

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: P928178

Luminaire Tested: DFN2DIP-HX4F0-040D060US927-RLLONL

Issue Date: 12/12/2024

Test Information

Test Method: LM-79-2019
Report Number: P928178
REPORT IS A COMBINATION OF REPORTS P900856 AND P896187
Test Lab: INNOVATION CENTER
Issue Date: 12/12/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX4F0-040D060US927-RLLONL
Description: 4 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

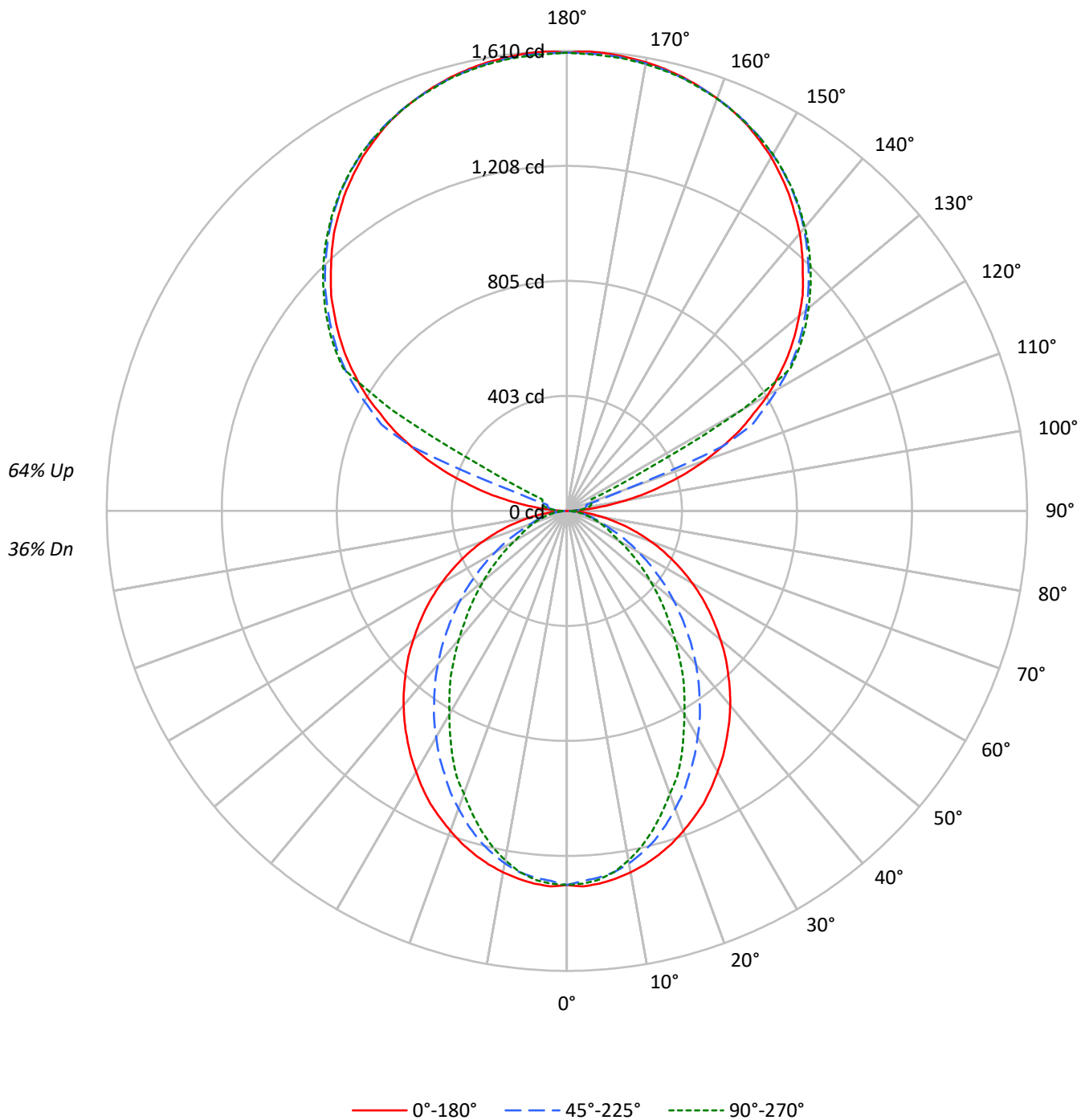
Lumens per Lamp: N/A
Luminaire Lumens: 7397.3 lumens
Efficiency: N/A
Efficacy: 95.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.54' x L: 4.09' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 77.3
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9977
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
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10
RCR																	
0	104	104	104	104	94	94	94	94	76	76	76	59	59	59	44	44	44
1	95	91	87	84	86	83	80	77	67	65	63	52	51	50	39	38	38
2	87	80	74	69	78	73	68	63	59	56	53	46	44	42	35	33	32
3	79	70	63	58	72	64	58	53	52	48	45	41	38	36	31	29	28
4	73	63	55	49	66	57	51	46	47	42	38	37	34	31	28	26	24
5	67	56	48	42	60	51	44	39	42	37	33	33	30	27	25	23	21
6	62	50	42	37	56	46	39	34	38	33	29	30	27	24	23	21	19
7	57	45	38	32	52	41	35	30	34	29	26	28	24	21	21	19	17
8	53	41	34	29	48	38	31	27	31	26	23	25	22	19	20	17	15
9	49	37	30	25	45	34	28	24	29	24	20	23	20	17	18	16	14
10	46	34	27	23	42	32	25	21	26	22	18	22	18	15	17	14	13

