

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: P928530

Luminaire Tested: DFN2DIP-HX4F0-050D040US930-RLLONL

Issue Date: 12/12/2024

Test Information

Test Method: LM-79-2019
Report Number: P928530
REPORT IS A COMBINATION OF REPORTS P900822 AND P896187
Test Lab: INNOVATION CENTER
Issue Date: 12/12/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX4F0-050D040US930-RLONL
Description: 4 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

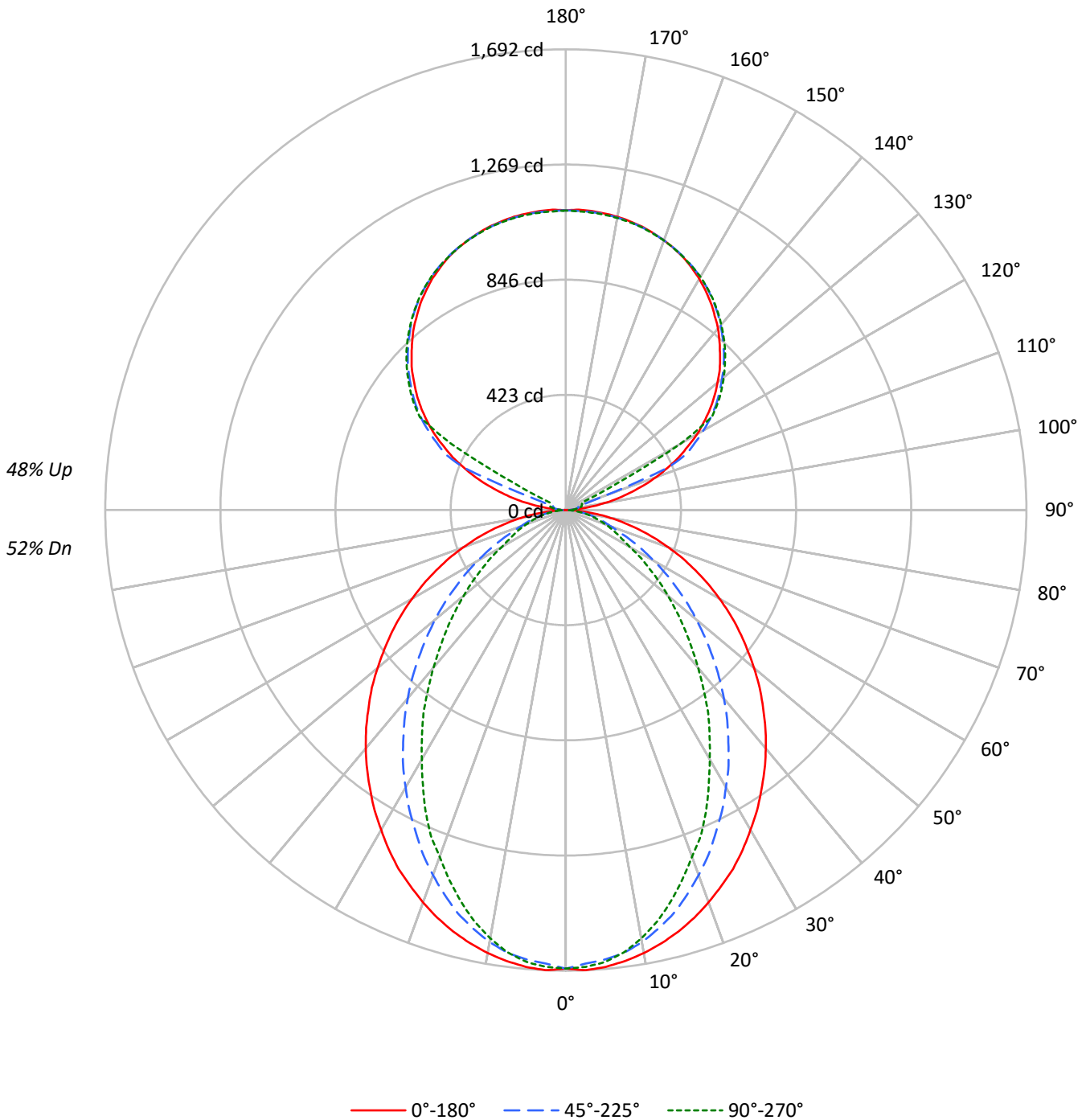
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6691.1 lumens
Efficiency: N/A
Efficacy: 90.7 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: General Diffuse

