

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: P918201

Luminaire Tested: DFN2DIP-TR4F0-040D080US930-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P918201
REPORT IS A COMBINATION OF REPORTS P901962 AND P898849
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR4F0-040D080US930-RLLONL
Description: 4 foot, Triangle Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

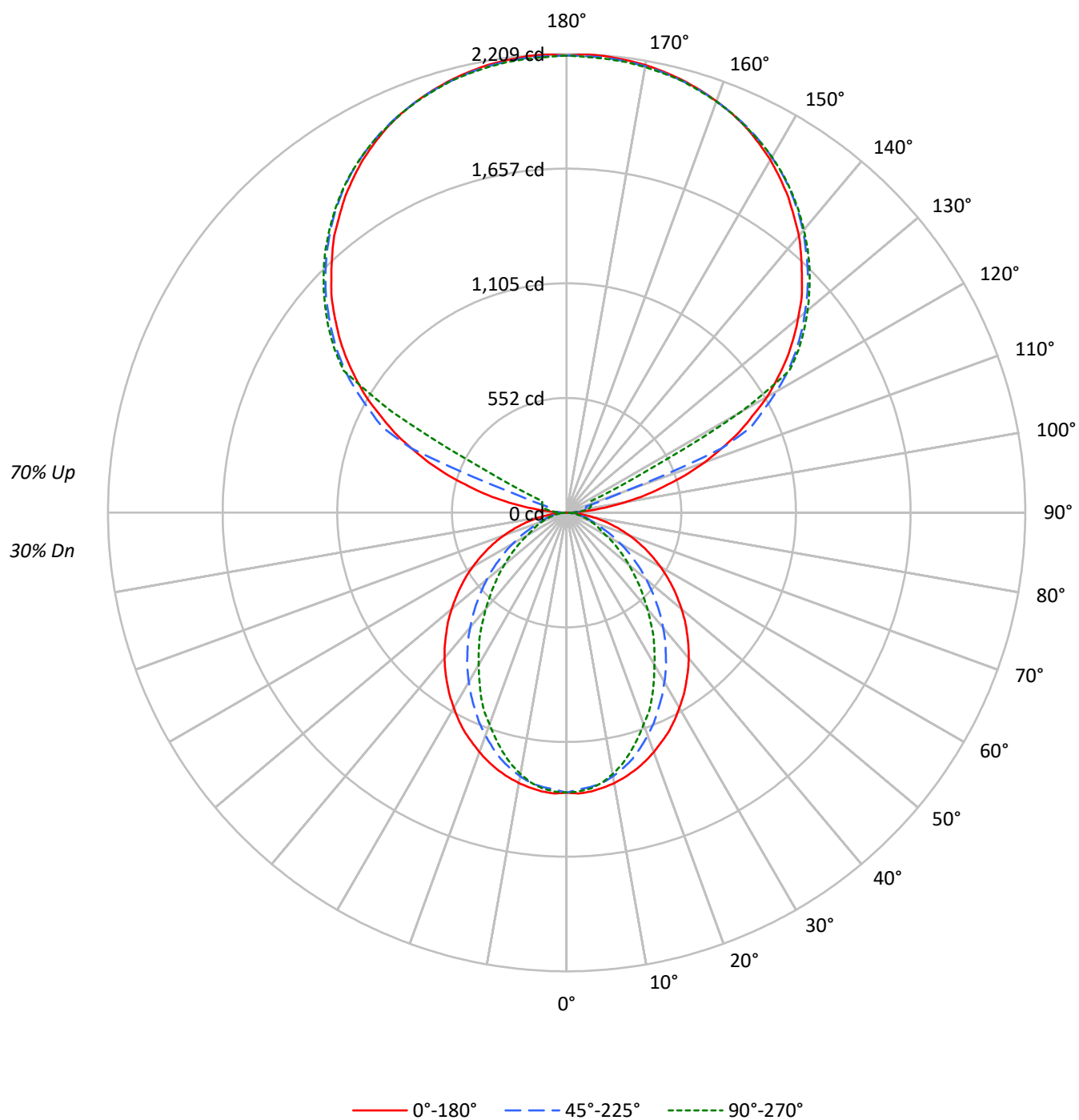
Lumens per Lamp: N/A
Luminaire Lumens: 9229.2 lumens
Efficiency: N/A
Efficacy: 101.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.43' x L: 3.96' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 91.1
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9952
Total Harmonic Distortion (THDi): 0.069
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	102	102	102	102	92	92	92	92	72	72	72	54	54	54	38	38	38
1	94	90	86	83	84	81	77	75	64	62	60	48	47	46	34	33	32
2	85	78	73	68	76	71	66	62	56	53	50	43	40	39	30	29	28
3	78	69	62	57	70	62	57	52	50	46	42	38	35	33	27	25	24
4	71	61	54	48	64	55	49	44	44	40	36	34	31	28	24	22	21
5	66	55	47	41	59	49	43	38	40	35	31	30	27	25	22	20	18
6	60	49	41	36	54	44	38	33	36	31	27	28	24	22	20	18	16
7	56	44	37	31	50	40	34	29	32	28	24	25	22	19	18	16	15
8	52	40	33	28	46	36	30	25	29	25	21	23	20	17	17	15	13
9	48	37	29	25	43	33	27	23	27	22	19	21	18	15	16	13	12
10	45	33	27	22	40	30	24	20	25	20	17	20	16	14	14	12	11

