

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: P921629

Luminaire Tested: DFN2DIP-HX3F0-030D060US940-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P921629
REPORT IS A COMBINATION OF REPORTS P900764 AND P897645
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX3F0-030D060US940-RLLONL
Description: 3 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

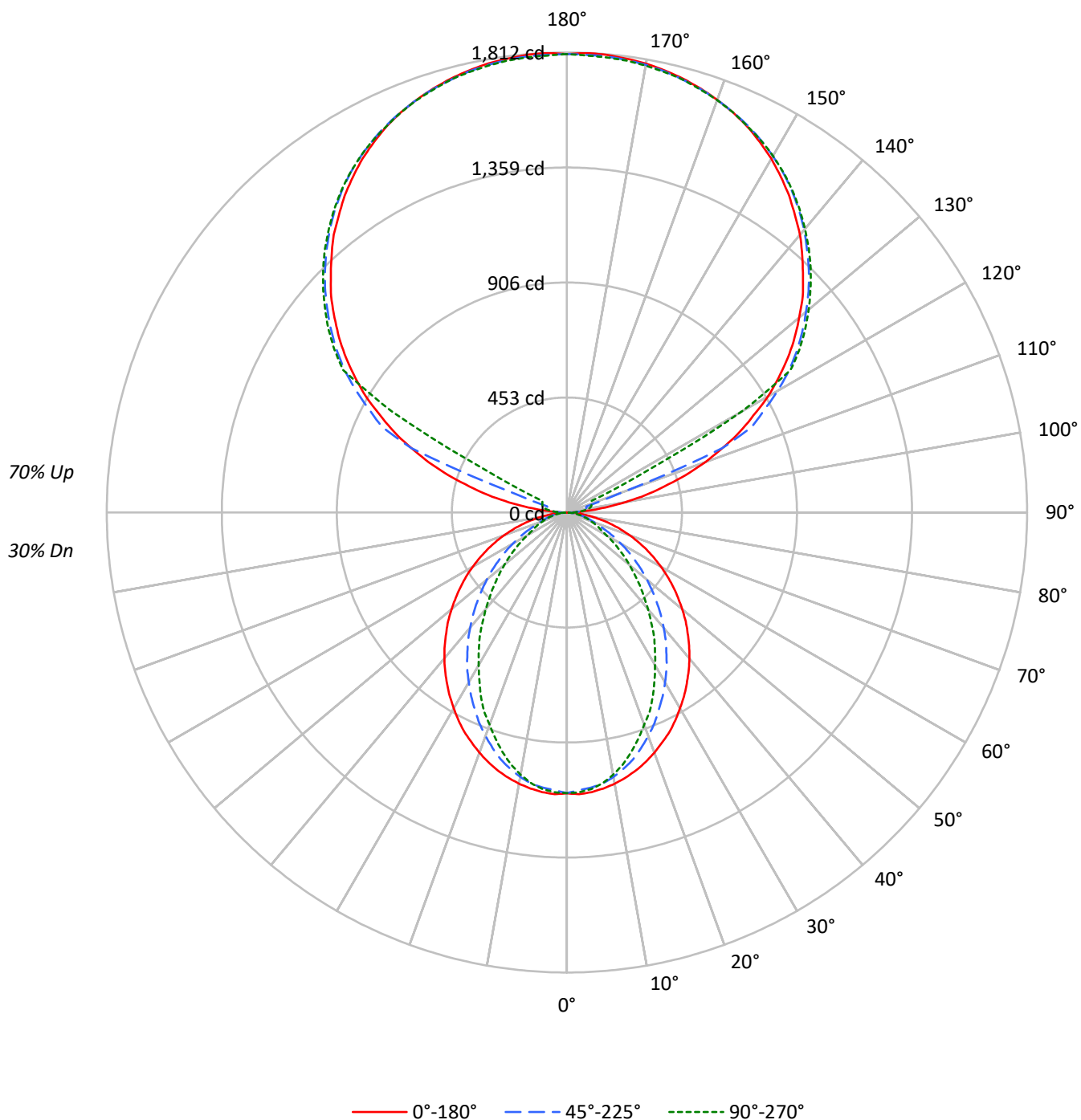
Lumens per Lamp: N/A
Luminaire Lumens: 7570.6 lumens
Efficiency: N/A
Efficacy: 109.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.84' x L: 3.28' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 69
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.983
Total Harmonic Distortion (THDi): 0.073
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	102	102	102	102	92	92	92	92	72	72	72	54	54	54	38	38	38
1	94	90	86	83	84	81	77	75	64	62	60	48	47	46	34	33	32
2	85	78	73	68	76	71	66	62	56	53	50	43	40	39	30	29	28
3	78	69	62	57	70	62	57	52	50	46	42	38	35	33	27	25	24
4	71	61	54	48	64	55	49	44	44	40	36	34	31	28	24	22	21
5	66	55	47	41	59	49	43	38	40	35	31	30	27	25	22	20	18
6	60	49	41	36	54	44	38	33	36	31	27	28	24	22	20	18	16
7	56	44	37	31	50	40	34	29	32	28	24	25	22	19	18	16	15
8	52	40	33	28	46	36	30	25	29	25	21	23	20	17	17	15	13
9	48	37	29	25	43	33	27	23	27	22	19	21	18	15	16	13	12
10	45	33	27	22	40	30	24	20	25	20	17	20	16	14	14	12	11

