

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: P905197

Luminaire Tested: DFN2DIP-HX2F0-040D040US835-RLLONL

Issue Date: 11/21/2024

**Test Information**

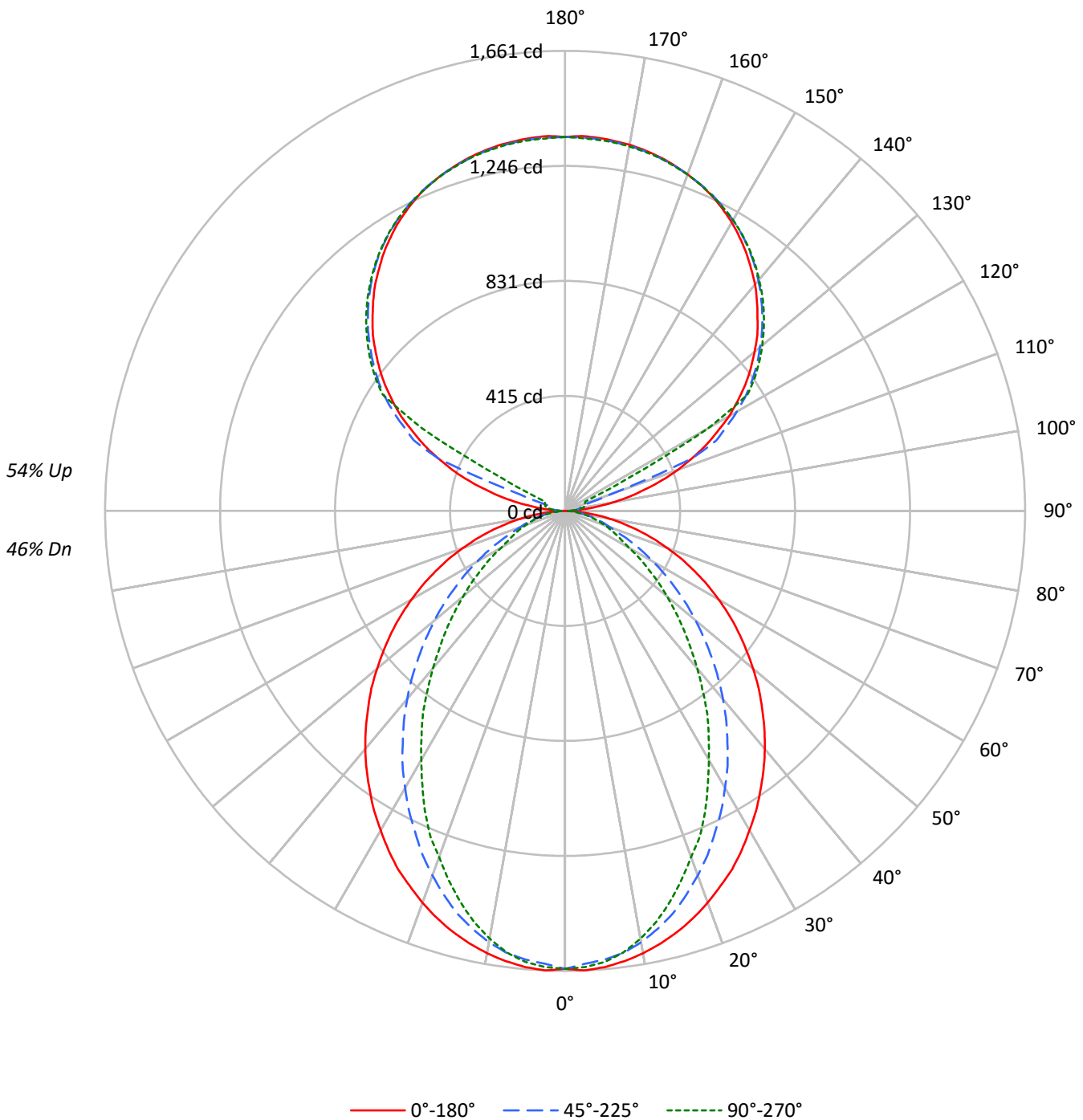
Test Method: LM-79-2019  
Report Number: P905197  
REPORT IS A COMBINATION OF REPORTS P900696 AND P897595  
Test Lab: INNOVATION CENTER  
Issue Date: 11/21/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: DFN2DIP-HX2F0-040D040US835-RLONL  
Description: 2 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens  
Light Source: -  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 7360.0 lumens  
Efficiency: N/A  
Efficacy: 112.5 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16  
Luminous Opening: Rectangular w/ Sides (W: 1.99' x L: 2.3' x H: 0.1')  
CIE Type: General Diffuse  
  