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1071	1071	1071
5°	1073	1054	1061
10°	1062	1033	1026
15°	1047	999	973
20°	1028	952	907
25°	1008	899	844
30°	982	845	764
35°	956	787	693
40°	929	727	612
45°	898	660	539
50°	866	592	468
55°	833	520	399
60°	795	445	328
65°	751	368	296
70°	697	297	267
75°	629	262	243
80°	532	220	211
85°	371	147	159

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1170 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	126.3	1.4
10°-20°	346.8	3.8
20°-30°	486.9	5.3
30°-40°	530.7	5.8
40°-50°	487.8	5.3
50°-60°	383.1	4.2
60°-70°	249.3	2.7
70°-80°	128.4	1.4
80°-90°	36.7	0.4
90°-100°	72.6	0.8
100°-110°	270.6	2.9
110°-120°	717.6	7.8
120°-130°	1190.2	12.9
130°-140°	1264.3	13.7
140°-150°	1175.0	12.7
150°-160°	944.7	10.2
160°-170°	608.7	6.6
170°-180°	209.5	2.3
0°-30°	960.0	10.4
0°-40°	1490.7	16.2
0°-60°	2361.5	25.6
0°-90°	2775.9	30.1
90°-120°	1060.8	11.5
90°-150°	4690.4	50.8
90°-180°	6453.0	69.9
0°-180°	9229.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1348	1348	1348	1348	1348	
5°	1348	1342	1326	1337	1333	128
15°	1282	1268	1227	1204	1192	361
25°	1164	1125	1044	994	976	535
35°	1003	940	833	756	729	628
45°	820	738	610	523	494	633
55°	623	528	396	323	300	557
65°	421	322	212	171	167	417
75°	224	139	98	89	88	237
85°	52	27	23	23	23	60
90°	2	19	32	40	43	9
95°	104	51	62	70	68	123
105°	484	532	97	115	121	517
115°	916	943	983	245	131	902
125°	1295	1316	1346	1357	1362	1155
135°	1602	1628	1642	1658	1655	1238
145°	1859	1857	1884	1895	1887	1163
155°	2047	2032	2052	2061	2048	943
165°	2157	2147	2152	2163	2152	609
175°	2206	2195	2198	2209	2193	210
180°	2201	2201	2201	2201	2201	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1347.9	1347.9	1347.9	1347.9	1347.9
2.5°	1354.0	1347.9	1334.4	1346.7	1344.2
5°	1347.9	1341.7	1325.8	1336.8	1333.3
7.5°	1336.8	1329.6	1312.5	1317.3	1311.2
10°	1322.3	1313.7	1289.3	1285.6	1278.4
12.5°	1304.0	1293.0	1260.0	1252.7	1239.3
15°	1282.0	1268.5	1227.1	1204.0	1191.8
17.5°	1256.4	1236.8	1185.5	1158.8	1139.2
20°	1227.1	1202.6	1141.7	1111.3	1084.3
22.5°	1195.4	1167.3	1096.5	1055.1	1036.9
25°	1163.7	1124.6	1044.1	994.2	975.7
27.5°	1125.9	1084.3	995.3	938.0	909.9
30°	1085.7	1039.2	941.6	879.5	846.5
32.5°	1046.6	990.4	890.5	817.3	786.7
35°	1002.7	940.4	833.2	756.3	729.4
37.5°	960.0	892.8	779.4	695.2	664.8
40°	914.8	841.7	723.3	636.7	605.0
42.5°	868.5	790.4	667.2	576.9	546.5
45°	819.7	737.9	609.9	523.3	494.0
47.5°	773.4	686.8	555.1	468.4	441.6
50°	722.1	635.5	501.3	417.1	391.6
52.5°	672.1	580.6	450.1	369.6	346.4
55°	623.3	528.2	396.4	323.3	300.1
57.5°	573.3	475.7	348.9	280.5	261.1
60°	522.0	424.4	298.8	236.7	217.2
62.5°	472.1	374.5	256.1	197.6	187.9
65°	420.9	322.0	212.2	170.8	167.1
67.5°	372.1	273.2	170.8	150.0	146.3
70°	320.8	225.7	141.5	129.3	124.3
72.5°	272.1	181.7	118.3	108.6	106.2
75°	224.4	139.0	97.6	89.0	87.9
77.5°	176.9	98.7	76.9	72.0	69.5
80°	132.9	70.8	58.5	53.7	53.7
82.5°	92.7	47.6	40.3	37.7	37.7
85°	52.4	26.8	23.2	23.2	23.2
87.5°	19.6	9.7	9.7	8.6	8.6
90°	1.5	19.1	31.8	39.9	43.0
92.5°	39.9	33.5	38.2	41.4	43.0
95°	103.5	50.9	62.0	70.2	68.5
97.5°	186.3	55.8	81.1	86.1	87.6
100°	282.0	63.8	90.8	103.5	106.6
102.5°	387.0	383.9	94.0	111.4	116.3
105°	484.2	532.1	97.2	114.6	121.1
107.5°	597.3	637.0	100.4	117.8	124.3
110°	705.7	739.0	278.8	119.5	125.8

