

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: P918605

Luminaire Tested: DFN2DIP-4P3F0-050D020US935-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P918605
REPORT IS A COMBINATION OF REPORTS P900556 AND P897473
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P3F0-050D020US935-RLLONL
Description: 3 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

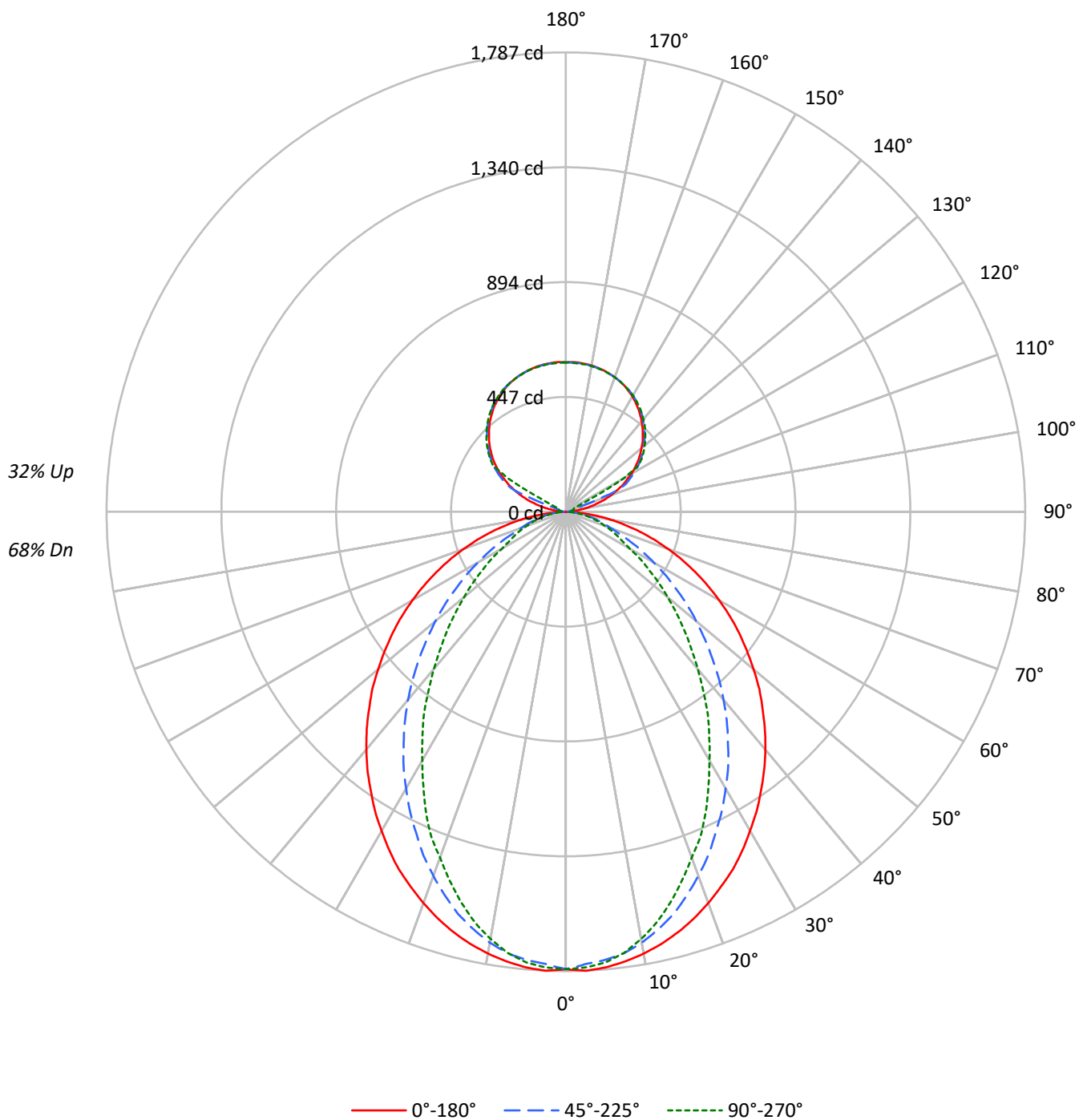
Lumens per Lamp: N/A
Luminaire Lumens: 5364.0 lumens
Efficiency: N/A
Efficacy: 83.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.07' x L: 3.07' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 64.2
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9971
Total Harmonic Distortion (THDi): 0.049
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P918605

CATALOG NUMBER: DFN2DIP-4P3F0-050D020US935-RLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P918605

