

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: P904964

Luminaire Tested: DFN2DIP-4P3F0-050D020US835-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P904964
REPORT IS A COMBINATION OF REPORTS P899036 AND P895917
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P3F0-050D020US835-RLLFLL
Description: 3 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

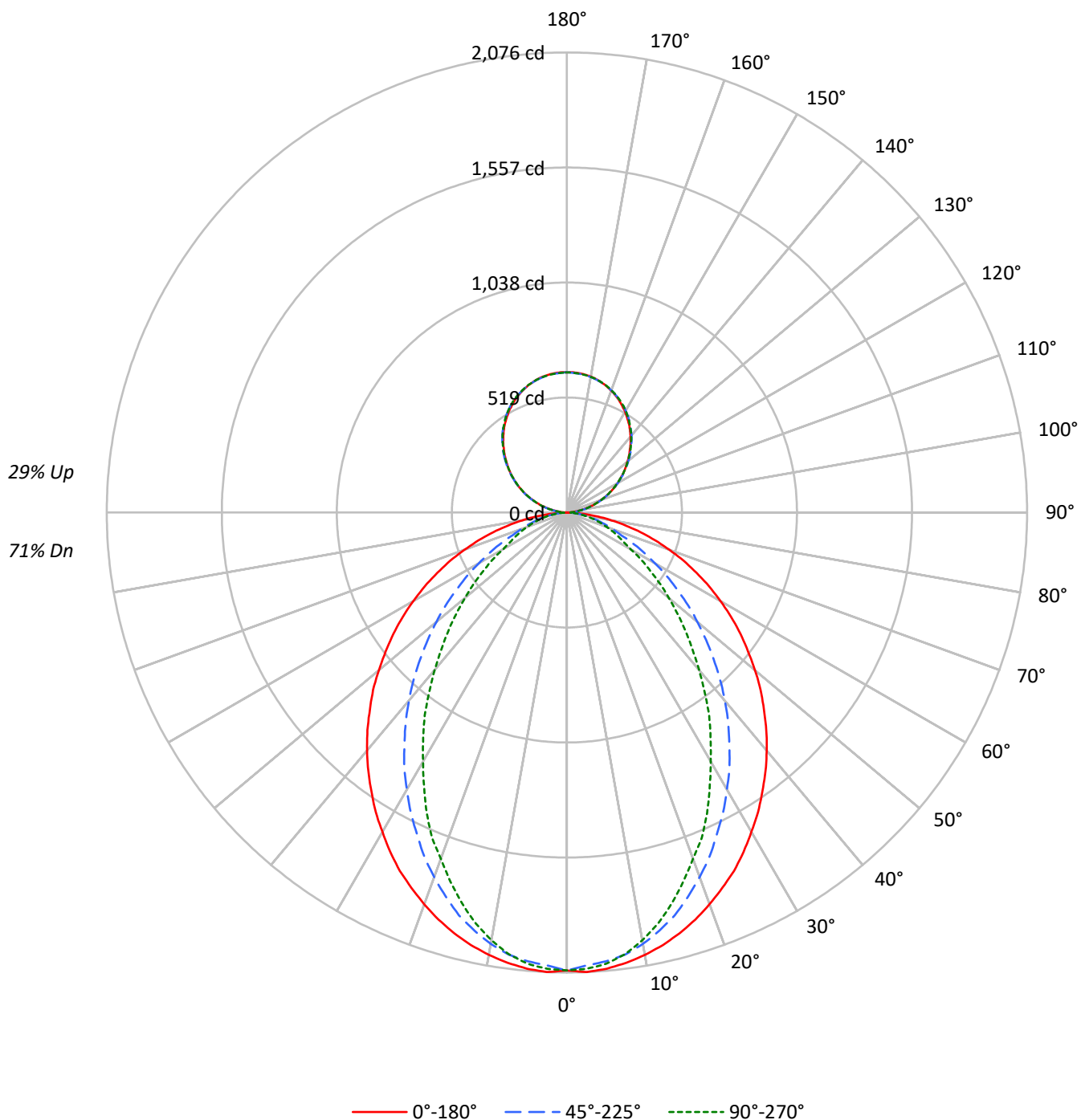
Lumens per Lamp: N/A
Luminaire Lumens: 6020.0 lumens
Efficiency: N/A
Efficacy: 93.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.07' x L: 3.07' x H: 0.1')
CIE Type: Semi-Direct

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: P904964

CATALOG NUMBER: DFN2DIP-4P3F0-050D020US835-RLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P904964

