

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: P913345

Luminaire Tested: DFN2DIP-HX2F0-020D050US927-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P913345
REPORT IS A COMBINATION OF REPORTS P900702 AND P897595
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX2F0-020D050US927-RLLONL
Description: 2 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

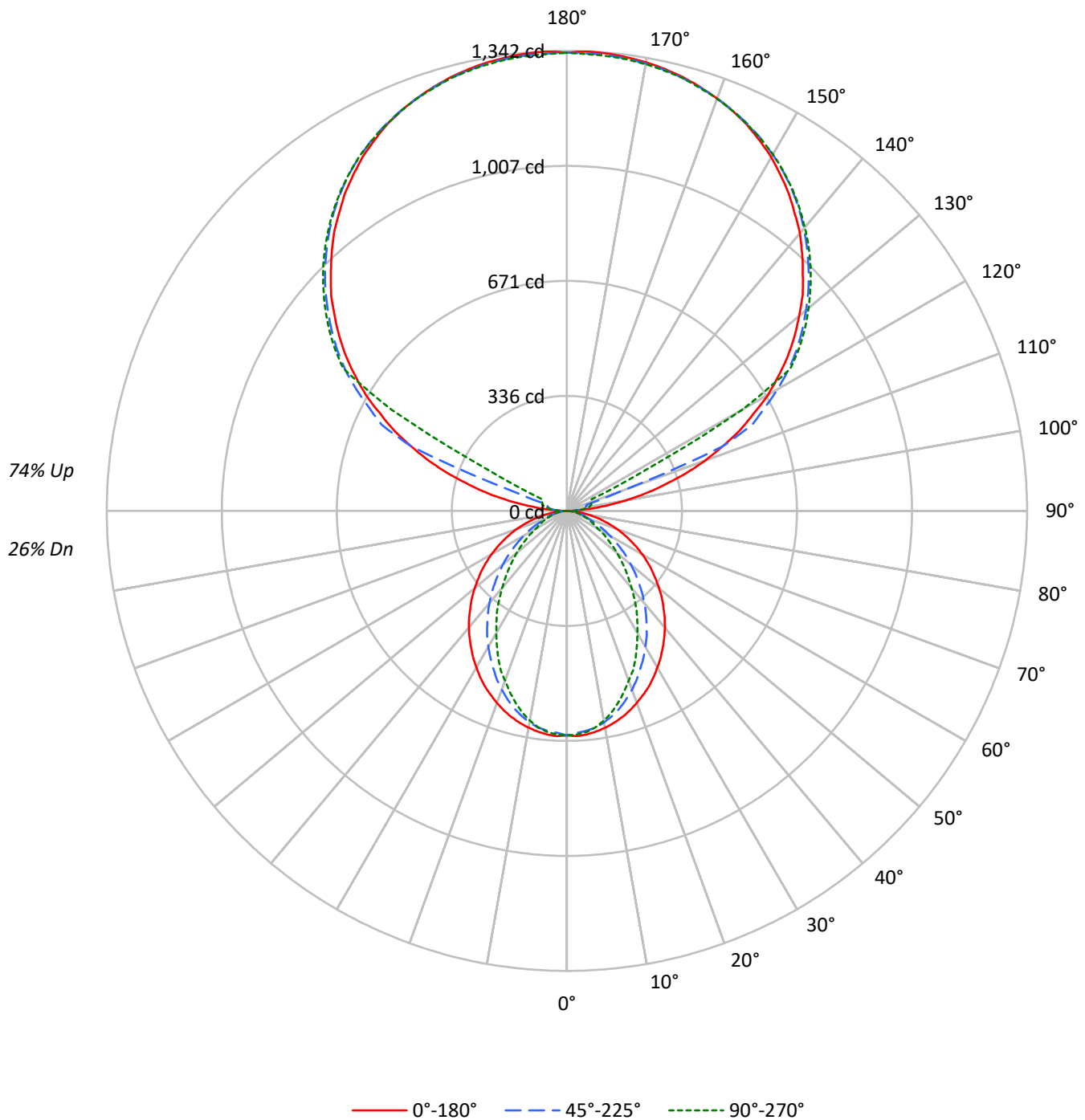
Lumens per Lamp: N/A
Luminaire Lumens: 5268.0 lumens
Efficiency: N/A
Efficacy: 98.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 1.99' x L: 2.3' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 53.7
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