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	974	974	974
5°	975	958	964
10°	966	940	933
15°	952	909	884
20°	935	866	825
25°	917	818	768
30°	893	769	695
35°	869	716	631
40°	845	661	557
45°	817	601	491
50°	788	539	426
55°	758	474	363
60°	723	406	299
65°	683	336	269
70°	635	271	244
75°	574	239	222
80°	485	201	193
85°	339	135	145

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 824 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	122.7	1.7
10°-20°	336.9	4.6
20°-30°	473.0	6.4
30°-40°	515.5	7.0
40°-50°	473.8	6.4
50°-60°	372.1	5.0
60°-70°	242.2	3.3
70°-80°	124.7	1.7
80°-90°	34.7	0.5
90°-100°	52.9	0.7
100°-110°	197.1	2.7
110°-120°	522.8	7.1
120°-130°	867.2	11.7
130°-140°	921.1	12.5
140°-150°	856.1	11.6
150°-160°	688.3	9.3
160°-170°	443.5	6.0
170°-180°	152.6	2.1
0°-30°	932.5	12.6
0°-40°	1448.1	19.6
0°-60°	2294.1	31.0
0°-90°	2695.6	36.4
90°-120°	772.9	10.4
90°-150°	3417.2	46.2
90°-180°	4702.0	63.6
0°-180°	7397.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1309	1309	1309	1309	1309	
5°	1309	1303	1288	1299	1295	124
15°	1245	1232	1192	1170	1158	351
25°	1130	1092	1014	966	948	520
35°	974	914	809	735	708	610
45°	796	717	592	508	480	615
55°	606	513	385	314	292	541
65°	409	313	206	166	162	405
75°	218	135	95	86	85	231
85°	51	26	22	22	22	58
90°	1	14	23	29	31	7
95°	75	37	45	51	50	89
105°	353	388	71	84	88	377
115°	667	687	716	179	95	657
125°	943	959	981	989	992	841
135°	1168	1186	1196	1208	1206	902
145°	1354	1353	1373	1381	1375	847
155°	1491	1481	1495	1502	1492	687
165°	1571	1564	1568	1576	1568	444
175°	1607	1599	1601	1610	1598	153
180°	1604	1604	1604	1604	1604	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1309.3	1309.3	1309.3	1309.3	1309.3
2.5°	1315.3	1309.3	1296.3	1308.2	1305.8
5°	1309.3	1303.4	1288.0	1298.6	1295.2
7.5°	1298.6	1291.6	1275.0	1279.6	1273.8
10°	1284.5	1276.1	1252.5	1248.8	1241.9
12.5°	1266.7	1256.0	1224.0	1216.9	1203.8
15°	1245.3	1232.3	1192.0	1169.5	1157.7
17.5°	1220.5	1201.5	1151.6	1125.7	1106.7
20°	1192.0	1168.3	1109.0	1079.5	1053.4
22.5°	1161.2	1134.0	1065.2	1024.9	1007.3
25°	1130.4	1092.5	1014.2	965.8	947.9
27.5°	1093.8	1053.4	966.9	911.2	883.9
30°	1054.6	1009.5	914.7	854.3	822.3
32.5°	1016.7	962.1	865.0	793.9	764.2
35°	974.1	913.6	809.3	734.7	708.5
37.5°	932.6	867.3	757.2	675.3	645.8
40°	888.7	817.7	702.7	618.6	587.7
42.5°	843.6	767.8	648.2	560.4	530.9
45°	796.3	716.8	592.5	508.3	479.9
47.5°	751.3	667.2	539.2	455.0	428.9
50°	701.5	617.4	487.0	405.2	380.4
52.5°	652.8	564.0	437.3	359.0	336.5
55°	605.5	513.1	385.1	314.0	291.5
57.5°	556.9	462.1	338.9	272.5	253.6
60°	507.1	412.3	290.3	229.9	211.0
62.5°	458.6	363.8	248.8	192.0	182.6
65°	408.8	312.8	206.2	165.9	162.3
67.5°	361.5	265.4	165.9	145.7	142.2
70°	311.7	219.2	137.4	125.6	120.8
72.5°	264.3	176.5	114.9	105.5	103.1
75°	218.0	135.0	94.8	86.5	85.4
77.5°	171.9	95.9	74.7	69.9	67.5
80°	129.1	68.7	56.8	52.2	52.2
82.5°	90.1	46.3	39.1	36.7	36.7
85°	50.9	26.1	22.5	22.5	22.5
87.5°	19.0	9.4	9.4	8.3	8.3
90°	1.1	13.9	23.1	29.1	31.3
92.5°	29.1	24.4	27.8	30.2	31.3
95°	75.4	37.1	45.2	51.2	49.9
97.5°	135.7	40.6	59.1	62.7	63.8
100°	205.4	46.4	66.1	75.4	77.7
102.5°	282.0	279.7	68.5	81.2	84.7
105°	352.8	387.6	70.8	83.5	88.2
107.5°	435.2	464.1	73.2	85.9	90.5
110°	514.2	538.4	203.1	87.1	91.6

