

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: P921637

Luminaire Tested: DFN2DIP-HX3F0-030D090US940-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P921637
REPORT IS A COMBINATION OF REPORTS P899286 AND P896089
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX3F0-030D090US940-RLLFLL
Description: 3 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

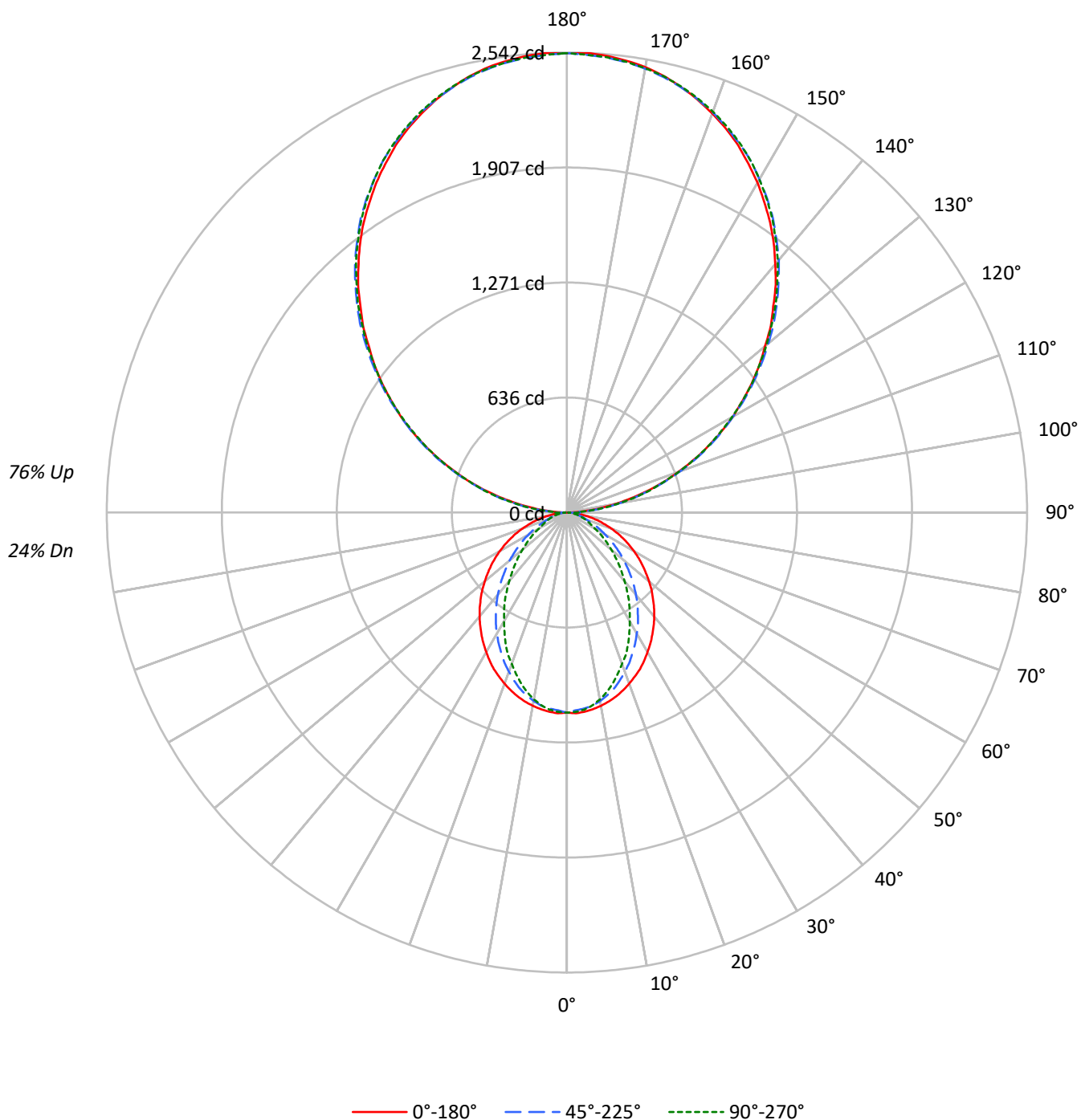
Lumens per Lamp: N/A
Luminaire Lumens: 9376.3 lumens
Efficiency: N/A
Efficacy: 98.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.84' x L: 3.28' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 94.8
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.983
Total Harmonic Distortion (THDi): 0.073
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P921637

CATALOG NUMBER: DFN2DIP-HX3F0-030D090US940-RLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P921637

