

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: P921963

Luminaire Tested: DFN2DIP-PN2F0-020D060US940-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P921963
REPORT IS A COMBINATION OF REPORTS P901022 AND P897905
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN2F0-020D060US940-RLLONL
Description: 2 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

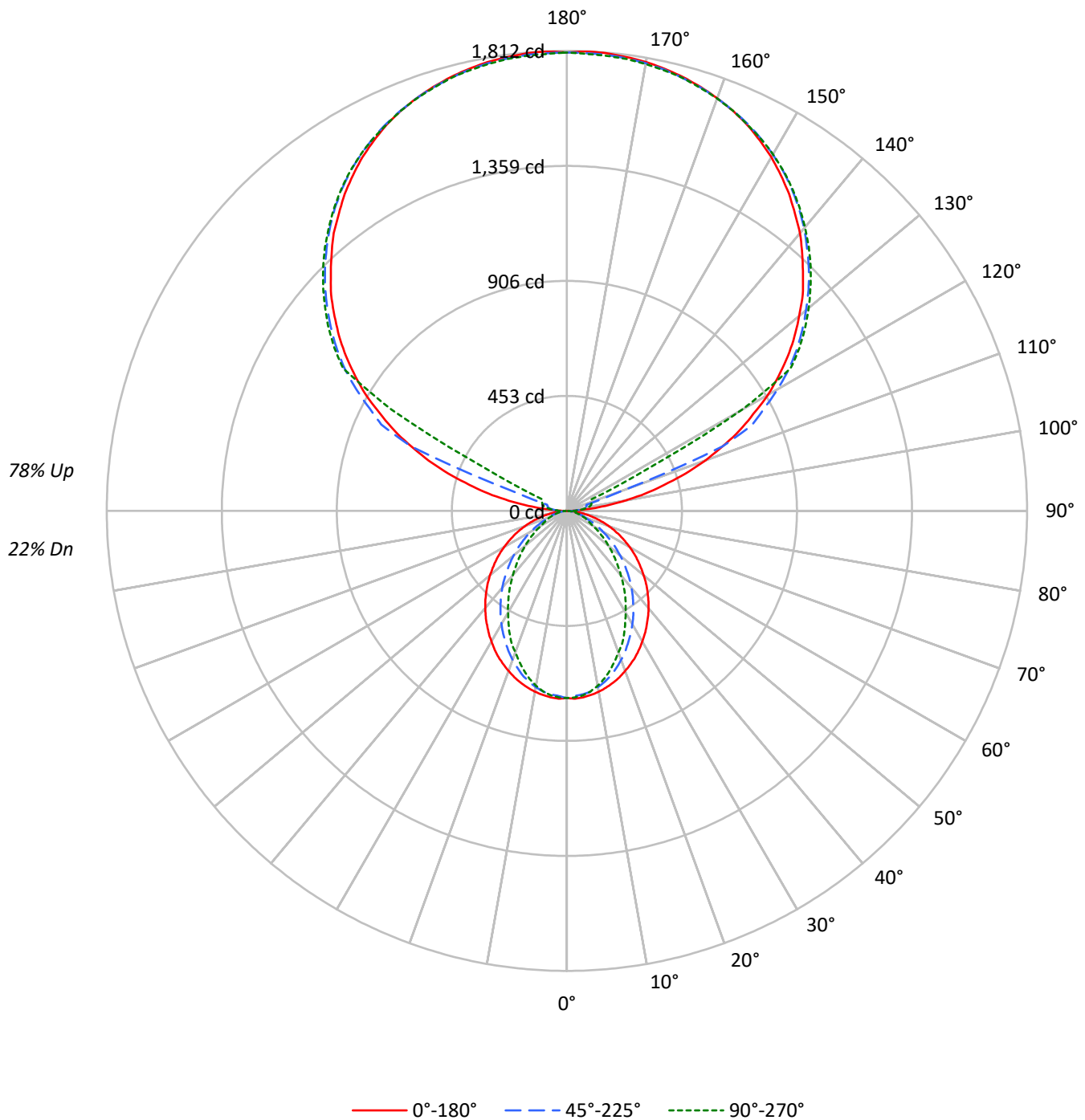
Lumens per Lamp: N/A
Luminaire Lumens: 6812.6 lumens
Efficiency: N/A
Efficacy: 98.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.17' x L: 2.29' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 69
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.099
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	101	101	101	101	89	89	89	89	68	68	68	49	49	49	31	31	31
1	92	88	84	81	81	78	75	72	60	58	56	43	42	41	27	27	26
2	84	77	71	66	74	68	64	60	52	49	47	38	36	34	24	23	22
3	76	68	61	55	68	60	55	50	46	43	39	34	31	29	22	20	19
4	70	60	52	47	62	53	47	42	41	37	34	30	27	25	20	18	17
5	64	53	46	40	57	48	41	36	37	32	29	27	24	22	18	16	15
6	59	48	40	35	52	43	36	31	33	29	25	24	21	19	16	14	13
7	54	43	35	30	48	38	32	27	30	25	22	22	19	17	15	13	12
8	50	39	32	27	45	35	29	24	27	23	20	20	17	15	14	12	10
9	47	35	28	23	42	32	26	21	25	20	17	19	16	13	12	11	9
10	44	32	25	21	39	29	23	19	23	19	16	17	14	12	12	10	9

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1596	1596	1596
5°	1596	1568	1579
10°	1578	1534	1525
15°	1554	1479	1444
20°	1522	1407	1344
25°	1490	1325	1248
30°	1448	1242	1128
35°	1407	1154	1022
40°	1364	1062	901
45°	1316	961	791
50°	1265	859	684
55°	1211	751	581
60°	1150	638	477
65°	1079	524	426
70°	992	417	382
75°	883	361	344
80°	727	294	290
85°	474	183	207