Input Watts (W): 65.4  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: 0.9933  
Total Harmonic Distortion (THDi): 0.066  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT

TEST NUMBER: P905197  
CATALOG NUMBER: DFN2DIP-HX2F0-040D040US835-RLLONL

### Luminous Intensity Polar Plot





TEST NUMBER: P905197

CATALOG NUMBER: DFN2DIP-HX2F0-040D040US835-RLLONL

**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20				20				20				20				20				
RC	80				70				50				30				10			0	
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																					
0	106	106	106	106	98	98	98	98	81	81	81	66	66	66	53	53	53	46			46
1	97	93	90	86	89	86	83	80	72	70	68	59	58	56	47	46	45	40			40
2	89	82	76	71	82	76	70	66	63	60	57	52	50	48	42	40	39	34			34
3	81	72	65	60	75	67	61	56	56	52	48	47	43	41	38	35	34	29			29
4	75	64	57	51	68	60	53	48	50	45	41	42	38	35	34	31	29	26			26
5	69	58	50	44	63	53	46	41	45	40	36	38	34	31	31	28	26	23			23
6	63	52	44	38	58	48	41	36	41	36	32	34	30	27	28	25	23	20			20
7	59	47	39	34	54	44	37	32	37	32	28	31	27	24	26	23	21	18			18
8	55	43	35	30	50	40	33	28	34	29	25	29	25	22	24	21	19	16			16
9	51	39	32	27	47	36	30	25	31	26	22	27	23	20	22	19	17	15			15
10	48	36	29	24	44	33	27	23	29	24	20	25	21	18	20	18	15	13			13

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	3895	3895	3895
5°	3895	3824	3851
10°	3851	3740	3718
15°	3791	3607	3518
20°	3715	3428	3275
25°	3637	3229	3040
30°	3534	3026	2745
35°	3433	2809	2486
40°	3330	2585	2190
45°	3210	2338	1922
50°	3086	2089	1661
55°	2957	1824	1411
60°	2806	1549	1155
65°	2632	1270	1031
70°	2421	1011	923
75°	2155	873	826
80°	1774	707	696
85°	1161	437	488

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3210 cd/sqm



TEST NUMBER: P905197

CATALOG NUMBER: DFN2DIP-HX2F0-040D040US835-RLONL

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	154.9	2.1
10°-20°	425.3	5.8
20°-30°	597.2	8.1
30°-40°	650.9	8.8
40°-50°	598.3	8.1
50°-60°	469.9	6.4
60°-70°	305.8	4.2
70°-80°	157.4	2.1
80°-90°	42.6	0.6
90°-100°	44.5	0.6
100°-110°	165.9	2.3
110°-120°	440.1	6.0
120°-130°	729.9	9.9
130°-140°	775.4	10.5
140°-150°	720.6	9.8
150°-160°	579.4	7.9
160°-170°	373.3	5.1
170°-180°	128.5	1.7
0°-30°	1177.4	16.0
0°-40°	1828.4	24.8
0°-60°	2896.5	39.4
0°-90°	3402.4	46.2
90°-120°	650.5	8.8
90°-150°	2876.4	39.1
90°-180°	3958.0	53.8
0°-180°	7360.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1653	1653	1653	1653	1653	
5°	1653	1646	1626	1640	1635	157
15°	1572	1556	1505	1477	1462	443
25°	1427	1379	1281	1219	1197	656
35°	1230	1154	1022	928	895	770
45°	1005	905	748	642	606	776
55°	764	648	486	396	368	683
65°	516	395	260	210	205	512
75°	275	170	120	109	108	291
85°	64	33	28	28	28	74
90°	1	12	20	24	26	7
95°	63	31	38	43	42	75
105°	297	326	60	70	74	317
115°	562	578	603	150	80	553
125°	794	807	825	832	835	708
135°	983	998	1007	1017	1015	759
145°	1140	1139	1156	1162	1158	713
155°	1255	1246	1258	1264	1256	578
165°	1323	1317	1320	1326	1320	374
175°	1353	1346	1348	1355	1345	129
180°	1350	1350	1350	1350	1350	