CATALOG NUMBER: DFN2DIP-HX3F0-030D090US940-RLFL

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°	1281	1281	1281
5°	1282	1260	1268
10°	1269	1234	1226
15°	1251	1192	1161
20°	1227	1135	1083
25°	1203	1071	1006
30°	1171	1006	910
35°	1139	936	826
40°	1107	863	729
45°	1069	783	641
50°	1030	702	555
55°	989	616	473
60°	942	525	389
65°	888	434	349
70°	822	348	315
75°	739	305	285
80°	620	253	245
85°	424	165	180

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 2389 cd/sqm

TEST NUMBER: P921637

CATALOG NUMBER: DFN2DIP-HX3F0-030D090US940-RLFL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	103.6	1.1
10°-20°	284.5	3.0
20°-30°	399.4	4.3
30°-40°	435.3	4.6
40°-50°	400.1	4.3
50°-60°	314.2	3.4
60°-70°	204.5	2.2
70°-80°	105.3	1.1
80°-90°	34.1	0.4
90°-100°	157.1	1.7
100°-110°	499.0	5.3
110°-120°	854.0	9.1
120°-130°	1123.1	12.0
130°-140°	1260.7	13.4
140°-150°	1236.2	13.2
150°-160°	1037.0	11.1
160°-170°	687.7	7.3
170°-180°	240.4	2.6
0°-30°	787.5	8.4
0°-40°	1222.8	13.0
0°-60°	1937.2	20.7
0°-90°	2281.1	24.3
90°-120°	1510.1	16.1
90°-150°	5130.1	54.7
90°-180°	7095.0	75.7
0°-180°	9376.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1106	1106	1106	1106	1106	
5°	1106	1101	1088	1097	1094	105
15°	1052	1040	1007	988	978	296
25°	955	922	856	816	800	439
35°	822	771	683	620	598	515
45°	672	605	500	429	405	519
55°	511	433	325	265	246	457
65°	345	264	174	140	137	342
75°	184	114	80	73	72	195
85°	43	22	19	19	19	49
90°	2	28	75	70	73	9
95°	112	133	137	137	133	124
105°	461	467	471	475	475	486
115°	857	869	865	863	857	848
125°	1246	1266	1260	1253	1250	1114
135°	1612	1636	1641	1638	1632	1246
145°	1957	1973	1985	1987	1979	1223
155°	2238	2244	2251	2262	2255	1030
165°	2435	2432	2432	2448	2437	687
175°	2534	2527	2523	2538	2525	241
180°	2538	2538	2538	2538	2538	

TEST NUMBER: P921637

CATALOG NUMBER: DFN2DIP-HX3F0-030D090US940-RLFL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1105.6	1105.6	1105.6	1105.6	1105.6
2.5°	1110.6	1105.6	1094.6	1104.7	1102.7
5°	1105.6	1100.6	1087.6	1096.6	1093.6
7.5°	1096.6	1090.7	1076.7	1080.6	1075.6
10°	1084.6	1077.6	1057.7	1054.5	1048.7
12.5°	1069.6	1060.6	1033.6	1027.6	1016.5
15°	1051.6	1040.5	1006.6	987.6	977.6
17.5°	1030.5	1014.6	972.5	950.6	934.5
20°	1006.6	986.5	936.5	911.6	889.5
22.5°	980.6	957.5	899.5	865.5	850.5
25°	954.6	922.5	856.5	815.5	800.4
27.5°	923.5	889.5	816.5	769.5	746.4
30°	890.6	852.5	772.4	721.5	694.4
32.5°	858.4	812.4	730.5	670.4	645.3
35°	822.5	771.4	683.4	620.4	598.3
37.5°	787.5	732.4	639.4	570.2	545.4
40°	750.5	690.5	593.3	522.3	496.3
42.5°	712.4	648.5	547.3	473.2	448.3
45°	672.4	605.3	500.3	429.2	405.2
47.5°	634.4	563.4	455.3	384.1	362.2
50°	592.4	521.3	411.3	342.1	321.2
52.5°	551.3	476.3	369.3	303.2	284.2
55°	511.2	433.2	325.1	265.2	246.2
57.5°	470.3	390.2	286.2	230.2	214.1
60°	428.2	348.2	245.1	194.1	178.2
62.5°	387.3	307.2	210.1	162.1	154.2
65°	345.2	264.1	174.1	140.1	137.1
67.5°	305.2	224.1	140.1	123.1	120.0
70°	263.1	185.1	116.0	106.0	102.0
72.5°	223.1	149.0	97.0	89.1	87.0
75°	184.0	114.0	80.1	73.0	72.1
77.5°	145.1	81.0	63.0	59.0	57.0
80°	109.1	58.1	48.0	44.1	44.1
82.5°	76.0	39.1	33.0	31.0	31.0
85°	43.0	21.9	19.0	19.0	19.0
87.5°	16.1	7.9	7.9	7.0	7.0
90°	2.3	27.6	75.0	70.4	72.7
92.5°	47.4	64.3	66.6	68.8	68.8
95°	111.7	133.1	137.0	137.0	133.1
97.5°	185.9	205.8	214.3	214.3	214.3
100°	271.6	289.3	295.3	295.3	293.1
102.5°	361.9	375.0	383.3	385.7	383.3
105°	460.7	466.7	471.4	475.2	475.2
107.5°	558.6	567.8	567.8	569.3	558.6
110°	653.4	665.8	665.8	665.8	659.6