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	588.4	609.2	589.5	89.3	92.9
115°	667.3	687.0	716.0	178.8	95.2
117.5°	735.7	758.9	778.7	612.7	308.6
120°	812.4	829.7	850.7	864.5	707.9
122.5°	877.2	895.8	919.1	926.0	927.3
125°	943.4	958.6	980.6	988.7	992.1
127.5°	1003.8	1020.0	1037.5	1049.1	1050.2
130°	1060.6	1079.3	1091.9	1104.8	1103.7
132.5°	1118.7	1133.8	1146.5	1157.0	1155.8
135°	1167.5	1186.1	1196.4	1208.1	1205.7
137.5°	1218.4	1232.4	1244.1	1255.6	1252.2
140°	1268.3	1277.7	1290.4	1300.9	1295.1
142.5°	1310.2	1318.4	1333.4	1342.6	1336.8
145°	1354.3	1353.1	1372.8	1380.9	1375.1
147.5°	1392.5	1389.0	1408.7	1414.5	1410.0
150°	1429.7	1421.6	1440.2	1447.1	1441.3
152.5°	1461.0	1451.7	1469.1	1476.1	1468.0
155°	1491.2	1480.8	1494.7	1501.6	1492.4
157.5°	1515.6	1506.3	1516.8	1524.9	1515.6
160°	1536.5	1529.4	1536.5	1543.4	1535.3
162.5°	1554.9	1548.0	1553.8	1562.0	1551.5
165°	1571.2	1564.4	1567.8	1575.9	1567.8
167.5°	1584.0	1577.0	1580.6	1588.8	1578.2
170°	1594.5	1587.5	1589.9	1597.9	1587.5
172.5°	1601.4	1594.5	1596.8	1605.0	1594.5
175°	1607.2	1599.0	1601.4	1609.5	1597.9
177.5°	1609.5	1601.4	1602.6	1610.8	1600.3
180°	1603.7	1603.7	1603.7	1603.7	1603.7

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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	6.37	6.71	7.44	8.89	1.61	2.34	2.68	3.41	4.87
	3H	7.31	7.96	8.39	9.04	10.51	2.80	3.45	3.88	4.53	6.00
	4H	7.92	8.53	9.01	9.61	11.09	3.24	3.86	4.33	4.94	6.42
	6H	8.33	8.90	9.43	9.98	11.48	3.56	4.13	4.66	5.21	6.70
	8H	8.46	9.00	9.56	10.10	11.58	3.65	4.19	4.75	5.29	6.77
	12H	8.52	9.03	9.62	10.12	11.63	3.69	4.20	4.80	5.30	6.80
4H	2H	5.65	6.26	6.74	7.34	8.82	2.20	2.82	3.29	3.89	5.37
	3H	7.47	7.98	8.57	9.09	10.58	3.54	4.05	4.64	5.16	6.65
	4H	8.16	8.63	9.27	9.72	11.24	4.09	4.56	5.19	5.65	7.17
	6H	8.67	9.07	9.78	10.19	11.70	4.50	4.91	5.62	6.02	7.53
	8H	8.84	9.22	9.96	10.33	11.85	4.63	5.01	5.75	6.12	7.64
	12H	8.93	9.27	10.07	10.40	11.92	4.69	5.03	5.82	6.16	7.68
8H	4H	8.12	8.49	9.23	9.61	11.13	4.36	4.74	5.47	5.85	7.37
	6H	8.68	8.99	9.82	10.15	11.66	4.88	5.19	6.01	6.34	7.86
	8H	8.90	9.17	10.04	10.30	11.84	5.07	5.34	6.21	6.47	8.01
	12H	9.03	9.27	10.18	10.40	11.98	5.18	5.42	6.33	6.55	8.13
12H	4H	8.06	8.41	9.20	9.53	11.06	4.36	4.70	5.49	5.82	7.35
	6H	8.66	8.93	9.80	10.06	11.60	4.93	5.20	6.07	6.33	7.87
	8H	8.87	9.11	10.02	10.24	11.82	5.13	5.37	6.28	6.50	8.08

END OF REPORT