TEST NUMBER: P905197

CATALOG NUMBER: DFN2DIP-HX2F0-040D040US835-RLLONL

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1653.2	1653.2	1653.2	1653.2	1653.2
2.5°	1660.7	1653.2	1636.7	1651.8	1648.7
5°	1653.2	1645.7	1626.2	1639.7	1635.3
7.5°	1639.7	1630.8	1609.9	1615.7	1608.3
10°	1621.8	1611.3	1581.4	1576.8	1568.0
12.5°	1599.4	1585.9	1545.4	1536.5	1520.0
15°	1572.4	1555.9	1505.1	1476.7	1461.8
17.5°	1541.0	1517.0	1454.1	1421.3	1397.3
20°	1505.1	1475.1	1400.3	1363.0	1330.0
22.5°	1466.2	1431.8	1344.9	1294.1	1271.8
25°	1427.3	1379.4	1280.6	1219.4	1196.8
27.5°	1381.0	1330.0	1220.8	1150.5	1116.0
30°	1331.6	1274.6	1154.9	1078.7	1038.3
32.5°	1283.7	1214.8	1092.2	1002.4	964.9
35°	1229.9	1153.5	1021.9	927.6	894.6
37.5°	1177.5	1095.1	956.0	852.7	815.4
40°	1122.1	1032.4	887.2	781.0	742.1
42.5°	1065.2	969.5	818.4	707.6	670.3
45°	1005.4	905.1	748.1	641.8	605.9
47.5°	948.6	842.4	680.8	574.5	541.6
50°	885.7	779.5	614.9	511.6	480.3
52.5°	824.3	712.1	552.1	453.3	424.9
55°	764.5	647.8	486.2	396.5	368.1
57.5°	703.2	583.5	427.9	344.1	320.2
60°	640.3	520.6	366.5	290.3	266.4
62.5°	579.1	459.4	314.1	242.4	230.5
65°	516.2	394.9	260.3	209.5	204.9
67.5°	456.4	335.1	209.5	184.0	179.5
70°	393.5	276.8	173.5	158.6	152.5
72.5°	333.7	222.9	145.1	133.2	130.2
75°	275.2	170.5	119.7	109.2	107.8
77.5°	217.0	121.1	94.3	88.3	85.2
80°	163.0	86.8	71.7	65.9	65.9
82.5°	113.7	58.4	49.4	46.3	46.3
85°	64.3	32.9	28.4	28.4	28.4
87.5°	24.0	11.9	11.9	10.5	10.5
90°	0.9	11.7	19.5	24.5	26.3
92.5°	24.5	20.5	23.4	25.4	26.3
95°	63.4	31.2	38.0	43.0	42.0
97.5°	114.3	34.2	49.8	52.8	53.7
100°	172.9	39.1	55.7	63.4	65.4
102.5°	237.3	235.5	57.6	68.3	71.3
105°	296.9	326.3	59.6	70.3	74.2
107.5°	366.3	390.7	61.6	72.3	76.2
110°	432.8	453.2	171.0	73.3	77.1