Input Watts (W): 73.8
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9957
Total Harmonic Distortion (THDi): 0.049
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				20				
RC	80				70				50				30				10			0	
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																					
0	108	108	108	108	99	99	99	99	84	84	84	70	70	70	58	58	58	52	52	52	52
1	99	95	91	87	91	88	84	82	75	72	70	63	61	60	52	51	50	45	45	45	45
2	90	83	77	72	83	77	72	68	66	62	59	56	53	51	46	44	43	38	38	38	38
3	83	74	66	61	76	68	62	57	59	54	50	50	46	43	41	39	37	33	33	33	33
4	76	65	58	52	70	61	54	49	52	47	43	45	41	38	37	35	32	29	29	29	29
5	70	59	51	45	64	55	48	42	47	42	38	40	36	33	34	31	28	25	25	25	25
6	65	53	45	39	60	49	42	37	43	37	33	37	32	29	31	28	25	22	22	22	22
7	60	48	40	35	55	45	38	33	39	33	29	33	29	26	28	25	23	20	20	20	20
8	56	44	36	31	51	41	34	29	36	30	26	31	26	23	26	23	20	18	18	18	18
9	52	40	32	28	48	37	31	26	33	27	24	28	24	21	24	21	19	16	16	16	16
10	48	37	30	25	45	34	28	24	30	25	21	26	22	19	23	19	17	15	15	15	15

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1252	1252	1252
5°	1254	1233	1240
10°	1242	1208	1200
15°	1225	1169	1138
20°	1203	1114	1061
25°	1179	1052	987
30°	1149	989	894
35°	1118	921	811
40°	1087	851	717
45°	1051	773	631
50°	1014	694	548
55°	976	610	467
60°	931	522	385
65°	879	432	346
70°	817	349	314
75°	738	307	285
80°	625	258	248
85°	437	173	186

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 1051 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	157.8	2.4
10°-20°	433.3	6.5
20°-30°	608.4	9.1
30°-40°	663.2	9.9
40°-50°	609.5	9.1
50°-60°	478.7	7.2
60°-70°	311.6	4.7
70°-80°	160.4	2.4
80°-90°	42.9	0.6
90°-100°	36.3	0.5
100°-110°	135.2	2.0
110°-120°	358.7	5.4
120°-130°	594.9	8.9
130°-140°	631.9	9.4
140°-150°	587.3	8.8
150°-160°	472.2	7.1
160°-170°	304.3	4.5
170°-180°	104.7	1.6
0°-30°	1199.5	17.9
0°-40°	1862.7	27.8
0°-60°	2950.9	44.1
0°-90°	3465.7	51.8
90°-120°	530.2	7.9
90°-150°	2344.3	35.0
90°-180°	3225.0	48.2
0°-180°	6691.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1684	1684	1684	1684	1684	
5°	1684	1677	1657	1670	1666	160
15°	1602	1585	1533	1504	1489	451
25°	1454	1405	1305	1242	1219	669
35°	1253	1175	1041	945	911	784
45°	1024	922	762	654	617	791
55°	779	660	495	404	375	696
65°	526	402	265	213	209	521
75°	280	174	122	111	110	297
85°	66	34	29	29	29	75
90°	1	10	16	20	21	6
95°	52	25	31	35	34	61
105°	242	266	49	57	60	259
115°	458	471	491	123	65	451
125°	647	658	673	678	681	577
135°	801	814	821	829	827	619
145°	929	928	942	947	943	581
155°	1023	1016	1025	1030	1024	471
165°	1078	1073	1076	1081	1076	305
175°	1102	1097	1099	1104	1096	105
180°	1100	1100	1100	1100	1100	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1684.2	1684.2	1684.2	1684.2	1684.2
2.5°	1691.8	1684.2	1667.4	1682.7	1679.6
5°	1684.2	1676.6	1656.7	1670.4	1665.9
7.5°	1670.4	1661.4	1640.0	1646.1	1638.4
10°	1652.2	1641.5	1611.1	1606.4	1597.3
12.5°	1629.3	1615.7	1574.4	1565.4	1548.5
15°	1601.9	1585.1	1533.3	1504.4	1489.2
17.5°	1569.9	1545.5	1481.4	1447.9	1423.5
20°	1533.3	1502.8	1426.6	1388.6	1354.9
22.5°	1493.7	1458.6	1370.2	1318.4	1295.6
25°	1454.0	1405.2	1304.7	1242.2	1219.2
27.5°	1406.9	1354.9	1243.7	1172.1	1137.0
30°	1356.6	1298.5	1176.6	1098.9	1057.7
32.5°	1307.7	1237.6	1112.7	1021.2	983.1
35°	1252.9	1175.1	1041.1	945.0	911.4
37.5°	1199.5	1115.7	974.0	868.7	830.7
40°	1143.1	1051.8	903.8	795.6	756.0
42.5°	1085.3	987.7	833.7	720.9	682.9
45°	1024.3	922.1	762.1	653.8	617.2
47.5°	966.3	858.2	693.6	585.3	551.8
50°	902.4	794.1	626.5	521.2	489.3
52.5°	839.8	725.4	562.4	461.9	432.9
55°	778.8	659.9	495.3	403.9	375.0
57.5°	716.4	594.5	435.9	350.6	326.2
60°	652.3	530.4	373.4	295.8	271.3
62.5°	589.9	468.0	320.1	246.9	234.8
65°	525.8	402.4	265.2	213.4	208.8
67.5°	464.9	341.4	213.4	187.4	182.9
70°	400.9	282.0	176.8	161.5	155.4
72.5°	339.9	227.1	147.8	135.7	132.6
75°	280.4	173.7	121.9	111.2	109.8
77.5°	221.0	123.4	96.1	89.9	86.8
80°	166.1	88.4	73.1	67.1	67.1
82.5°	115.8	59.5	50.3	47.2	47.2
85°	65.5	33.5	28.9	28.9	28.9
87.5°	24.4	12.1	12.1	10.7	10.7
90°	0.7	9.5	15.9	20.0	21.4
92.5°	20.0	16.7	19.1	20.7	21.4
95°	51.7	25.4	31.0	35.0	34.2
97.5°	93.2	27.9	40.6	43.0	43.8
100°	140.9	31.9	45.4	51.7	53.3
102.5°	193.4	191.9	46.9	55.7	58.1
105°	242.0	265.9	48.6	57.3	60.5
107.5°	298.5	318.4	50.2	58.9	62.1
110°	352.7	369.4	139.4	59.7	62.8



