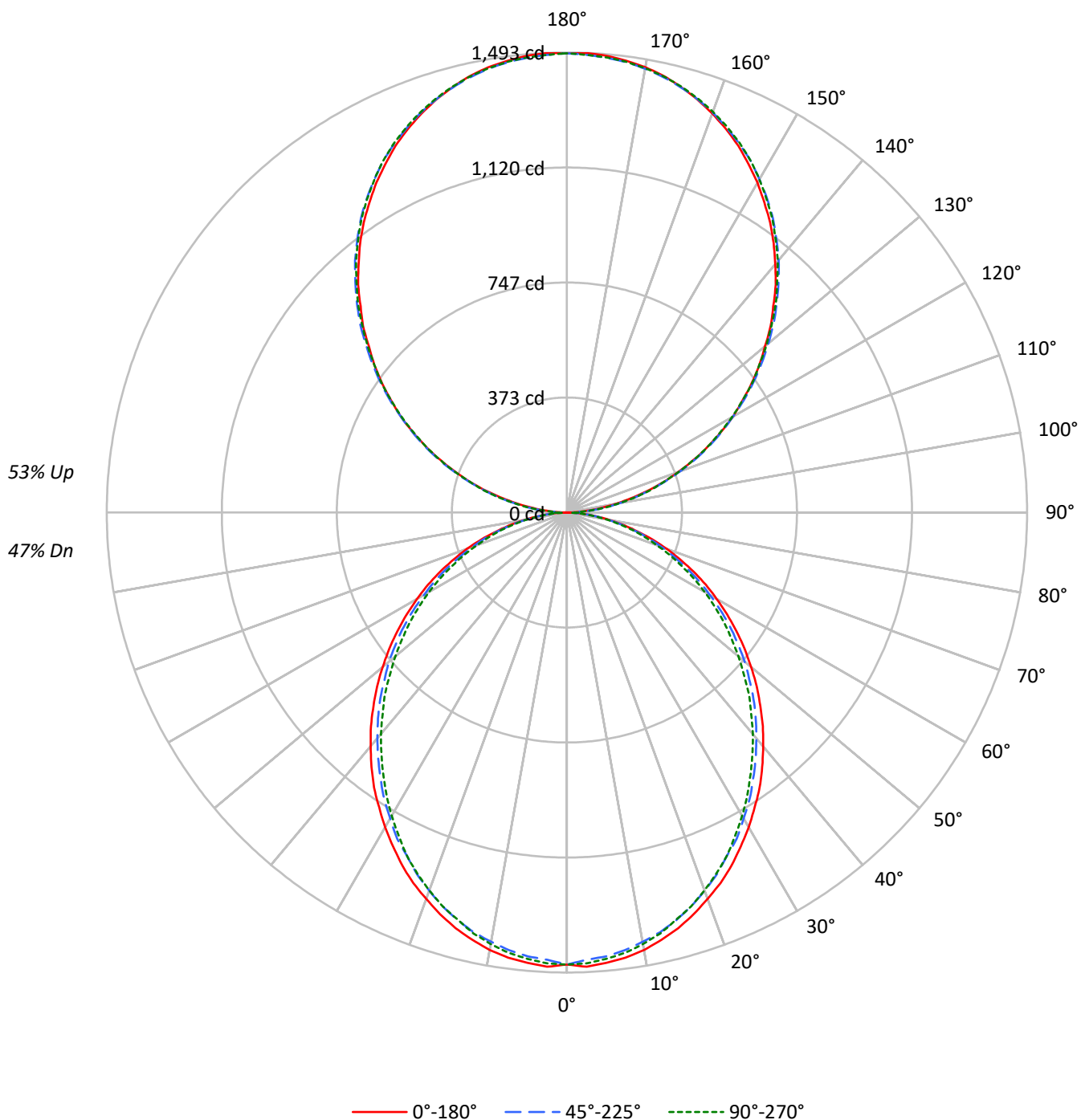
Lumens per Lamp: N/A
Luminaire Lumens: 7903.2 lumens
Efficiency: N/A
Efficacy: 106.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 1.99' x L: 2.3' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 74.5
Input Voltage (V): 120
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: P902470