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1281	1281	1281
5°	1282	1260	1268
10°	1269	1234	1226
15°	1251	1192	1161
20°	1227	1135	1083
25°	1203	1071	1006
30°	1171	1006	910
35°	1139	936	826
40°	1107	863	729
45°	1069	783	641
50°	1030	702	555
55°	989	616	473
60°	942	525	389
65°	888	434	349
70°	822	348	315
75°	739	305	285
80°	620	253	245
85°	424	165	180

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1157 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	103.6	1.4
10°-20°	284.5	3.8
20°-30°	399.4	5.3
30°-40°	435.3	5.8
40°-50°	400.1	5.3
50°-60°	314.2	4.2
60°-70°	204.5	2.7
70°-80°	105.3	1.4
80°-90°	30.0	0.4
90°-100°	59.5	0.8
100°-110°	222.0	2.9
110°-120°	588.7	7.8
120°-130°	976.3	12.9
130°-140°	1037.1	13.7
140°-150°	963.9	12.7
150°-160°	774.9	10.2
160°-170°	499.3	6.6
170°-180°	171.9	2.3
0°-30°	787.5	10.4
0°-40°	1222.8	16.2
0°-60°	1937.2	25.6
0°-90°	2277.0	30.1
90°-120°	870.2	11.5
90°-150°	3847.4	50.8
90°-180°	5294.0	69.9
0°-180°	7570.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1106	1106	1106	1106	1106	
5°	1106	1101	1088	1097	1094	105
15°	1052	1040	1007	988	978	296
25°	955	922	856	816	800	439
35°	822	771	683	620	598	515
45°	672	605	500	429	405	519
55°	511	433	325	265	246	457
65°	345	264	174	140	137	342
75°	184	114	80	73	72	195
85°	43	22	19	19	19	49
90°	1	16	26	33	35	7
95°	85	42	51	58	56	101
105°	397	436	80	94	99	424
115°	751	774	806	201	107	740
125°	1062	1079	1104	1113	1117	947
135°	1314	1335	1347	1360	1358	1015
145°	1525	1523	1546	1555	1548	954
155°	1679	1667	1683	1691	1680	774
165°	1769	1761	1765	1774	1765	500
175°	1810	1800	1803	1812	1799	172
180°	1806	1806	1806	1806	1806	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1105.6	1105.6	1105.6	1105.6	1105.6
2.5°	1110.6	1105.6	1094.6	1104.7	1102.7
5°	1105.6	1100.6	1087.6	1096.6	1093.6
7.5°	1096.6	1090.7	1076.7	1080.6	1075.6
10°	1084.6	1077.6	1057.7	1054.5	1048.7
12.5°	1069.6	1060.6	1033.6	1027.6	1016.5
15°	1051.6	1040.5	1006.6	987.6	977.6
17.5°	1030.5	1014.6	972.5	950.6	934.5
20°	1006.6	986.5	936.5	911.6	889.5
22.5°	980.6	957.5	899.5	865.5	850.5
25°	954.6	922.5	856.5	815.5	800.4
27.5°	923.5	889.5	816.5	769.5	746.4
30°	890.6	852.5	772.4	721.5	694.4
32.5°	858.4	812.4	730.5	670.4	645.3
35°	822.5	771.4	683.4	620.4	598.3
37.5°	787.5	732.4	639.4	570.2	545.4
40°	750.5	690.5	593.3	522.3	496.3
42.5°	712.4	648.5	547.3	473.2	448.3
45°	672.4	605.3	500.3	429.2	405.2
47.5°	634.4	563.4	455.3	384.1	362.2
50°	592.4	521.3	411.3	342.1	321.2
52.5°	551.3	476.3	369.3	303.2	284.2
55°	511.2	433.2	325.1	265.2	246.2
57.5°	470.3	390.2	286.2	230.2	214.1
60°	428.2	348.2	245.1	194.1	178.2
62.5°	387.3	307.2	210.1	162.1	154.2
65°	345.2	264.1	174.1	140.1	137.1
67.5°	305.2	224.1	140.1	123.1	120.0
70°	263.1	185.1	116.0	106.0	102.0
72.5°	223.1	149.0	97.0	89.1	87.0
75°	184.0	114.0	80.1	73.0	72.1
77.5°	145.1	81.0	63.0	59.0	57.0
80°	109.1	58.1	48.0	44.1	44.1
82.5°	76.0	39.1	33.0	31.0	31.0
85°	43.0	21.9	19.0	19.0	19.0
87.5°	16.1	7.9	7.9	7.0	7.0
90°	1.2	15.7	26.0	32.7	35.2
92.5°	32.7	27.5	31.3	34.0	35.2
95°	84.9	41.7	50.9	57.6	56.2
97.5°	152.8	45.7	66.5	70.6	71.9
100°	231.3	52.3	74.5	84.9	87.5
102.5°	317.4	315.0	77.1	91.4	95.4
105°	397.2	436.4	79.7	94.0	99.3
107.5°	490.0	522.5	82.4	96.7	101.9
110°	578.9	606.2	228.7	98.1	103.2

