

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: P928250

Luminaire Tested: DFN2DIP-HX4F0-060D060US927-RLLONL

Issue Date: 12/12/2024

Test Information

Test Method: LM-79-2019
Report Number: P928250
REPORT IS A COMBINATION OF REPORTS P900860 AND P896187
Test Lab: INNOVATION CENTER
Issue Date: 12/12/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX4F0-060D060US927-RLLONL
Description: 4 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

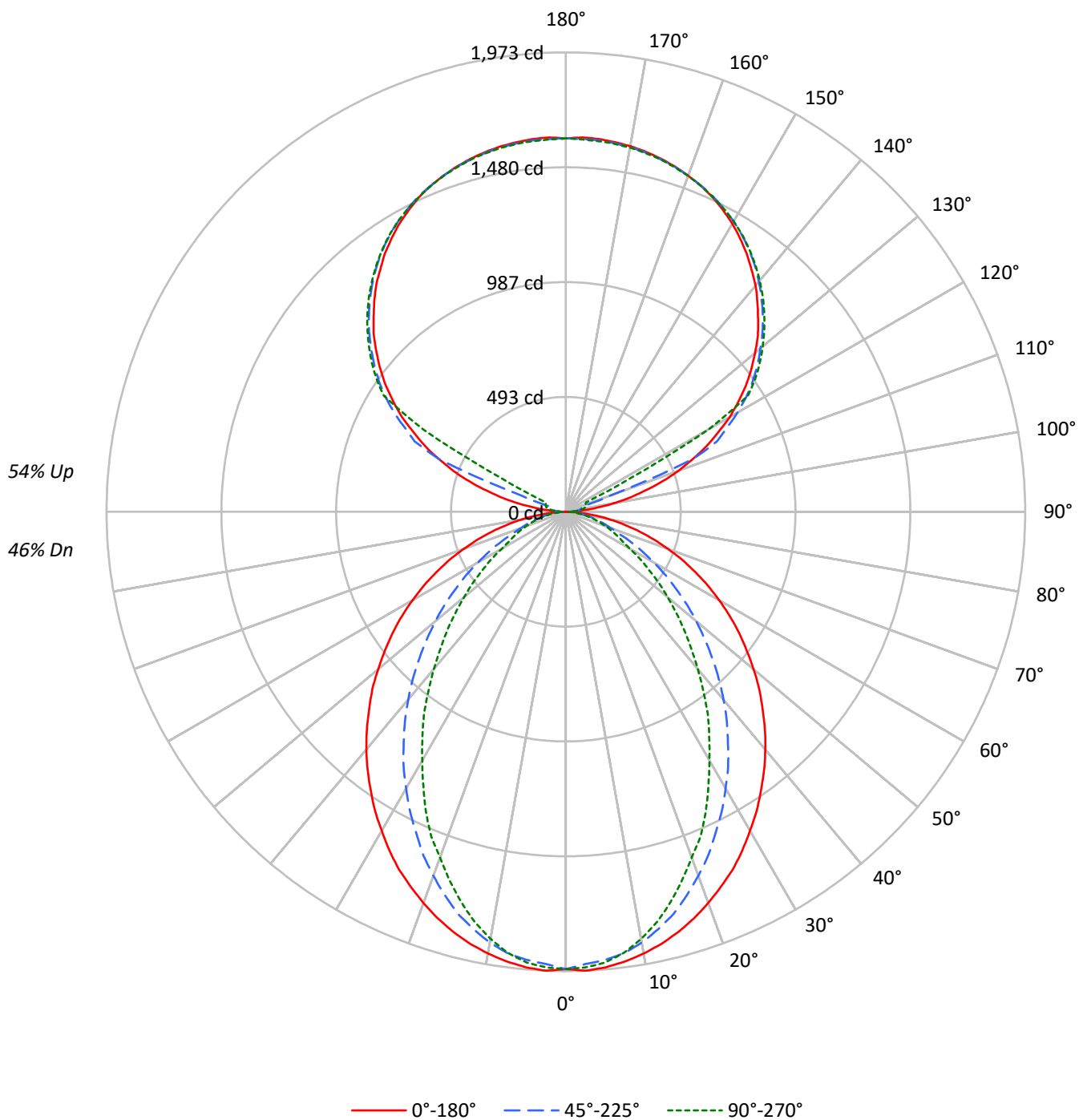
Lumens per Lamp: N/A
Luminaire Lumens: 8743.6 lumens
Efficiency: N/A
Efficacy: 89.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.54' x L: 4.09' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 98.2
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.099
Total Harmonic Distortion (THDi): 0.979
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	106	106	106	106	98	98	98	98	81	81	81	66	66	66	53	53	53
1	97	93	90	86	89	86	83	80	72	70	68	59	58	56	47	46	45
2	89	82	76	71	82	76	70	66	63	60	57	52	50	48	42	40	39
3	81	72	65	60	75	67	61	56	56	52	48	47	43	41	38	35	34
4	75	64	57	51	68	60	53	48	50	45	41	42	38	35	34	31	29
5	69	58	50	44	63	53	46	41	45	40	36	38	34	31	31	28	26
6	63	52	44	38	58	48	41	36	41	36	32	34	30	27	28	25	23
7	59	47	39	34	54	44	37	32	37	32	28	31	27	24	26	23	21
8	55	43	35	30	50	40	33	28	34	29	25	29	25	22	24	21	19
9	51	39	32	27	47	36	30	25	31	26	22	27	23	20	22	19	17
10	48	36	29	24	44	33	27	23	29	24	20	25	21	18	20	18	15