CATALOG NUMBER: DFN2DIP-HX2F0-040D050US830-FLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P902470

CATALOG NUMBER: DFN2DIP-HX2F0-040D050US830-FLLFL

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	106	106	106	106	98	98	98	98	82	82	82	67	67	67	54	54	54
1	97	93	89	85	89	85	82	79	72	69	67	59	57	56	47	46	45
2	88	81	75	70	81	75	69	65	63	59	56	52	49	47	42	40	38
3	81	71	64	58	74	66	59	54	55	51	47	46	42	39	37	35	32
4	74	63	55	49	68	58	51	46	49	44	40	41	37	34	33	30	28
5	68	56	48	42	62	52	45	39	44	39	34	37	33	29	30	27	24
6	62	50	42	37	57	47	40	34	40	34	30	33	29	26	27	24	21
7	58	45	38	32	53	42	35	30	36	30	26	30	26	23	25	21	19
8	54	41	34	28	49	38	31	27	33	27	23	28	23	20	23	19	17
9	50	38	30	25	46	35	28	24	30	25	21	25	21	18	21	18	15
10	47	35	27	23	43	32	26	21	28	22	19	23	19	16	19	16	14

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3456	3456	3456
5°	3456	3400	3425
10°	3423	3346	3372
15°	3367	3283	3294
20°	3294	3198	3213
25°	3220	3098	3121
30°	3130	3005	3006
35°	3044	2897	2885
40°	2939	2786	2769
45°	2833	2675	2649
50°	2718	2559	2512
55°	2597	2424	2385
60°	2460	2266	2238
65°	2309	2100	2066
70°	2118	1898	1879
75°	1856	1657	1698
80°	1535	1349	1370
85°	1043	846	848

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2833 cd/sqm

TEST NUMBER: P902470

CATALOG NUMBER: DFN2DIP-HX2F0-040D050US830-FLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	138.1	1.7
10°-20°	388.5	4.9
20°-30°	570.9	7.2
30°-40°	663.1	8.4
40°-50°	662.3	8.4
50°-60°	577.5	7.3
60°-70°	426.9	5.4
70°-80°	241.5	3.1
80°-90°	68.0	0.9
90°-100°	92.2	1.2
100°-110°	293.0	3.7
110°-120°	501.5	6.3
120°-130°	659.5	8.3
130°-140°	740.3	9.4
140°-150°	725.9	9.2
150°-160°	609.0	7.7
160°-170°	403.9	5.1
170°-180°	141.2	1.8
0°-30°	1097.5	13.9
0°-40°	1760.6	22.3
0°-60°	3000.3	38.0
0°-90°	3736.7	47.3
90°-120°	886.7	11.2
90°-150°	3012.5	38.1
90°-180°	4167.0	52.7
0°-180°	7903.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1467	1467	1467	1467	1467	
5°	1467	1461	1446	1457	1454	139
15°	1396	1388	1370	1375	1368	393
25°	1264	1253	1229	1231	1229	582
35°	1090	1076	1054	1045	1038	681
45°	887	878	856	841	835	685
55°	672	663	646	629	622	600
65°	453	444	430	418	411	448
75°	237	234	227	219	222	253
85°	58	56	55	51	49	64
90°	1	16	44	41	43	8
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: P902470