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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
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10
RCR																	
0	101	101	101	101	90	90	90	90	70	70	70	51	51	51	34	34	34
1	93	88	85	82	82	79	76	73	61	59	58	45	44	43	30	29	29
2	84	77	72	67	75	69	65	60	54	51	48	40	38	36	27	26	25
3	77	68	61	56	69	61	55	51	48	44	41	35	33	31	24	23	21
4	71	60	53	47	63	54	48	43	43	38	35	32	29	26	22	20	19
5	65	54	46	41	58	48	42	37	38	33	30	28	25	23	19	18	16
6	60	48	41	35	53	43	37	32	34	30	26	26	23	20	18	16	14
7	55	43	36	31	49	39	33	28	31	26	23	23	20	18	16	14	13
8	51	39	32	27	45	36	29	25	28	24	20	21	18	16	15	13	12
9	47	36	29	24	42	32	26	22	26	21	18	20	16	14	14	12	10
10	44	33	26	21	39	30	24	20	24	19	16	18	15	13	13	11	10

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1543	1543	1543
5°	1543	1515	1525
10°	1525	1481	1473
15°	1502	1429	1394
20°	1471	1358	1297
25°	1441	1279	1204
30°	1400	1199	1087
35°	1360	1113	984
40°	1319	1024	867
45°	1271	926	761
50°	1223	827	658
55°	1171	723	559
60°	1112	614	457
65°	1043	503	409
70°	959	400	366
75°	854	346	327
80°	703	280	276
85°	458	172	192

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 1271 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	61.4	1.2
10°-20°	168.5	3.2
20°-30°	236.5	4.5
30°-40°	257.8	4.9
40°-50°	237.0	4.5
50°-60°	186.1	3.5
60°-70°	121.2	2.3
70°-80°	62.3	1.2
80°-90°	18.3	0.3
90°-100°	44.1	0.8
100°-110°	164.3	3.1
110°-120°	435.8	8.3
120°-130°	722.8	13.7
130°-140°	767.8	14.6
140°-150°	713.6	13.5
150°-160°	573.7	10.9
160°-170°	369.7	7.0
170°-180°	127.2	2.4
0°-30°	466.4	8.9
0°-40°	724.2	13.7
0°-60°	1147.3	21.8
0°-90°	1349.1	25.6
90°-120°	644.2	12.2
90°-150°	2848.4	54.1
90°-180°	3919.0	74.4
0°-180°	5268.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	655	655	655	655	655	
5°	655	652	644	650	648	62
15°	623	616	596	585	579	176
25°	565	546	507	483	474	260
35°	487	457	405	367	354	305
45°	398	358	296	254	240	308
55°	303	257	193	157	146	271
65°	204	156	103	83	81	203
75°	109	68	47	43	43	115
85°	25	13	11	11	11	29
90°	1	12	19	24	26	5
95°	63	31	38	43	42	74
105°	294	323	59	70	74	314
115°	556	573	597	149	79	548
125°	786	799	817	824	827	701
135°	973	989	997	1007	1005	752
145°	1129	1128	1144	1151	1146	706
155°	1243	1234	1246	1252	1244	573
165°	1310	1304	1307	1314	1307	370
175°	1340	1333	1335	1342	1332	127
180°	1337	1337	1337	1337	1337	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	654.8	654.8	654.8	654.8	654.8
2.5°	657.7	654.8	648.2	654.3	653.1
5°	654.8	651.9	644.1	649.5	647.7
7.5°	649.5	645.9	637.6	640.0	637.0
10°	642.4	638.2	626.4	624.6	621.1
12.5°	633.5	628.1	612.1	608.6	602.1
15°	622.8	616.2	596.1	584.9	579.0
17.5°	610.4	600.9	576.0	562.9	553.5
20°	596.1	584.2	554.7	539.9	526.8
22.5°	580.7	567.1	532.7	512.6	503.7
25°	565.4	546.4	507.2	483.0	474.0
27.5°	547.0	526.8	483.5	455.7	442.0
30°	527.4	504.9	457.5	427.3	411.2
32.5°	508.4	481.2	432.6	397.0	382.2
35°	487.1	456.9	404.8	367.4	354.3
37.5°	466.4	433.7	378.7	337.8	323.0
40°	444.4	408.9	351.4	309.3	293.9
42.5°	421.9	384.0	324.2	280.3	265.5
45°	398.2	358.5	296.4	254.2	240.0
47.5°	375.7	333.7	269.7	227.5	214.5
50°	350.9	308.8	243.6	202.6	190.3
52.5°	326.5	282.0	218.6	179.6	168.3
55°	302.8	256.6	192.6	157.1	145.8
57.5°	278.5	231.1	169.5	136.3	126.8
60°	253.7	206.2	145.2	115.0	105.5
62.5°	229.3	182.0	124.5	96.0	91.3
65°	204.5	156.5	103.1	83.0	81.2
67.5°	180.8	132.7	83.0	72.9	71.1
70°	155.8	109.6	68.7	62.8	60.4
72.5°	132.1	88.2	57.4	52.8	51.6
75°	109.0	67.5	47.4	43.3	42.7
77.5°	86.0	48.0	37.3	34.9	33.7
80°	64.6	34.4	28.4	26.1	26.1
82.5°	45.0	23.1	19.6	18.4	18.4
85°	25.4	13.0	11.2	11.2	11.2
87.5°	9.5	4.8	4.8	4.1	4.1
90°	1.0	11.6	19.3	24.2	26.1
92.5°	24.2	20.4	23.2	25.2	26.1
95°	62.8	30.9	37.7	42.6	41.6
97.5°	113.1	33.9	49.3	52.3	53.2
100°	171.3	38.7	55.1	62.8	64.8
102.5°	235.0	233.1	57.1	67.7	70.7
105°	294.1	323.1	59.0	69.6	73.5
107.5°	362.7	386.8	61.0	71.5	75.5
110°	428.6	448.8	169.3	72.6	76.4

