

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: P918013

Luminaire Tested: DFN2DIP-TR3F0-030D060US930-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P918013
REPORT IS A COMBINATION OF REPORTS P901833 AND P898751
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR3F0-030D060US930-FLLONL
Description: 3 foot, Triangle Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

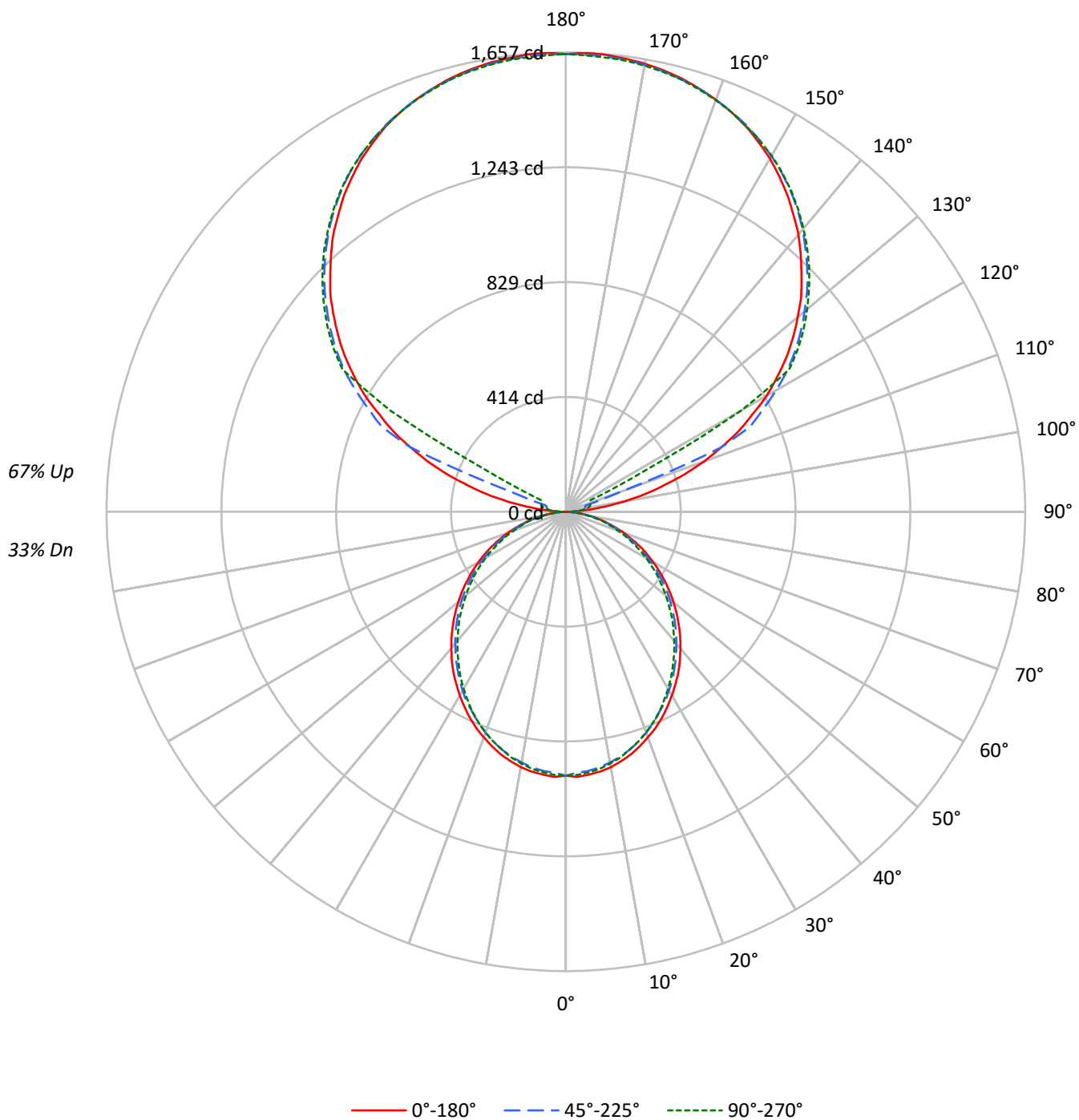
Lumens per Lamp: N/A
Luminaire Lumens: 7264.3 lumens
Efficiency: N/A
Efficacy: 105.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.74' x L: 3.16' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 69.1
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9968
Total Harmonic Distortion (THDi): 0.064
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P918013

CATALOG NUMBER: DFN2DIP-TR3F0-030D060US930-FLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P918013