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1658 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	69.1	1.0
10°-20°	189.6	2.8
20°-30°	266.3	3.9
30°-40°	290.2	4.3
40°-50°	266.8	3.9
50°-60°	209.5	3.1
60°-70°	136.4	2.0
70°-80°	70.2	1.0
80°-90°	21.1	0.3
90°-100°	59.5	0.9
100°-110°	222.0	3.3
110°-120°	588.7	8.6
120°-130°	976.3	14.3
130°-140°	1037.1	15.2
140°-150°	963.9	14.1
150°-160°	774.9	11.4
160°-170°	499.3	7.3
170°-180°	171.9	2.5
0°-30°	525.0	7.7
0°-40°	815.2	12.0
0°-60°	1291.4	19.0
0°-90°	1519.1	22.3
90°-120°	870.2	12.8
90°-150°	3847.4	56.5
90°-180°	5294.0	77.7
0°-180°	6812.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	737	737	737	737	737	
5°	737	734	725	731	729	70
15°	701	694	671	658	652	198
25°	636	615	571	544	534	293
35°	548	514	456	414	399	343
45°	448	404	334	286	270	346
55°	341	289	217	177	164	305
65°	230	176	116	94	91	228
75°	123	76	53	49	48	130
85°	29	15	13	13	13	33
90°	1	16	26	33	35	6
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°	737.1	737.1	737.1	737.1	737.1
2.5°	740.4	737.1	729.7	736.5	735.1
5°	737.1	733.8	725.0	731.1	729.1
7.5°	731.1	727.1	717.7	720.4	717.0
10°	723.1	718.4	705.1	703.0	699.1
12.5°	713.1	707.0	689.0	685.1	677.7
15°	701.1	693.7	671.0	658.3	651.8
17.5°	687.1	676.4	648.4	633.6	623.0
20°	671.0	657.6	624.4	607.7	593.0
22.5°	653.7	638.4	599.7	577.0	567.0
25°	636.4	615.0	571.0	543.7	533.6
27.5°	615.7	593.0	544.3	512.9	497.6
30°	593.7	568.3	515.0	481.0	462.9
32.5°	572.3	541.6	487.0	446.9	430.3
35°	548.3	514.3	455.7	413.6	398.9
37.5°	524.9	488.2	426.2	380.2	363.6
40°	500.2	460.3	395.6	348.2	330.8
42.5°	474.9	432.3	364.9	315.5	298.9
45°	448.3	403.5	333.6	286.1	270.1
47.5°	422.9	375.6	303.5	256.1	241.5
50°	394.9	347.6	274.2	228.1	214.2
52.5°	367.5	317.4	246.1	202.2	189.5
55°	340.8	288.8	216.8	176.8	164.1
57.5°	313.5	260.1	190.8	153.5	142.8
60°	285.5	232.1	163.5	129.5	118.8
62.5°	258.2	204.8	140.1	108.1	102.7
65°	230.2	176.1	116.1	93.5	91.4
67.5°	203.5	149.4	93.5	82.0	80.1
70°	175.4	123.4	77.3	70.7	68.0
72.5°	148.7	99.3	64.6	59.4	58.1
75°	122.7	76.0	53.3	48.7	48.1
77.5°	96.8	54.0	42.0	39.3	38.0
80°	72.7	38.7	32.0	29.3	29.3
82.5°	50.6	26.0	22.0	20.7	20.7
85°	28.6	14.6	12.7	12.7	12.7
87.5°	10.7	5.4	5.4	4.6	4.6
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	5.23	5.88	6.40	7.02	8.64	1.20	1.85	2.37	3.00	4.62
	3H	6.87	7.45	8.05	8.61	10.24	2.36	2.94	3.53	4.09	5.73
	4H	7.46	8.01	8.64	9.16	10.80	2.79	3.34	3.97	4.49	6.13
	6H	7.85	8.36	9.04	9.52	11.17	3.08	3.59	4.27	4.75	6.40
	8H	7.97	8.45	9.16	9.62	11.26	3.16	3.64	4.35	4.81	6.46
	12H	8.01	8.47	9.21	9.64	11.30	3.19	3.65	4.39	4.81	6.48
4H	2H	5.22	5.77	6.41	6.93	8.57	1.76	2.31	2.95	3.47	5.11
	3H	7.01	7.47	8.20	8.65	10.30	3.07	3.53	4.27	4.71	6.36
	4H	7.68	8.10	8.87	9.27	10.94	3.60	4.02	4.80	5.19	6.86
	6H	8.16	8.52	9.36	9.72	11.37	3.99	4.35	5.19	5.54	7.20
	8H	8.32	8.66	9.52	9.84	11.52	4.11	4.44	5.30	5.63	7.30
	12H	8.40	8.70	9.61	9.90	11.58	4.15	4.46	5.37	5.65	7.33
8H	4H	7.63	7.96	8.83	9.15	10.82	3.85	4.19	5.05	5.37	7.05
	6H	8.17	8.44	9.38	9.67	11.34	4.34	4.62	5.56	5.84	7.52
	8H	8.37	8.61	9.59	9.81	11.50	4.52	4.76	5.74	5.96	7.65
	12H	8.48	8.69	9.71	9.89	11.62	4.62	4.83	5.84	6.03	7.75
12H	4H	7.57	7.87	8.78	9.07	10.75	3.85	4.15	5.06	5.35	7.03
	6H	8.14	8.38	9.36	9.58	11.27	4.38	4.62	5.61	5.83	7.52
	8H	8.34	8.55	9.56	9.75	11.47	4.57	4.78	5.80	5.98	7.71