

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: P924016

Luminaire Tested: DFN2DIP-4P3F0-020D060US950-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P924016
REPORT IS A COMBINATION OF REPORTS P899070 AND P895917
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P3F0-020D060US950-RLLFLL
Description: 3 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

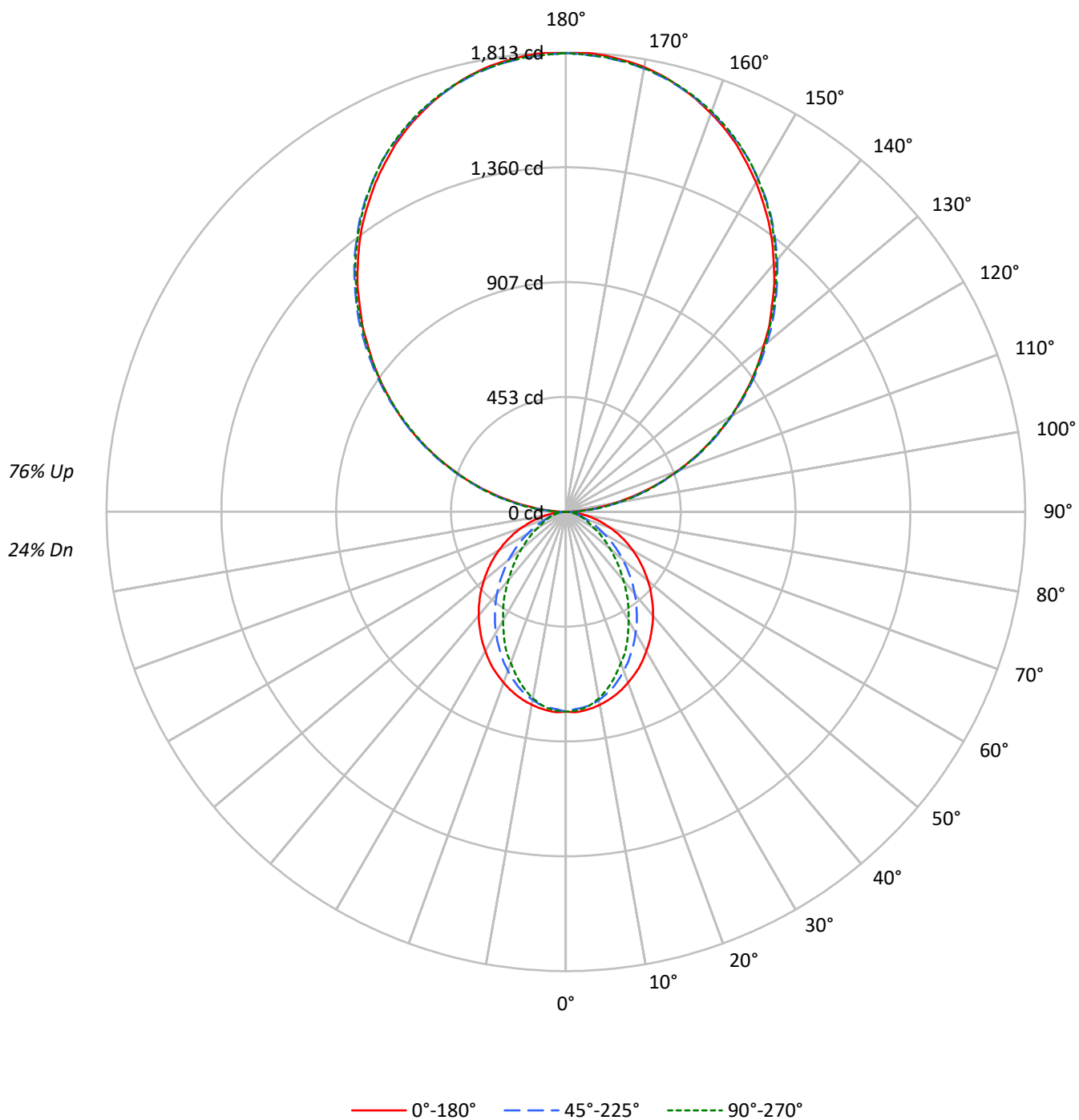
Lumens per Lamp: N/A
Luminaire Lumens: 6687.5 lumens
Efficiency: N/A
Efficacy: 106.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.07' x L: 3.07' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 62.8
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9951
Total Harmonic Distortion (THDi): 0.07
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	69	69	69	50	50	50	33	33	33
1	92	88	85	81	82	79	76	73	61	59	57	44	43	42	29	28	28
2	84	77	71	67	75	69	64	60	53	50	47	39	37	35	26	25	24
3	77	68	61	56	68	61	55	50	47	43	40	35	32	30	23	22	20
4	70	60	53	47	62	54	48	43	42	38	34	31	28	26	21	19	18
5	64	54	46	40	57	48	42	37	38	33	29	28	25	22	19	17	16
6	59	48	40	35	53	43	37	32	34	29	26	25	22	20	17	15	14
7	55	43	36	30	49	39	32	28	31	26	23	23	20	17	16	14	12
8	51	39	32	27	45	35	29	24	28	23	20	21	18	16	14	12	11
9	47	36	29	24	42	32	26	22	25	21	18	19	16	14	13	11	10
10	44	33	26	21	39	29	23	19	23	19	16	18	15	13	12	10	9