CATALOG NUMBER: DFN2DIP-TR3F0-030D060US930-FLONL

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	50	30	10
RCR																				
0	103	103	103	103	93	93	93	93	74	74	74	57	57	57	41	41	41			33
1	94	90	86	83	85	81	78	75	65	63	61	50	48	47	36	35	34			28
2	86	78	72	67	77	71	66	62	57	53	50	44	41	39	32	30	29			24
3	78	69	62	56	70	62	56	51	50	46	42	39	36	33	28	26	25			20
4	71	61	53	47	64	55	49	43	44	40	36	34	31	28	25	23	21			17
5	65	54	46	40	59	49	42	37	40	35	31	31	27	25	23	20	18			15
6	60	48	41	35	54	44	37	32	36	31	27	28	24	21	20	18	16			13
7	56	44	36	30	50	40	33	28	32	27	23	25	22	19	19	16	14			12
8	51	39	32	27	46	36	29	25	29	24	21	23	19	17	17	15	13			10
9	48	36	29	24	43	33	26	22	27	22	19	21	18	15	16	13	12			9
10	45	33	26	21	40	30	24	20	25	20	17	19	16	14	15	12	11			9

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1186	1186	1186
5°	1187	1168	1176
10°	1177	1152	1160
15°	1159	1132	1134
20°	1135	1104	1108
25°	1111	1072	1078
30°	1081	1042	1039
35°	1053	1006	999
40°	1018	970	961
45°	983	934	921
50°	945	896	876
55°	906	852	834
60°	860	800	785
65°	811	746	728
70°	748	680	667
75°	662	601	609
80°	557	500	500
85°	394	329	323

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1097 cd/sqm

TEST NUMBER: P918013

CATALOG NUMBER: DFN2DIP-TR3F0-030D060US930-FLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	89.6	1.2
10°-20°	252.0	3.5
20°-30°	370.4	5.1
30°-40°	430.2	5.9
40°-50°	429.7	5.9
50°-60°	374.6	5.2
60°-70°	277.0	3.8
70°-80°	156.7	2.2
80°-90°	44.2	0.6
90°-100°	54.4	0.7
100°-110°	202.9	2.8
110°-120°	538.2	7.4
120°-130°	892.7	12.3
130°-140°	948.2	13.1
140°-150°	881.3	12.1
150°-160°	708.5	9.8
160°-170°	456.5	6.3
170°-180°	157.1	2.2
0°-30°	712.0	9.8
0°-40°	1142.2	15.7
0°-60°	1946.5	26.8
0°-90°	2424.4	33.4
90°-120°	795.6	11.0
90°-150°	3517.8	48.4
90°-180°	4840.0	66.6
0°-180°	7264.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	952	952	952	952	952	
5°	952	948	938	945	944	90
15°	906	901	889	892	888	255
25°	820	813	797	799	797	377
35°	707	698	684	678	674	442
45°	576	569	556	545	542	444
55°	436	430	419	408	404	390
65°	294	288	279	271	266	290
75°	154	152	147	142	144	164
85°	38	37	36	33	32	42
90°	1	14	24	30	32	7
95°	78	38	47	53	51	92
105°	363	399	73	86	91	388
115°	687	707	737	184	98	676
125°	971	987	1009	1018	1021	866
135°	1202	1221	1232	1244	1241	928
145°	1394	1393	1413	1422	1416	872
155°	1535	1524	1539	1546	1536	707
165°	1618	1610	1614	1622	1614	457
175°	1654	1646	1648	1657	1645	157
180°	1651	1651	1651	1651	1651	

TEST NUMBER: P918013

CATALOG NUMBER: DFN2DIP-TR3F0-030D060US930-FLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	951.7	951.7	951.7	951.7	951.7
2.5°	957.2	952.7	942.6	951.7	950.0
5°	951.7	948.1	938.0	945.3	943.5
7.5°	945.3	939.9	929.8	937.2	935.3
10°	935.3	928.9	917.9	925.2	922.5
12.5°	921.5	916.1	905.1	909.6	907.8
15°	906.0	900.6	888.6	892.3	887.7
17.5°	886.7	881.3	869.4	873.9	869.4
20°	865.7	860.2	847.4	850.1	846.5
22.5°	844.7	836.5	824.5	824.5	822.6
25°	819.9	812.7	797.1	798.9	797.1
27.5°	792.5	786.0	774.2	771.5	767.0
30°	765.1	757.7	744.0	741.3	737.6
32.5°	735.8	730.3	715.7	710.1	706.5
35°	707.4	698.3	683.6	678.1	673.5
37.5°	675.4	667.2	652.5	646.0	641.5
40°	642.5	635.1	620.4	612.3	608.6
42.5°	610.4	603.1	588.5	579.3	573.8
45°	575.7	569.2	555.5	545.4	541.8
47.5°	541.8	535.4	520.7	510.6	505.2
50°	506.1	501.5	488.7	475.9	471.3
52.5°	471.3	464.9	453.1	443.0	436.5
55°	435.7	430.2	419.1	408.2	403.7
57.5°	399.9	395.3	383.4	372.4	368.8
60°	364.2	360.6	347.8	337.7	335.0
62.5°	329.5	323.0	313.9	304.8	301.1
65°	293.8	288.3	279.2	270.9	266.4
67.5°	257.2	252.6	244.3	238.0	234.3
70°	223.3	219.6	211.4	205.0	201.4
72.5°	188.6	184.8	180.3	173.9	171.2
75°	153.7	152.0	147.3	141.9	143.7
77.5°	122.6	119.0	117.1	114.4	111.7
80°	91.6	90.6	88.7	86.0	84.2
82.5°	62.2	62.2	61.4	57.6	57.6
85°	37.5	36.6	35.7	32.9	32.0
87.5°	16.5	14.7	12.8	10.1	9.1
90°	1.1	14.3	23.8	29.9	32.2
92.5°	29.9	25.1	28.6	31.1	32.2
95°	77.6	38.2	46.6	52.7	51.4
97.5°	139.7	41.8	60.8	64.6	65.7
100°	211.5	47.8	68.1	77.6	80.0
102.5°	290.2	288.0	70.5	83.6	87.2
105°	363.1	399.0	72.9	85.9	90.8
107.5°	448.0	477.8	75.3	88.4	93.2
110°	529.3	554.2	209.1	89.7	94.3