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1460	1460	1460
5°	1463	1437	1446
10°	1448	1409	1399
15°	1429	1363	1327
20°	1402	1299	1238
25°	1376	1227	1151
30°	1339	1153	1042
35°	1304	1074	946
40°	1268	992	836
45°	1226	901	736
50°	1183	809	639
55°	1138	711	545
60°	1085	608	449
65°	1025	504	404
70°	952	406	366
75°	861	359	333
80°	728	301	289
85°	509	202	217

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1226 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	184.1	2.1
10°-20°	505.3	5.8
20°-30°	709.4	8.1
30°-40°	773.3	8.8
40°-50°	710.8	8.1
50°-60°	558.2	6.4
60°-70°	363.3	4.2
70°-80°	187.0	2.1
80°-90°	50.5	0.6
90°-100°	52.9	0.6
100°-110°	197.1	2.3
110°-120°	522.8	6.0
120°-130°	867.2	9.9
130°-140°	921.1	10.5
140°-150°	856.1	9.8
150°-160°	688.3	7.9
160°-170°	443.5	5.1
170°-180°	152.6	1.7
0°-30°	1398.8	16.0
0°-40°	2172.1	24.8
0°-60°	3441.1	39.4
0°-90°	4042.0	46.2
90°-120°	772.9	8.8
90°-150°	3417.2	39.1
90°-180°	4702.0	53.8
0°-180°	8743.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1964	1964	1964	1964	1964	
5°	1964	1955	1932	1948	1943	186
15°	1868	1848	1788	1754	1736	526
25°	1696	1639	1521	1449	1422	780
35°	1461	1370	1214	1102	1063	914
45°	1194	1075	889	762	720	922
55°	908	770	578	471	437	812
65°	613	469	309	249	244	608
75°	327	202	142	130	128	346
85°	76	39	34	34	34	88
90°	1	14	23	29	31	8
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°	1964.0	1964.0	1964.0	1964.0	1964.0
2.5°	1972.9	1964.0	1944.4	1962.3	1958.7
5°	1964.0	1955.1	1931.9	1948.0	1942.7
7.5°	1948.0	1937.4	1912.5	1919.5	1910.6
10°	1926.6	1914.2	1878.8	1873.3	1862.7
12.5°	1900.1	1884.0	1835.9	1825.4	1805.8
15°	1868.0	1848.4	1788.0	1754.3	1736.5
17.5°	1830.7	1802.2	1727.5	1688.5	1660.0
20°	1788.0	1752.4	1663.6	1619.2	1580.0
22.5°	1741.8	1700.9	1597.8	1537.4	1510.8
25°	1695.7	1638.7	1521.4	1448.6	1421.9
27.5°	1640.6	1580.0	1450.3	1366.8	1325.9
30°	1581.9	1514.2	1372.1	1281.5	1233.5
32.5°	1525.0	1443.2	1297.6	1190.9	1146.3