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	899	899	899
5°	900	884	890
10°	890	866	861
15°	877	837	816
20°	860	797	760
25°	843	752	707
30°	820	706	640
35°	798	657	580
40°	775	606	512
45°	749	550	451
50°	721	493	391
55°	692	432	333
60°	659	369	274
65°	621	305	247
70°	574	245	223
75°	516	214	202
80°	431	178	174
85°	292	116	129

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1814 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	73.9	1.1
10°-20°	202.9	3.0
20°-30°	284.8	4.3
30°-40°	310.5	4.6
40°-50°	285.4	4.3
50°-60°	224.1	3.4
60°-70°	145.9	2.2
70°-80°	75.1	1.1
80°-90°	24.3	0.4
90°-100°	112.0	1.7
100°-110°	355.9	5.3
110°-120°	609.1	9.1
120°-130°	801.1	12.0
130°-140°	899.2	13.4
140°-150°	881.7	13.2
150°-160°	739.6	11.1
160°-170°	490.5	7.3
170°-180°	171.4	2.6
0°-30°	561.6	8.4
0°-40°	872.1	13.0
0°-60°	1381.7	20.7
0°-90°	1626.9	24.3
90°-120°	1077.0	16.1
90°-150°	3659.0	54.7
90°-180°	5061.0	75.7
0°-180°	6687.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	789	789	789	789	789	
5°	789	785	776	782	780	75
15°	750	742	718	704	697	211
25°	681	658	611	582	571	313
35°	587	550	488	442	427	367
45°	480	432	357	306	289	370
55°	365	309	232	189	176	326
65°	246	188	124	100	98	244
75°	131	81	57	52	51	139
85°	31	16	14	14	14	35
90°	2	20	54	50	52	7
95°	80	95	98	98	95	89
105°	329	333	336	339	339	347
115°	611	620	617	616	611	605
125°	889	903	898	893	892	794
135°	1150	1167	1170	1168	1164	889
145°	1396	1407	1416	1417	1411	872
155°	1596	1601	1606	1613	1608	735
165°	1737	1735	1735	1746	1738	490
175°	1807	1803	1799	1810	1801	172
180°	1810	1810	1810	1810	1810	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	788.6	788.6	788.6	788.6	788.6
2.5°	792.1	788.6	780.7	787.9	786.5
5°	788.6	785.0	775.7	782.2	780.0
7.5°	782.2	777.9	767.9	770.7	767.1
10°	773.6	768.5	754.3	752.1	747.9
12.5°	762.9	756.4	737.2	733.0	725.0
15°	750.0	742.1	717.9	704.3	697.3
17.5°	735.1	723.6	693.7	677.9	666.6
20°	717.9	703.6	668.0	650.2	634.4
22.5°	699.4	683.0	641.6	617.3	606.6
25°	680.9	658.0	610.8	581.7	570.9
27.5°	658.7	634.4	582.3	548.7	532.3
30°	635.2	608.0	550.9	514.6	495.2
32.5°	612.3	579.5	521.0	478.1	460.3
35°	586.6	550.3	487.5	442.5	426.7
37.5°	561.6	522.3	456.0	406.8	388.9
40°	535.2	492.5	423.2	372.5	353.9
42.5°	508.1	462.5	390.4	337.5	319.8
45°	479.6	431.7	356.9	306.1	289.0
47.5°	452.5	401.8	324.7	274.0	258.3
50°	422.5	371.9	293.4	244.0	229.2
52.5°	393.1	339.6	263.3	216.3	202.7
55°	364.6	309.0	231.9	189.2	175.5
57.5°	335.4	278.3	204.2	164.2	152.7
60°	305.5	248.3	174.9	138.5	127.1
62.5°	276.2	219.1	149.9	115.6	109.9
65°	246.2	188.4	124.2	100.0	97.8
67.5°	217.7	159.8	100.0	87.8	85.7
70°	187.7	132.0	82.7	75.7	72.8
72.5°	159.1	106.3	69.2	63.5	62.1
75°	131.3	81.3	57.0	52.1	51.4
77.5°	103.5	57.8	44.9	42.1	40.6
80°	77.8	41.4	34.2	31.4	31.4
82.5°	54.2	27.9	23.6	22.1	22.1
85°	30.6	15.6	13.5	13.5	13.5
87.5°	11.4	5.7	5.7	5.0	5.0
90°	1.6	19.7	53.5	50.2	51.8
92.5°	33.9	45.9	47.5	49.1	49.1
95°	79.7	94.9	97.7	97.7	94.9
97.5°	132.6	146.8	152.8	152.8	152.8
100°	193.8	206.3	210.6	210.6	209.0
102.5°	258.2	267.4	273.4	275.0	273.4
105°	328.6	332.9	336.2	339.0	339.0
107.5°	398.4	405.0	405.0	406.0	398.4
110°	466.1	474.8	474.8	474.8	470.4