CATALOG NUMBER: DFN2DIP-4P3F0-050D020US835-RLLFLL

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	112	112	112	112		106	106	106	106		95	95	95		85	85	85		75	75	75
1	103	99	95	92		97	94	90	88		84	82	79		76	74	72		67	66	65
2	94	87	81	76		89	83	78	73		75	71	67		67	64	61		60	58	56
3	87	77	70	64		82	74	67	62		67	61	57		60	56	53		54	51	48
4	80	69	61	55		75	66	59	53		60	54	49		54	49	46		49	45	42
5	74	62	54	48		69	59	52	46		54	48	43		49	44	40		44	40	37
6	68	56	48	42		64	54	46	41		49	43	38		44	39	36		40	36	33
7	63	51	43	37		60	49	41	36		45	38	34		41	36	32		37	33	30
8	59	47	39	33		56	45	37	32		41	35	31		37	32	29		34	30	27
9	55	43	35	30		52	41	34	29		38	32	28		35	30	26		32	28	24
10	52	39	32	27		49	38	31	27		35	29	25		32	27	24		30	25	22

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2355	2355	2355
5°	2357	2316	2332
10°	2332	2269	2255
15°	2299	2193	2137
20°	2255	2088	1993
25°	2210	1971	1853
30°	2150	1851	1676
35°	2091	1722	1521
40°	2031	1588	1343
45°	1962	1441	1182
50°	1890	1292	1025
55°	1814	1133	874
60°	1727	967	718
65°	1626	799	646
70°	1504	642	583
75°	1351	562	529
80°	1129	467	456
85°	766	304	338

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1962 cd/sqm

TEST NUMBER: P904964

CATALOG NUMBER: DFN2DIP-4P3F0-050D020US835-RLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	193.7	3.2
10°-20°	531.7	8.8
20°-30°	746.5	12.4
30°-40°	813.7	13.5
40°-50°	747.9	12.4
50°-60°	587.3	9.8
60°-70°	382.3	6.4
70°-80°	196.8	3.3
80°-90°	52.0	0.9
90°-100°	39.1	0.7
100°-110°	124.4	2.1
110°-120°	212.8	3.5
120°-130°	279.9	4.6
130°-140°	314.2	5.2
140°-150°	308.1	5.1
150°-160°	258.4	4.3
160°-170°	171.4	2.8
170°-180°	59.9	1.0
0°-30°	1471.8	24.4
0°-40°	2285.5	38.0
0°-60°	3620.7	60.1
0°-90°	4251.8	70.6
90°-120°	376.3	6.3
90°-150°	1278.5	21.2
90°-180°	1768.0	29.4
0°-180°	6020.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2066	2066	2066	2066	2066	
5°	2066	2057	2033	2050	2044	196
15°	1966	1945	1881	1846	1827	554
25°	1784	1724	1601	1524	1496	821
35°	1537	1442	1277	1160	1118	962
45°	1257	1131	935	802	757	971
55°	956	810	608	496	460	854
65°	645	494	325	262	256	640
75°	344	213	150	136	135	364
85°	80	41	36	36	36	92
90°	1	7	19	18	18	6
95°	28	33	34	34	33	31
105°	115	116	118	118	118	121
115°	214	217	216	215	214	211
125°	311	315	314	312	312	278
135°	402	408	409	408	407	311
145°	488	492	495	495	493	305
155°	558	559	561	564	562	257
165°	607	606	606	610	607	171
175°	631	630	629	632	629	60
180°	632	632	632	632	632	

TEST NUMBER: P904964

CATALOG NUMBER: DFN2DIP-4P3F0-050D020US835-RLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2066.5	2066.5	2066.5	2066.5	2066.5
2.5°	2075.8	2066.5	2045.9	2064.7	2060.9
5°	2066.5	2057.2	2032.8	2049.6	2044.1
7.5°	2049.6	2038.5	2012.3	2019.7	2010.3
10°	2027.2	2014.1	1976.8	1971.1	1959.9
12.5°	1999.2	1982.4	1931.8	1920.7	1900.0
15°	1965.5	1944.9	1881.4	1845.9	1827.2
17.5°	1926.2	1896.3	1817.7	1776.6	1746.6
20°	1881.4	1843.9	1750.4	1703.8	1662.5
22.5°	1832.8	1789.7	1681.2	1617.7	1589.7
25°	1784.1	1724.2	1600.8	1524.2	1496.0
27.5°	1726.2	1662.5	1526.0	1438.1	1395.1
30°	1664.5	1593.3	1443.7	1348.4	1297.8
32.5°	1604.6	1518.5	1365.3	1253.0	1206.2
35°	1537.3	1441.9	1277.4	1159.5	1118.3
37.5°	1471.8	1368.9	1195.1	1065.9	1019.3
40°	1402.6	1290.5	1108.9	976.2	927.6
42.5°	1331.6	1211.9	1023.0	884.5	837.9
45°	1256.8	1131.4	935.1	802.2	757.3
47.5°	1185.7	1053.0	851.0	718.1	677.0
50°	1107.2	974.4	768.7	639.5	600.4
52.5°	1030.4	890.1	690.1	566.7	531.2
55°	955.6	809.7	607.7	495.6	460.1
57.5°	879.0	729.4	534.9	430.2	400.2
60°	800.4	650.8	458.1	362.9	332.9
62.5°	723.8	574.2	392.7	303.0	288.1
65°	645.2	493.7	325.4	261.9	256.2
67.5°	570.4	418.9	261.9	230.0	224.4
70°	491.9	346.0	216.9	198.2	190.7
72.5°	417.1	278.6	181.4	166.5	162.7
75°	344.1	213.1	149.6	136.5	134.7
77.5°	271.2	151.4	117.9	110.3	106.5
80°	203.8	108.5	89.7	82.3	82.3
82.5°	142.1	73.0	61.7	57.9	57.9
85°	80.4	41.1	35.5	35.5	35.5
87.5°	30.0	14.9	14.9	13.1	13.1
90°	0.6	6.9	18.7	17.5	18.1
92.5°	11.8	16.0	16.6	17.2	17.2
95°	27.8	33.2	34.1	34.1	33.2
97.5°	46.3	51.3	53.4	53.4	53.4
100°	67.7	72.1	73.6	73.6	73.0
102.5°	90.2	93.4	95.5	96.1	95.5
105°	114.8	116.3	117.5	118.4	118.4
107.5°	139.2	141.5	141.5	141.9	139.2
110°	162.9	165.9	165.9	165.9	164.4