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	807.6	836.2	809.2	122.5	127.5
115°	915.8	942.9	982.8	245.3	130.7
117.5°	1009.8	1041.6	1068.9	840.9	423.7
120°	1115.0	1138.8	1167.6	1186.7	971.6
122.5°	1204.0	1229.6	1261.6	1271.0	1272.8
125°	1294.9	1315.6	1345.9	1357.1	1361.8
127.5°	1377.7	1400.0	1424.1	1439.9	1441.4
130°	1455.8	1481.3	1498.8	1516.4	1514.8
132.5°	1535.5	1556.2	1573.7	1588.0	1586.5
135°	1602.4	1627.9	1642.1	1658.2	1655.0
137.5°	1672.4	1691.5	1707.6	1723.5	1718.7
140°	1740.8	1753.7	1771.2	1785.5	1777.5
142.5°	1798.4	1809.5	1830.1	1842.8	1834.8
145°	1858.9	1857.2	1884.2	1895.4	1887.4
147.5°	1911.3	1906.6	1933.6	1941.6	1935.3
150°	1962.3	1951.2	1976.7	1986.1	1978.2
152.5°	2005.3	1992.6	2016.4	2026.1	2014.9
155°	2046.7	2032.5	2051.6	2061.1	2048.4
157.5°	2080.2	2067.5	2081.9	2093.0	2080.2
160°	2108.9	2099.3	2108.9	2118.4	2107.2
162.5°	2134.3	2124.8	2132.7	2143.9	2129.6
165°	2156.6	2147.2	2151.9	2163.0	2151.9
167.5°	2174.2	2164.5	2169.4	2180.6	2166.2
170°	2188.6	2178.9	2182.1	2193.3	2178.9
172.5°	2198.0	2188.6	2191.8	2202.9	2188.6
175°	2206.0	2194.8	2198.0	2209.1	2193.3
177.5°	2209.1	2198.0	2199.7	2210.8	2196.5
180°	2201.2	2201.2	2201.2	2201.2	2201.2

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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	5.16	5.85	6.27	6.96	8.49	1.13	1.82	2.25	2.93	4.46
	3H	6.82	7.44	7.95	8.56	10.11	2.31	2.93	3.43	4.04	5.59
	4H	7.43	8.01	8.56	9.13	10.68	2.75	3.34	3.89	4.46	6.01
	6H	7.84	8.38	8.98	9.50	11.06	3.07	3.61	4.21	4.73	6.29
	8H	7.96	8.48	9.11	9.61	11.17	3.16	3.67	4.30	4.80	6.36
	12H	8.02	8.51	9.17	9.63	11.21	3.20	3.68	4.34	4.81	6.39
4H	2H	5.16	5.74	6.30	6.86	8.41	1.71	2.29	2.85	3.41	4.96
	3H	6.98	7.46	8.12	8.61	10.17	3.05	3.53	4.19	4.68	6.24
	4H	7.66	8.11	8.81	9.24	10.83	3.59	4.04	4.74	5.17	6.76
	6H	8.17	8.55	9.32	9.71	11.28	4.00	4.39	5.16	5.54	7.12
	8H	8.34	8.70	9.50	9.84	11.44	4.13	4.49	5.28	5.63	7.23
	12H	8.43	8.75	9.60	9.91	11.51	4.19	4.51	5.36	5.67	7.27
8H	4H	7.62	7.98	8.77	9.12	10.72	3.86	4.22	5.01	5.36	6.96
	6H	8.18	8.48	9.35	9.66	11.25	4.37	4.67	5.55	5.86	7.45
	8H	8.40	8.65	9.58	9.82	11.43	4.57	4.82	5.75	5.99	7.60
	12H	8.53	8.75	9.71	9.92	11.56	4.68	4.90	5.86	6.07	7.71
12H	4H	7.56	7.89	8.74	9.05	10.64	3.86	4.18	5.03	5.34	6.94
	6H	8.16	8.41	9.34	9.58	11.19	4.42	4.68	5.60	5.85	7.46
	8H	8.37	8.60	9.55	9.76	11.40	4.63	4.85	5.81	6.02	7.66

END OF REPORT