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	490.4	507.8	491.4	74.5	77.4
115°	556.2	572.6	596.8	149.0	79.4
117.5°	613.2	632.6	649.1	510.6	257.3
120°	677.1	691.6	709.0	720.6	590.0
122.5°	731.2	746.7	766.1	771.9	772.9
125°	786.3	799.0	817.4	824.1	827.0
127.5°	836.6	850.2	864.8	874.4	875.4
130°	884.1	899.6	910.1	920.8	920.0
132.5°	932.5	945.1	955.6	964.4	963.5
135°	973.1	988.6	997.2	1007.0	1005.0
137.5°	1015.6	1027.2	1037.0	1046.6	1043.8
140°	1057.2	1065.0	1075.5	1084.3	1079.5
142.5°	1092.1	1098.9	1111.4	1119.1	1114.3
145°	1128.9	1127.8	1144.2	1151.0	1146.2
147.5°	1160.7	1157.8	1174.3	1179.1	1175.3
150°	1191.7	1184.9	1200.4	1206.2	1201.3
152.5°	1217.7	1210.1	1224.6	1230.4	1223.6
155°	1242.9	1234.3	1245.9	1251.6	1244.0
157.5°	1263.2	1255.5	1264.2	1271.1	1263.2
160°	1280.7	1274.9	1280.7	1286.4	1279.7
162.5°	1296.1	1290.4	1295.1	1301.9	1293.2
165°	1309.6	1303.9	1306.8	1313.5	1306.8
167.5°	1320.3	1314.5	1317.5	1324.2	1315.5
170°	1329.0	1323.2	1325.2	1331.9	1323.2
172.5°	1334.8	1329.0	1331.0	1337.8	1329.0
175°	1339.7	1332.8	1334.8	1341.6	1331.9
177.5°	1341.6	1334.8	1335.9	1342.6	1333.9
180°	1336.7	1336.7	1336.7	1336.7	1336.7

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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	5.64	6.31	6.79	7.44	9.02	1.62	2.29	2.77	3.42	5.00
	3H	7.28	7.87	8.43	9.01	10.61	2.78	3.38	3.94	4.52	6.12
	4H	7.86	8.43	9.03	9.57	11.17	3.21	3.78	4.38	4.92	6.52
	6H	8.26	8.78	9.43	9.92	11.53	3.51	4.03	4.68	5.17	6.79
	8H	8.37	8.86	9.54	10.02	11.62	3.59	4.08	4.76	5.24	6.85
	12H	8.41	8.88	9.59	10.03	11.66	3.62	4.09	4.80	5.24	6.87
4H	2H	5.63	6.20	6.80	7.34	8.94	2.18	2.75	3.35	3.89	5.49
	3H	7.42	7.89	8.59	9.05	10.67	3.50	3.97	4.67	5.13	6.75
	4H	8.09	8.52	9.26	9.67	11.31	4.03	4.46	5.20	5.61	7.25
	6H	8.57	8.94	9.75	10.11	11.74	4.42	4.79	5.60	5.96	7.59
	8H	8.73	9.07	9.91	10.24	11.88	4.53	4.88	5.71	6.05	7.69
	12H	8.80	9.11	9.99	10.29	11.94	4.58	4.89	5.78	6.07	7.72
8H	4H	8.04	8.38	9.22	9.55	11.19	4.28	4.62	5.46	5.79	7.43
	6H	8.57	8.85	9.77	10.07	11.70	4.77	5.05	5.97	6.26	7.90
	8H	8.77	9.02	9.97	10.20	11.86	4.95	5.19	6.15	6.38	8.04
	12H	8.88	9.10	10.09	10.29	11.98	5.04	5.26	6.25	6.45	8.14
12H	4H	7.98	8.29	9.18	9.47	11.12	4.27	4.59	5.47	5.76	7.41
	6H	8.54	8.79	9.75	9.98	11.64	4.81	5.06	6.01	6.25	7.90
	8H	8.74	8.96	9.95	10.14	11.83	5.00	5.22	6.21	6.40	8.09