TEST NUMBER: P921637

CATALOG NUMBER: DFN2DIP-HX3F0-030D090US940-RLFL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	756.0	769.0	766.7	760.6	756.0
115°	857.0	869.2	865.4	863.2	857.0
117.5°	957.3	974.1	963.4	957.3	951.1
120°	1058.3	1075.0	1058.3	1058.3	1051.3
122.5°	1150.0	1171.5	1160.8	1154.7	1150.0
125°	1246.5	1265.6	1259.5	1252.6	1250.4
127.5°	1340.6	1364.3	1355.9	1346.8	1340.6
130°	1428.6	1456.2	1452.3	1447.7	1439.3
132.5°	1527.3	1548.7	1550.2	1539.5	1533.5
135°	1612.2	1635.9	1640.6	1638.3	1632.2
137.5°	1707.1	1726.3	1730.1	1728.6	1719.4
140°	1790.6	1809.6	1820.3	1820.3	1812.0
142.5°	1876.2	1895.3	1901.5	1903.8	1895.3
145°	1957.4	1972.6	1984.9	1987.2	1978.8
147.5°	2030.1	2049.2	2058.3	2062.2	2053.8
150°	2105.1	2118.1	2126.5	2133.3	2126.5
152.5°	2171.6	2184.6	2195.3	2203.8	2195.3
155°	2238.2	2244.3	2251.2	2261.9	2255.0
157.5°	2295.5	2300.2	2304.0	2319.2	2308.5
160°	2346.8	2351.4	2353.8	2366.7	2357.5
162.5°	2394.2	2394.2	2396.6	2411.1	2400.4
165°	2434.8	2432.5	2432.5	2447.8	2437.1
167.5°	2471.6	2464.7	2464.7	2479.9	2469.2
170°	2499.1	2493.0	2490.7	2506.0	2493.0
172.5°	2518.2	2512.1	2509.8	2525.1	2512.1
175°	2533.5	2527.4	2522.8	2538.2	2525.1
177.5°	2541.9	2535.8	2531.2	2544.2	2531.2
180°	2538.2	2538.2	2538.2	2538.2	2538.2

TEST NUMBER: P921637

CATALOG NUMBER: DFN2DIP-HX3F0-030D090US940-RLFL

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	4.88	5.54	6.03	6.67	8.27	0.86	1.51	2.01	2.65	4.25
	3H	6.53	7.12	7.70	8.27	9.88	2.03	2.61	3.19	3.76	5.37
	4H	7.13	7.69	8.30	8.83	10.45	2.46	3.02	3.63	4.17	5.79
	6H	7.54	8.05	8.71	9.20	10.83	2.77	3.29	3.95	4.44	6.06
	8H	7.65	8.14	8.83	9.31	10.93	2.86	3.34	4.04	4.51	6.13
	12H	7.71	8.17	8.89	9.33	10.97	2.89	3.35	4.08	4.51	6.16
4H	2H	4.87	5.43	6.05	6.58	8.20	1.42	1.98	2.60	3.13	4.75
	3H	6.68	7.14	7.86	8.31	9.94	2.75	3.22	3.93	4.39	6.02
	4H	7.36	7.78	8.54	8.95	10.59	3.29	3.72	4.47	4.88	6.53
	6H	7.86	8.22	9.04	9.40	11.04	3.69	4.06	4.88	5.24	6.88
	8H	8.02	8.36	9.21	9.54	11.19	3.82	4.16	5.00	5.33	6.99
	12H	8.11	8.41	9.31	9.60	11.26	3.87	4.18	5.07	5.37	7.03
8H	4H	7.31	7.65	8.50	8.83	10.48	3.55	3.89	4.74	5.07	6.72
	6H	7.86	8.14	9.07	9.36	11.01	4.06	4.34	5.26	5.56	7.21
	8H	8.07	8.32	9.28	9.51	11.18	4.25	4.49	5.46	5.68	7.36
	12H	8.20	8.41	9.41	9.61	11.31	4.35	4.57	5.57	5.76	7.46
12H	4H	7.25	7.56	8.46	8.75	10.41	3.55	3.86	4.75	5.04	6.70
	6H	7.84	8.08	9.05	9.28	10.95	4.11	4.35	5.32	5.54	7.22
	8H	8.04	8.26	9.26	9.45	11.15	4.30	4.52	5.52	5.71	7.41

END OF REPORT