TEST NUMBER: P918013

CATALOG NUMBER: DFN2DIP-TR3F0-030D060US930-FLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	605.7	627.1	606.8	91.9	95.6
115°	686.9	707.2	737.1	184.0	98.0
117.5°	757.3	781.2	801.6	630.7	317.7
120°	836.3	854.1	875.7	890.0	728.7
122.5°	903.0	922.2	946.2	953.2	954.6
125°	971.2	986.8	1009.4	1017.8	1021.3
127.5°	1033.3	1050.0	1068.0	1079.9	1081.1
130°	1091.8	1111.0	1124.1	1137.3	1136.1
132.5°	1151.6	1167.2	1180.2	1191.0	1189.8
135°	1201.8	1221.0	1231.6	1243.7	1241.2
137.5°	1254.3	1268.6	1280.7	1292.6	1289.1
140°	1305.6	1315.3	1328.4	1339.1	1333.2
142.5°	1348.7	1357.1	1372.6	1382.1	1376.1
145°	1394.2	1392.9	1413.2	1421.6	1415.6
147.5°	1433.5	1429.9	1450.2	1456.1	1451.5
150°	1471.8	1463.4	1482.5	1489.6	1483.7
152.5°	1504.0	1494.4	1512.3	1519.6	1511.2
155°	1535.0	1524.4	1538.7	1545.8	1536.3
157.5°	1560.2	1550.6	1561.4	1569.8	1560.2
160°	1581.7	1574.4	1581.7	1588.8	1580.5
162.5°	1600.7	1593.6	1599.5	1607.9	1597.2
165°	1617.5	1610.4	1613.9	1622.3	1613.9
167.5°	1630.6	1623.4	1627.1	1635.5	1624.6
170°	1641.4	1634.2	1636.6	1644.9	1634.2
172.5°	1648.5	1641.4	1643.8	1652.2	1641.4
175°	1654.5	1646.1	1648.5	1656.8	1644.9
177.5°	1656.8	1648.5	1649.8	1658.2	1647.4
180°	1650.9	1650.9	1650.9	1650.9	1650.9

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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	6.04	6.77	7.13	7.85	9.35	5.61	6.34	6.70	7.43	8.92
	3H	7.68	8.33	8.78	9.43	10.94	7.21	7.87	8.31	8.96	10.47
	4H	8.26	8.88	9.36	9.97	11.49	7.79	8.41	8.90	9.50	11.02
	6H	8.64	9.21	9.76	10.31	11.84	8.17	8.74	9.29	9.84	11.37
	8H	8.74	9.28	9.86	10.40	11.92	8.27	8.81	9.39	9.93	11.45
	12H	8.78	9.29	9.90	10.40	11.95	8.31	8.82	9.43	9.93	11.47
4H	2H	6.48	7.10	7.60	8.20	9.71	6.14	6.76	7.25	7.86	9.37
	3H	8.32	8.84	9.45	9.96	11.49	7.94	8.45	9.06	9.58	11.10
	4H	9.03	9.50	10.15	10.61	12.16	8.63	9.10	9.75	10.21	11.76
	6H	9.53	9.93	10.66	11.07	12.61	9.12	9.53	10.25	10.66	12.20
	8H	9.67	10.05	10.80	11.17	12.73	9.26	9.64	10.39	10.77	12.32
	12H	9.73	10.07	10.88	11.21	12.77	9.31	9.66	10.46	10.80	12.36
8H	4H	9.21	9.59	10.34	10.72	12.27	8.85	9.23	9.98	10.36	11.91
	6H	9.82	10.14	10.98	11.31	12.86	9.46	9.78	10.62	10.95	12.50
	8H	10.04	10.31	11.19	11.46	13.03	9.67	9.95	10.83	11.10	12.67
	12H	10.16	10.40	11.32	11.54	13.15	9.78	10.02	10.94	11.16	12.77
12H	4H	9.19	9.53	10.33	10.67	12.23	8.84	9.18	9.99	10.32	11.88
	6H	9.85	10.12	11.01	11.27	12.85	9.50	9.78	10.66	10.93	12.50
	8H	10.08	10.32	11.24	11.47	13.07	9.73	9.97	10.89	11.11	12.72