CATALOG NUMBER: DFN2DIP-HX2F0-040D050US830-FLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1467.0	1467.0	1467.0	1467.0	1467.0
2.5°	1475.5	1468.5	1452.9	1467.0	1464.3
5°	1467.0	1461.4	1445.9	1457.1	1454.4
7.5°	1457.1	1448.7	1433.1	1444.5	1441.7
10°	1441.7	1431.8	1414.9	1426.2	1421.9
12.5°	1420.4	1412.0	1395.2	1402.2	1399.3
15°	1396.5	1388.1	1369.7	1375.4	1368.4
17.5°	1366.9	1358.5	1340.1	1347.1	1340.1
20°	1334.4	1326.0	1306.3	1310.4	1304.9
22.5°	1302.0	1289.3	1270.9	1270.9	1268.1
25°	1263.9	1252.6	1228.7	1231.4	1228.7
27.5°	1221.5	1211.6	1193.4	1189.2	1182.2
30°	1179.3	1168.0	1146.9	1142.6	1137.0
32.5°	1134.2	1125.8	1103.2	1094.7	1088.9
35°	1090.4	1076.4	1053.8	1045.3	1038.2
37.5°	1041.0	1028.3	1005.7	995.9	988.8
40°	990.3	978.9	956.3	943.8	938.1
42.5°	940.9	929.5	907.1	892.9	884.5
45°	887.3	877.5	856.2	840.8	835.1
47.5°	835.1	825.2	802.7	787.1	778.7
50°	780.0	773.0	753.3	733.5	726.4
52.5°	726.4	716.6	698.3	682.8	672.9
55°	671.6	663.0	646.1	629.1	622.2
57.5°	616.4	609.4	591.0	574.1	568.4
60°	561.4	555.8	536.1	520.6	516.3
62.5°	507.8	497.9	483.9	469.8	464.1
65°	452.9	444.3	430.3	417.5	410.6
67.5°	396.4	389.3	376.7	366.8	361.2
70°	344.2	338.6	325.8	315.9	310.4
72.5°	290.7	284.9	278.0	268.1	263.8
75°	237.0	234.2	227.1	218.7	221.5
77.5°	189.0	183.3	180.5	176.3	172.1
80°	141.1	139.6	136.8	132.6	129.8
82.5°	96.0	96.0	94.6	88.9	88.9
85°	57.8	56.5	55.0	50.7	49.4
87.5°	25.4	22.6	19.8	15.6	14.0
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: P902470

CATALOG NUMBER: DFN2DIP-HX2F0-040D050US830-FLLFLL

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: P902470

CATALOG NUMBER: DFN2DIP-HX2F0-040D050US830-FLLFLL

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	11.19	12.02	12.17	13.02	14.33	10.76	11.60	11.74	12.59	13.90
	3H	12.82	13.57	13.81	14.57	15.90	12.36	13.11	13.35	14.11	15.44
	4H	13.39	14.10	14.39	15.11	16.44	12.93	13.64	13.93	14.65	15.99
	6H	13.77	14.42	14.78	15.43	16.78	13.31	13.96	14.32	14.97	16.33
	8H	13.86	14.49	14.88	15.51	16.86	13.40	14.03	14.42	15.06	16.40
	12H	13.90	14.49	14.93	15.51	16.89	13.44	14.03	14.46	15.05	16.42
4H	2H	11.63	12.35	12.64	13.35	14.69	11.30	12.01	12.31	13.01	14.35
	3H	13.47	14.06	14.49	15.10	16.45	13.09	13.68	14.10	14.71	16.07
	4H	14.16	14.71	15.19	15.73	17.11	13.77	14.31	14.80	15.34	16.71
	6H	14.65	15.12	15.69	16.17	17.54	14.26	14.72	15.29	15.77	17.15
	8H	14.79	15.23	15.83	16.27	17.66	14.39	14.83	15.43	15.87	17.26
	12H	14.85	15.24	15.91	16.30	17.69	14.45	14.84	15.50	15.90	17.29
8H	4H	14.35	14.78	15.38	15.83	17.21	14.00	14.43	15.03	15.47	16.86
	6H	14.95	15.31	16.01	16.39	17.78	14.60	14.96	15.66	16.04	17.43
	8H	15.15	15.47	16.22	16.54	17.94	14.80	15.11	15.86	16.18	17.59
	12H	15.27	15.54	16.34	16.61	18.05	14.90	15.18	15.97	16.24	17.68
12H	4H	14.33	14.72	15.38	15.78	17.17	13.98	14.38	15.04	15.44	16.83
	6H	14.97	15.29	16.04	16.36	17.76	14.63	14.95	15.70	16.02	17.42
	8H	15.19	15.47	16.27	16.54	17.98	14.85	15.13	15.92	16.19	17.64