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	662.5	685.9	663.7	100.5	104.6
115°	751.3	773.5	806.2	201.3	107.2
117.5°	828.3	854.4	876.7	689.8	347.5
120°	914.6	934.2	957.8	973.4	797.0
122.5°	987.7	1008.6	1034.8	1042.6	1044.0
125°	1062.2	1079.2	1104.0	1113.2	1117.0
127.5°	1130.2	1148.4	1168.1	1181.2	1182.4
130°	1194.2	1215.1	1229.4	1243.8	1242.6
132.5°	1259.5	1276.6	1290.8	1302.6	1301.4
135°	1314.5	1335.4	1347.0	1360.2	1357.5
137.5°	1371.8	1387.5	1400.7	1413.7	1409.9
140°	1428.0	1438.6	1452.9	1464.6	1458.1
142.5°	1475.2	1484.3	1501.3	1511.6	1505.1
145°	1524.8	1523.4	1545.6	1554.8	1548.3
147.5°	1567.8	1563.9	1586.1	1592.6	1587.5
150°	1609.7	1600.5	1621.5	1629.2	1622.7
152.5°	1644.9	1634.5	1654.0	1662.0	1652.8
155°	1678.9	1667.2	1682.9	1690.7	1680.2
157.5°	1706.4	1695.9	1707.7	1716.9	1706.4
160°	1729.9	1722.0	1729.9	1737.7	1728.6
162.5°	1750.7	1742.9	1749.4	1758.6	1746.9
165°	1769.1	1761.3	1765.1	1774.3	1765.1
167.5°	1783.4	1775.6	1779.6	1788.8	1776.9
170°	1795.3	1787.3	1790.0	1799.1	1787.3
172.5°	1803.0	1795.3	1797.9	1807.1	1795.3
175°	1809.5	1800.4	1803.0	1812.1	1799.1
177.5°	1812.1	1803.0	1804.4	1813.6	1801.8
180°	1805.6	1805.6	1805.6	1805.6	1805.6

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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	5.74	6.43	6.86	7.54	9.07	1.72	2.41	2.84	3.52	5.05
	3H	7.40	8.02	8.52	9.13	10.68	2.89	3.51	4.02	4.62	6.17
	4H	8.00	8.58	9.13	9.70	11.25	3.33	3.92	4.47	5.03	6.59
	6H	8.41	8.94	9.55	10.06	11.63	3.64	4.18	4.78	5.30	6.87
	8H	8.52	9.04	9.67	10.17	11.73	3.73	4.24	4.87	5.37	6.93
	12H	8.58	9.06	9.73	10.19	11.77	3.76	4.25	4.91	5.38	6.96
4H	2H	5.74	6.33	6.88	7.44	9.00	2.29	2.88	3.43	3.99	5.55
	3H	7.55	8.04	8.70	9.18	10.74	3.62	4.11	4.77	5.25	6.82
	4H	8.23	8.68	9.38	9.81	11.39	4.16	4.61	5.31	5.74	7.33
	6H	8.73	9.11	9.89	10.27	11.84	4.57	4.95	5.72	6.11	7.68
	8H	8.90	9.26	10.05	10.40	11.99	4.69	5.05	5.85	6.20	7.79
	12H	8.98	9.31	10.15	10.46	12.06	4.75	5.07	5.92	6.23	7.83
8H	4H	8.19	8.54	9.34	9.69	11.28	4.43	4.79	5.58	5.93	7.52
	6H	8.74	9.03	9.91	10.22	11.81	4.93	5.23	6.11	6.42	8.01
	8H	8.95	9.21	10.13	10.37	11.98	5.12	5.38	6.30	6.55	8.16
	12H	9.08	9.30	10.26	10.47	12.11	5.23	5.46	6.41	6.62	8.26
12H	4H	8.13	8.45	9.30	9.61	11.21	4.42	4.75	5.60	5.91	7.50
	6H	8.71	8.97	9.89	10.14	11.75	4.98	5.24	6.16	6.41	8.02
	8H	8.92	9.15	10.11	10.31	11.96	5.18	5.41	6.36	6.57	8.21