35°	1461.1	1370.4	1214.1	1102.0	1062.8
37.5°	1398.8	1300.9	1135.8	1013.0	968.7
40°	1333.0	1226.5	1053.9	927.7	881.6
42.5°	1265.5	1151.8	972.3	840.6	796.4
45°	1194.4	1075.2	888.8	762.4	719.8
47.5°	1126.9	1000.8	808.8	682.5	643.4
50°	1052.3	926.1	730.5	607.8	570.6
52.5°	979.2	845.9	655.9	538.6	504.8
55°	908.2	769.6	577.6	471.1	437.3
57.5°	835.4	693.2	508.4	408.8	380.3
60°	760.7	618.6	435.4	344.9	316.4
62.5°	687.9	545.8	373.2	288.0	273.8
65°	613.2	469.2	309.3	248.9	243.5
67.5°	542.1	398.1	248.9	218.6	213.3
70°	467.4	328.8	206.1	188.4	181.2
72.5°	396.4	264.8	172.3	158.2	154.6
75°	327.0	202.5	142.2	129.7	128.1
77.5°	257.8	143.9	112.0	104.9	101.3
80°	193.6	103.1	85.2	78.2	78.2
82.5°	135.0	69.4	58.6	55.0	55.0
85°	76.3	39.0	33.7	33.7	33.7
87.5°	28.5	14.2	14.2	12.4	12.4
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	8.10	8.90	9.10	9.90	11.23	4.07	4.87	5.07	5.88	7.20
	3H	9.78	10.49	10.78	11.50	12.85	5.26	5.98	6.27	6.99	8.34
	4H	10.38	11.06	11.40	12.08	13.43	5.71	6.39	6.73	7.40	8.76
	6H	10.81	11.43	11.83	12.45	13.81	6.03	6.66	7.06	7.68	9.04
	8H	10.93	11.52	11.97	12.56	13.92	6.12	6.72	7.16	7.75	9.11
	12H	10.99	11.56	12.03	12.58	13.97	6.17	6.73	7.21	7.76	9.15
4H	2H	8.12	8.79	9.14	9.81	11.16	4.67	5.34	5.69	6.36	7.71
	3H	9.94	10.51	10.98	11.55	12.92	6.02	6.58	7.05	7.62	8.99
	4H	10.63	11.15	11.68	12.18	13.58	6.56	7.08	7.60	8.11	9.50
	6H	11.15	11.59	12.20	12.65	14.04	6.98	7.42	8.03	8.48	9.87
	8H	11.32	11.74	12.38	12.79	14.19	7.11	7.52	8.16	8.58	9.98
	12H	11.42	11.79	12.49	12.86	14.26	7.18	7.55	8.25	8.61	10.02
8H	4H	10.60	11.01	11.65	12.06	13.47	6.84	7.25	7.89	8.31	9.71
	6H	11.17	11.51	12.24	12.60	14.00	7.36	7.70	8.44	8.79	10.19
	8H	11.38	11.68	12.47	12.76	14.18	7.55	7.85	8.63	8.93	10.35
	12H	11.52	11.78	12.61	12.86	14.32	7.67	7.94	8.76	9.01	10.47
12H	4H	10.55	10.92	11.62	11.99	13.40	6.85	7.22	7.91	8.28	9.69
	6H	11.14	11.44	12.22	12.52	13.94	7.41	7.71	8.49	8.79	10.21
	8H	11.36	11.63	12.45	12.70	14.16	7.62	7.88	8.71	8.96	10.42

END OF REPORT