TEST NUMBER: P905197

CATALOG NUMBER: DFN2DIP-HX2F0-040D040US835-RLONL

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	495.3	512.8	496.2	75.2	78.2
115°	561.6	578.2	602.7	150.4	80.2
117.5°	619.3	638.8	655.5	515.7	259.8
120°	683.8	698.4	716.0	727.8	595.9
122.5°	738.4	754.1	773.7	779.5	780.5
125°	794.1	806.9	825.4	832.3	835.2
127.5°	844.9	858.6	873.3	883.1	884.0
130°	892.8	908.5	919.1	929.9	929.0
132.5°	941.6	954.4	965.1	973.9	973.0
135°	982.7	998.4	1007.1	1016.9	1015.0
137.5°	1025.6	1037.3	1047.2	1056.9	1054.0
140°	1067.6	1075.5	1086.2	1095.0	1090.1
142.5°	1102.9	1109.7	1122.4	1130.1	1125.3
145°	1140.0	1139.0	1155.5	1162.4	1157.5
147.5°	1172.1	1169.2	1185.8	1190.7	1186.9
150°	1203.4	1196.6	1212.3	1218.1	1213.2
152.5°	1229.8	1222.0	1236.6	1242.5	1235.7
155°	1255.2	1246.5	1258.2	1264.0	1256.2
157.5°	1275.7	1267.9	1276.8	1283.6	1275.7
160°	1293.3	1287.4	1293.3	1299.1	1292.3
162.5°	1308.9	1303.1	1308.0	1314.8	1306.0
165°	1322.6	1316.8	1319.7	1326.5	1319.7
167.5°	1333.4	1327.4	1330.5	1337.3	1328.5
170°	1342.2	1336.3	1338.2	1345.1	1336.3
172.5°	1348.0	1342.2	1344.2	1351.0	1342.2
175°	1352.8	1346.0	1348.0	1354.8	1345.1
177.5°	1354.8	1348.0	1349.0	1355.9	1347.1
180°	1350.0	1350.0	1350.0	1350.0	1350.0



TEST NUMBER: P905197  
 CATALOG NUMBER: DFN2DIP-HX2F0-040D040US835-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	11.37	12.17	12.37	13.17	14.50	7.35	8.15	8.35	9.16	10.48
	3H	13.02	13.74	14.03	14.75	16.10	8.52	9.24	9.53	10.25	11.60
	4H	13.61	14.29	14.63	15.30	16.66	8.96	9.64	9.98	10.65	12.01
	6H	14.01	14.63	15.04	15.65	17.02	9.27	9.89	10.29	10.91	12.28
	8H	14.13	14.72	15.16	15.75	17.12	9.35	9.94	10.38	10.97	12.34
	12H	14.18	14.74	15.22	15.77	17.16	9.38	9.94	10.42	10.97	12.36
4H	2H	11.38	12.06	12.41	13.07	14.43	7.93	8.61	8.96	9.62	10.98
	3H	13.18	13.74	14.21	14.79	16.15	9.26	9.82	10.29	10.86	12.23
	4H	13.85	14.37	14.89	15.40	16.79	9.79	10.31	10.83	11.34	12.73
	6H	14.34	14.78	15.39	15.84	17.23	10.19	10.63	11.24	11.69	13.08
	8H	14.50	14.91	15.55	15.96	17.37	10.31	10.72	11.36	11.77	13.17
	12H	14.58	14.95	15.65	16.02	17.43	10.36	10.74	11.43	11.80	13.21
8H	4H	13.81	14.23	14.86	15.28	16.68	10.05	10.47	11.11	11.52	12.92
	6H	14.35	14.69	15.42	15.78	17.18	10.55	10.89	11.62	11.98	13.38
	8H	14.55	14.85	15.63	15.93	17.35	10.73	11.02	11.81	12.10	13.52
	12H	14.67	14.93	15.76	16.01	17.47	10.83	11.09	11.91	12.16	13.62
12H	4H	13.76	14.13	14.83	15.20	16.61	10.05	10.43	11.12	11.49	12.90
	6H	14.32	14.62	15.41	15.70	17.12	10.59	10.89	11.67	11.97	13.39
	8H	14.53	14.79	15.61	15.86	17.32	10.78	11.05	11.87	12.12	13.58