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	539.2	548.5	546.8	542.4	539.2
115°	611.2	620.0	617.2	615.6	611.2
117.5°	682.8	694.8	687.1	682.8	678.4
120°	754.8	766.8	754.8	754.8	749.8
122.5°	820.2	835.5	827.9	823.6	820.2
125°	889.0	902.7	898.3	893.4	891.8
127.5°	956.2	973.1	967.1	960.6	956.2
130°	1019.0	1038.6	1035.9	1032.6	1026.6
132.5°	1089.4	1104.6	1105.7	1098.1	1093.7
135°	1150.0	1166.8	1170.1	1168.5	1164.1
137.5°	1217.6	1231.2	1234.0	1232.9	1226.4
140°	1277.1	1290.8	1298.4	1298.4	1292.4
142.5°	1338.2	1351.8	1356.2	1357.8	1351.8
145°	1396.1	1407.0	1415.7	1417.4	1411.3
147.5°	1447.9	1461.5	1468.1	1470.8	1464.8
150°	1501.4	1510.7	1516.7	1521.5	1516.7
152.5°	1548.8	1558.2	1565.8	1571.8	1565.8
155°	1596.3	1600.7	1605.6	1613.3	1608.3
157.5°	1637.3	1640.6	1643.3	1654.2	1646.6
160°	1673.9	1677.1	1678.8	1688.0	1681.5
162.5°	1707.7	1707.7	1709.3	1719.7	1712.0
165°	1736.6	1734.9	1734.9	1745.9	1738.3
167.5°	1762.8	1757.9	1757.9	1768.8	1761.2
170°	1782.5	1778.1	1776.4	1787.3	1778.1
172.5°	1796.1	1791.7	1790.1	1801.0	1791.7
175°	1807.0	1802.7	1799.3	1810.3	1801.0
177.5°	1813.0	1808.7	1805.3	1814.6	1805.3
180°	1810.3	1810.3	1810.3	1810.3	1810.3

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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	3.66	4.31	4.81	5.45	7.05	0.00	0.28	0.77	1.42	3.01
	3H	5.32	5.90	6.48	7.05	8.66	0.79	1.38	1.95	2.52	4.14
	4H	5.91	6.47	7.08	7.62	9.24	1.23	1.78	2.40	2.93	4.55
	6H	6.32	6.84	7.50	7.99	9.61	1.53	2.05	2.71	3.19	4.82
	8H	6.44	6.93	7.62	8.09	9.71	1.61	2.10	2.79	3.27	4.89
	12H	6.50	6.96	7.68	8.12	9.76	1.65	2.11	2.83	3.27	4.91
4H	2H	3.65	4.21	4.83	5.36	6.97	0.19	0.75	1.37	1.90	3.51
	3H	5.46	5.92	6.64	7.10	8.73	1.52	1.98	2.70	3.16	4.78
	4H	6.14	6.57	7.32	7.73	9.38	2.05	2.48	3.24	3.64	5.29
	6H	6.64	7.01	7.83	8.19	9.83	2.46	2.82	3.64	4.01	5.64
	8H	6.81	7.15	8.00	8.33	9.98	2.58	2.92	3.76	4.09	5.75
	12H	6.90	7.21	8.10	8.39	10.05	2.63	2.94	3.83	4.13	5.78
8H	4H	6.09	6.44	7.28	7.61	9.26	2.32	2.66	3.50	3.83	5.49
	6H	6.65	6.93	7.85	8.15	9.80	2.82	3.10	4.03	4.32	5.97
	8H	6.86	7.11	8.07	8.30	9.97	3.01	3.25	4.22	4.44	6.12
	12H	6.99	7.20	8.20	8.40	10.10	3.11	3.33	4.32	4.52	6.22
12H	4H	6.04	6.35	7.24	7.53	9.19	2.31	2.62	3.52	3.81	5.47
	6H	6.62	6.87	7.83	8.06	9.73	2.87	3.11	4.08	4.31	5.98
	8H	6.83	7.05	8.05	8.24	9.94	3.06	3.28	4.28	4.47	6.17

END OF REPORT