CATALOG NUMBER: DFN2DIP-4P3F0-050D020US935-RLLONL

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
RCR																	
0	111	111	111	111	105	105	105	105	93	93	93		83	83	83		73
1	103	98	95	91	97	93	90	87	83	81	78		74	72	70		65
2	94	87	81	76	88	82	77	72	74	69	66		66	63	60		58
3	86	77	70	64	81	73	66	61	66	60	56		59	55	51		52
4	79	69	61	55	75	65	58	53	59	53	49		53	48	45		47
5	73	62	53	48	69	59	51	46	53	47	42		48	43	39		43
6	68	56	47	42	64	53	46	40	48	42	38		43	39	35		39
7	63	50	43	37	59	48	41	36	44	38	33		40	35	31		36
8	58	46	38	33	55	44	37	32	40	34	30		37	32	28		33
9	55	42	35	30	52	41	34	29	37	31	27		34	29	25		31
10	51	39	32	27	48	37	31	26	34	29	25		31	27	23		29

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2028	2028	2028
5°	2030	1994	2008
10°	2008	1954	1942
15°	1979	1888	1840
20°	1942	1798	1716
25°	1903	1697	1595
30°	1851	1593	1443
35°	1800	1482	1310
40°	1749	1368	1157
45°	1689	1240	1018
50°	1627	1112	882
55°	1562	975	752
60°	1487	833	618
65°	1400	688	556
70°	1295	553	502
75°	1163	484	455
80°	972	402	393
85°	660	262	292

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 1689 cd/sqm

TEST NUMBER: P918605

CATALOG NUMBER: DFN2DIP-4P3F0-050D020US935-RLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	166.8	3.1
10°-20°	457.8	8.5
20°-30°	642.7	12.0
30°-40°	700.6	13.1
40°-50°	643.9	12.0
50°-60°	505.7	9.4
60°-70°	329.2	6.1
70°-80°	169.5	3.2
80°-90°	44.3	0.8
90°-100°	19.2	0.4
100°-110°	71.4	1.3
110°-120°	189.5	3.5
120°-130°	314.2	5.9
130°-140°	333.8	6.2
140°-150°	310.2	5.8
150°-160°	249.4	4.6
160°-170°	160.7	3.0
170°-180°	55.3	1.0
0°-30°	1267.2	23.6
0°-40°	1967.8	36.7
0°-60°	3117.4	58.1
0°-90°	3660.3	68.2
90°-120°	280.0	5.2
90°-150°	1238.3	23.1
90°-180°	1704.0	31.8
0°-180°	5364.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1779	1779	1779	1779	1779	
5°	1779	1771	1750	1765	1760	169
15°	1692	1675	1620	1589	1573	477
25°	1536	1484	1378	1312	1288	706
35°	1324	1242	1100	998	963	828
45°	1082	974	805	691	652	836
55°	823	697	523	427	396	735
65°	556	425	280	226	221	551
75°	296	184	129	118	116	313
85°	69	35	31	31	31	79
90°	0	5	8	10	11	5
95°	27	13	16	18	18	32
105°	128	140	26	30	32	137
115°	242	249	260	65	34	238
125°	342	347	355	358	360	305
135°	423	430	434	438	437	327
145°	491	490	498	500	498	307
155°	540	537	542	544	541	249
165°	569	567	568	571	568	161
175°	582	580	580	583	579	55
180°	581	581	581	581	581	

TEST NUMBER: P918605

CATALOG NUMBER: DFN2DIP-4P3F0-050D020US935-RLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1779.3	1779.3	1779.3	1779.3	1779.3
2.5°	1787.3	1779.3	1761.5	1777.7	1774.4
5°	1779.3	1771.2	1750.2	1764.7	1760.0
7.5°	1764.7	1755.1	1732.6	1739.0	1730.9
10°	1745.4	1734.1	1702.0	1697.1	1687.5
12.5°	1721.3	1706.8	1663.3	1653.7	1635.9
15°	1692.3	1674.6	1619.9	1589.3	1573.2
17.5°	1658.5	1632.7	1565.0	1529.6	1503.8
20°	1619.9	1587.6	1507.1	1467.0	1431.4
22.5°	1578.0	1540.9	1447.5	1392.8	1368.7
25°	1536.1	1484.5	1378.3	1312.3	1288.1
27.5°	1486.3	1431.4	1313.9	1238.2	1201.2
30°	1433.1	1371.8	1243.0	1161.0	1117.4
32.5°	1381.6	1307.4	1175.5	1078.8	1038.5
35°	1323.6	1241.5	1099.8	998.3	962.9
37.5°	1267.2	1178.6	1029.0	917.7	877.6
40°	1207.6	1111.1	954.8	840.5	798.7
42.5°	1146.5	1043.4	880.8	761.6	721.4
45°	1082.1	974.1	805.1	690.7	652.0
47.5°	1020.9	906.6	732.7	618.3	582.9
50°	953.3	839.0	661.8	550.6	516.9
52.5°	887.2	766.4	594.2	487.9	457.4
55°	822.8	697.1	523.2	426.7	396.1
57.5°	756.8	628.0	460.5	370.4	344.6
60°	689.1	560.3	394.4	312.5	286.6
62.5°	623.2	494.4	338.1	260.9	248.1
65°	555.5	425.1	280.2	225.5	220.6
67.5°	491.1	360.7	225.5	198.0	193.2
70°	423.5	297.9	186.8	170.6	164.2
72.5°	359.1	239.9	156.2	143.4	140.1
75°	296.3	183.5	128.8	117.5	116.0
77.5°	233.5	130.4	101.5	95.0	91.7
80°	175.5	93.4	77.2	70.9	70.9
82.5°	122.3	62.9	53.1	49.9	49.9
85°	69.2	35.4	30.6	30.6	30.6
87.5°	25.8	12.8	12.8	11.3	11.3
90°	0.4	5.1	8.4	10.5	11.4
92.5°	10.5	8.9	10.1	10.9	11.4
95°	27.3	13.4	16.4	18.5	18.1
97.5°	49.2	14.7	21.4	22.7	23.2
100°	74.5	16.8	23.9	27.3	28.2
102.5°	102.2	101.3	24.8	29.4	30.7
105°	127.9	140.4	25.7	30.2	31.9
107.5°	157.7	168.2	26.5	31.1	32.8
110°	186.3	195.1	73.6	31.6	33.2