TEST NUMBER: P904964

CATALOG NUMBER: DFN2DIP-4P3F0-050D020US835-RLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	188.4	191.6	191.1	189.5	188.4
115°	213.6	216.6	215.7	215.1	213.6
117.5°	238.6	242.8	240.1	238.6	237.0
120°	263.7	267.9	263.7	263.7	262.0
122.5°	286.6	291.9	289.3	287.8	286.6
125°	310.6	315.4	313.9	312.2	311.6
127.5°	334.1	340.0	337.9	335.6	334.1
130°	356.0	362.9	361.9	360.8	358.7
132.5°	380.6	386.0	386.3	383.7	382.1
135°	401.8	407.7	408.8	408.3	406.7
137.5°	425.4	430.2	431.2	430.8	428.5
140°	446.2	451.0	453.7	453.7	451.6
142.5°	467.6	472.3	473.9	474.4	472.3
145°	487.8	491.6	494.7	495.2	493.1
147.5°	505.9	510.7	513.0	513.9	511.8
150°	524.6	527.8	529.9	531.6	529.9
152.5°	541.2	544.4	547.1	549.2	547.1
155°	557.8	559.3	561.0	563.7	562.0
157.5°	572.1	573.2	574.2	578.0	575.3
160°	584.9	586.0	586.6	589.8	587.5
162.5°	596.7	596.7	597.2	600.9	598.2
165°	606.8	606.2	606.2	610.0	607.4
167.5°	615.9	614.2	614.2	618.0	615.4
170°	622.8	621.3	620.7	624.5	621.3
172.5°	627.6	626.0	625.5	629.3	626.0
175°	631.4	629.9	628.7	632.5	629.3
177.5°	633.5	632.0	630.8	634.0	630.8
180°	632.5	632.5	632.5	632.5	632.5

TEST NUMBER: P904964

CATALOG NUMBER: DFN2DIP-4P3F0-050D020US835-RLLFLL

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	11.83	12.86	12.60	13.64	14.59	7.79	8.82	8.56	9.61	10.55
	3H	13.52	14.44	14.30	15.23	16.21	8.99	9.91	9.77	10.70	11.68
	4H	14.13	15.00	14.93	15.80	16.79	9.44	10.31	10.24	11.11	12.10
	6H	14.56	15.36	15.37	16.17	17.17	9.77	10.57	10.58	11.38	12.38
	8H	14.69	15.46	15.51	16.28	17.28	9.86	10.63	10.68	11.45	12.45
	12H	14.76	15.49	15.58	16.31	17.33	9.91	10.64	10.73	11.46	12.48
4H	2H	11.87	12.74	12.67	13.54	14.53	8.41	9.28	9.21	10.08	11.07
	3H	13.71	14.44	14.53	15.27	16.27	9.77	10.49	10.58	11.33	12.33
	4H	14.41	15.07	15.24	15.90	16.93	10.32	10.98	11.15	11.81	12.84
	6H	14.93	15.50	15.77	16.36	17.39	10.74	11.31	11.59	12.17	13.20
	8H	15.11	15.64	15.95	16.49	17.54	10.87	11.40	11.72	12.25	13.30
	12H	15.21	15.68	16.07	16.56	17.61	10.94	11.42	11.81	12.29	13.35
8H	4H	14.39	14.92	15.24	15.77	16.82	10.61	11.14	11.46	11.99	13.04
	6H	14.96	15.40	15.83	16.29	17.34	11.13	11.57	12.00	12.46	13.51
	8H	15.17	15.56	16.06	16.45	17.52	11.32	11.70	12.20	12.59	13.66
	12H	15.32	15.66	16.20	16.54	17.66	11.44	11.78	12.32	12.66	13.78
12H	4H	14.35	14.83	15.22	15.70	16.75	10.63	11.10	11.49	11.97	13.03
	6H	14.93	15.32	15.82	16.21	17.28	11.18	11.57	12.06	12.46	13.52
	8H	15.16	15.50	16.05	16.38	17.50	11.39	11.73	12.28	12.61	13.74