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	403.7	417.9	404.4	61.3	63.7
115°	457.7	471.2	491.2	122.6	65.4
117.5°	504.7	520.6	534.2	420.3	211.7
120°	557.3	569.2	583.5	593.2	485.7
122.5°	601.8	614.6	630.6	635.3	636.1
125°	647.2	657.6	672.7	678.3	680.7
127.5°	688.6	699.8	711.7	719.7	720.5
130°	727.6	740.4	749.1	757.9	757.1
132.5°	767.4	777.8	786.6	793.7	793.0
135°	800.9	813.7	820.8	828.8	827.2
137.5°	835.9	845.4	853.5	861.4	859.0
140°	870.1	876.5	885.3	892.4	888.4
142.5°	898.9	904.4	914.8	921.0	917.1
145°	929.1	928.3	941.7	947.4	943.4
147.5°	955.3	952.9	966.4	970.4	967.3
150°	980.8	975.2	988.0	992.8	988.8
152.5°	1002.3	995.9	1007.8	1012.6	1007.1
155°	1023.0	1015.9	1025.4	1030.2	1023.8
157.5°	1039.7	1033.3	1040.6	1046.1	1039.7
160°	1054.0	1049.2	1054.0	1058.8	1053.2
162.5°	1066.8	1062.0	1066.0	1071.6	1064.4
165°	1077.9	1073.2	1075.6	1081.1	1075.6
167.5°	1086.7	1081.8	1084.4	1089.9	1082.7
170°	1093.9	1089.1	1090.6	1096.3	1089.1
172.5°	1098.6	1093.9	1095.5	1101.1	1093.9
175°	1102.5	1097.0	1098.6	1104.2	1096.3
177.5°	1104.2	1098.6	1099.4	1105.1	1097.9
180°	1100.2	1100.2	1100.2	1100.2	1100.2



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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	8.10	8.94	9.05	9.90	11.15	4.07	4.91	5.02	5.87	7.12
	3H	9.78	10.53	10.74	11.50	12.77	5.26	6.02	6.22	6.99	8.26
	4H	10.39	11.10	11.36	12.07	13.35	5.71	6.43	6.69	7.40	8.68
	6H	10.81	11.47	11.79	12.44	13.74	6.04	6.69	7.02	7.67	8.96
	8H	10.94	11.56	11.93	12.56	13.85	6.13	6.75	7.12	7.75	9.04
	12H	11.00	11.59	11.99	12.58	13.90	6.17	6.77	7.17	7.76	9.07
4H	2H	8.12	8.83	9.10	9.80	11.08	4.67	5.38	5.65	6.35	7.63
	3H	9.95	10.54	10.94	11.55	12.84	6.02	6.61	7.01	7.62	8.91
	4H	10.64	11.18	11.64	12.18	13.50	6.57	7.11	7.57	8.11	9.43
	6H	11.16	11.62	12.17	12.64	13.96	6.99	7.46	8.00	8.48	9.79
	8H	11.34	11.77	12.35	12.78	14.11	7.12	7.56	8.13	8.57	9.90
	12H	11.43	11.82	12.46	12.85	14.19	7.19	7.58	8.22	8.61	9.94
8H	4H	10.61	11.05	11.62	12.06	13.39	6.85	7.29	7.86	8.30	9.63
	6H	11.18	11.54	12.21	12.59	13.92	7.37	7.73	8.41	8.79	10.11
	8H	11.40	11.71	12.44	12.75	14.10	7.57	7.88	8.61	8.92	10.27
	12H	11.54	11.81	12.58	12.85	14.24	7.69	7.96	8.73	9.00	10.39
12H	4H	10.56	10.96	11.59	11.98	13.32	6.86	7.25	7.89	8.28	9.61
	6H	11.15	11.47	12.20	12.51	13.86	7.42	7.74	8.47	8.78	10.13
	8H	11.38	11.66	12.42	12.69	14.08	7.64	7.91	8.68	8.95	10.34