TEST NUMBER: P918605

CATALOG NUMBER: DFN2DIP-4P3F0-050D020US935-RLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	213.2	220.8	213.6	32.4	33.7
115°	241.8	248.9	259.5	64.7	34.5
117.5°	266.6	275.0	282.1	222.1	111.8
120°	294.4	300.7	308.2	313.3	256.5
122.5°	317.9	324.6	333.0	335.5	336.0
125°	341.9	347.3	355.3	358.3	359.6
127.5°	363.8	369.6	376.0	380.1	380.6
130°	384.3	391.1	395.7	400.4	399.9
132.5°	405.4	410.9	415.4	419.2	418.9
135°	423.1	429.8	433.5	437.8	437.0
137.5°	441.5	446.6	450.8	455.0	453.7
140°	459.6	463.0	467.6	471.4	469.3
142.5°	474.8	477.8	483.2	486.5	484.4
145°	490.8	490.3	497.5	500.4	498.3
147.5°	504.6	503.3	510.5	512.6	510.9
150°	518.1	515.1	521.9	524.3	522.3
152.5°	529.4	526.1	532.4	534.9	531.9
155°	540.4	536.6	541.7	544.2	540.8
157.5°	549.2	545.9	549.7	552.6	549.2
160°	556.8	554.2	556.8	559.3	556.4
162.5°	563.4	560.9	563.1	566.0	562.2
165°	569.4	566.9	568.1	571.1	568.1
167.5°	574.0	571.4	572.7	575.7	571.9
170°	577.8	575.2	576.1	579.0	575.2
172.5°	580.3	577.8	578.7	581.6	577.8
175°	582.4	579.5	580.3	583.2	579.0
177.5°	583.2	580.3	580.7	583.7	579.9
180°	581.2	581.2	581.2	581.2	581.2

TEST NUMBER: P918605

CATALOG NUMBER: DFN2DIP-4P3F0-050D020US935-RLONL

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	11.12	12.13	11.91	12.94	13.92	7.09	8.09	7.88	8.90	9.89
	3H	12.81	13.71	13.61	14.53	15.54	8.28	9.18	9.08	10.00	11.01
	4H	13.42	14.27	14.25	15.10	16.13	8.73	9.58	9.56	10.41	11.44
	6H	13.85	14.63	14.68	15.47	16.51	9.06	9.84	9.89	10.67	11.71
	8H	13.98	14.72	14.82	15.57	16.62	9.15	9.89	9.99	10.75	11.79
	12H	14.05	14.75	14.89	15.60	16.67	9.20	9.90	10.04	10.75	11.82
4H	2H	11.16	12.01	11.99	12.83	13.86	7.70	8.55	8.53	9.37	10.40
	3H	13.00	13.71	13.84	14.56	15.61	9.06	9.76	9.90	10.62	11.66
	4H	13.70	14.34	14.55	15.19	16.27	9.61	10.25	10.46	11.10	12.18
	6H	14.22	14.77	15.08	15.65	16.73	10.03	10.58	10.90	11.46	12.54
	8H	14.39	14.91	15.26	15.78	16.87	10.16	10.67	11.03	11.55	12.64
	12H	14.49	14.96	15.38	15.85	16.95	10.23	10.69	11.12	11.59	12.68
8H	4H	13.68	14.19	14.55	15.07	16.16	9.90	10.41	10.77	11.29	12.38
	6H	14.24	14.67	15.14	15.59	16.68	10.41	10.84	11.31	11.76	12.85
	8H	14.46	14.83	15.36	15.75	16.85	10.60	10.98	11.51	11.89	13.00
	12H	14.60	14.93	15.51	15.84	16.99	10.72	11.05	11.63	11.96	13.12
12H	4H	13.64	14.10	14.52	14.99	16.09	9.91	10.37	10.80	11.27	12.36
	6H	14.22	14.60	15.13	15.51	16.61	10.46	10.84	11.37	11.75	12.86
	8H	14.44	14.78	15.35	15.68	16.84	10.68	11.01	11.58	11.91	13.07

END OF REPORT