

# IES Indoor Report

Photometric Filename:PHDL10WCCT-4K-2019-08-31.IES

## Indoor Luminaire Photometric Data

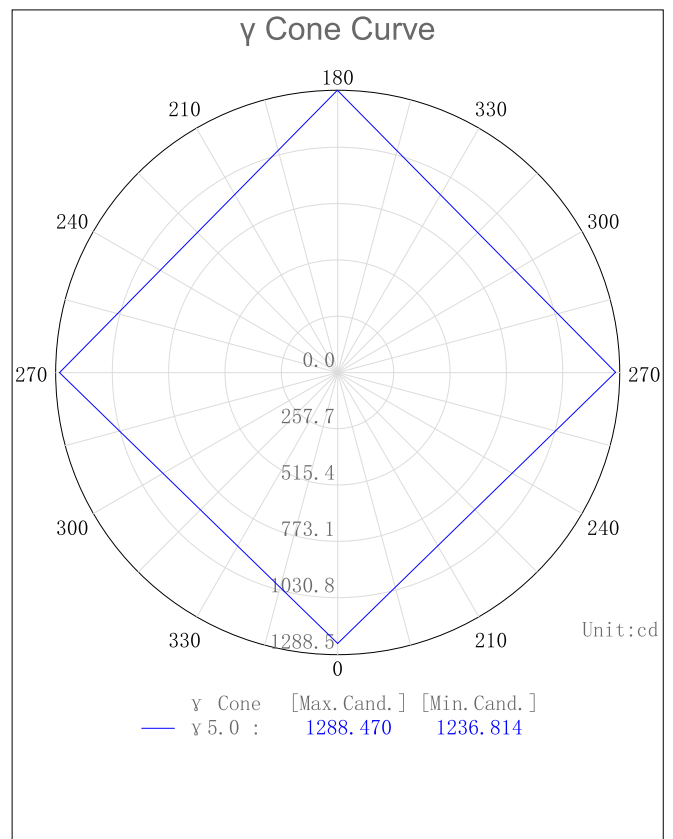
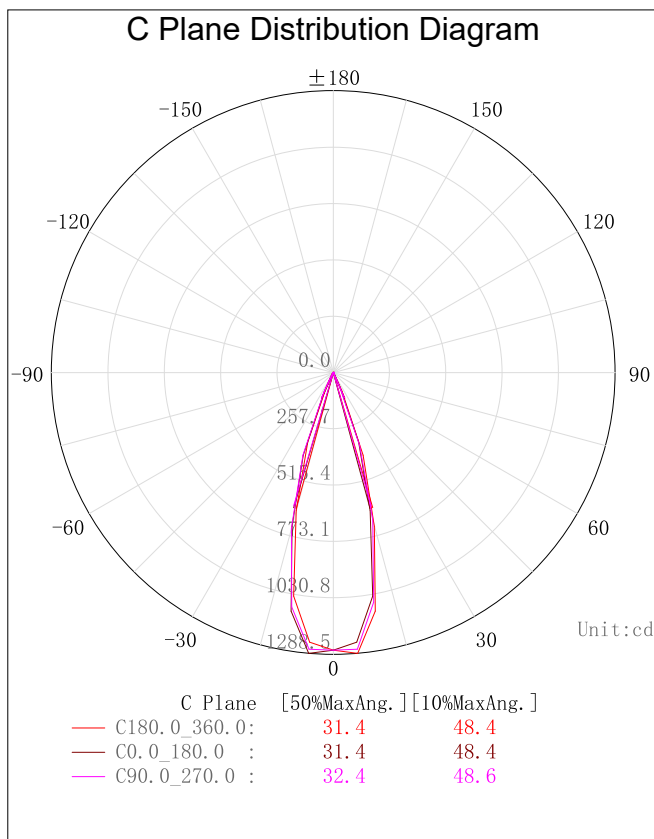
### Description Information

Lum. Name: PHDL10WCCT-4K	Lum. Catalog: LED DOWNLIGHT	Test ID:
Lamp Name: 4000K	Lamp Catalog: COB	Test Date: 2019/08/31
Manufacture:	ShldAngle(°):	Test Machine:GON-2000
Test Lab:	Frequency(Hz):	Lamp CCT(K): Ra:
Lum. Size (W*L*H):0.085m*0.085m*0.092m	Lum. Area(m2):0.015	Lum. W(kg): 2.000
Test System: C, γ	Test Step: C=90.0 γ=5.0	Temp. (°C): 25
		Humidity(%):

### Character Parameter

Lamp Speciality Parameter	Luminaire Speciality Parameter	
Rated Flux(lm): 376.720	Luminaire Flux: 376.719lm	Field Angle(10%Imax): 48.4
Rated Power(W):	Luminaire Efficiency: 100.00%	Down Lumens&Percent: 376.703lm 100.00%
Rated Voltage(V):	Luminaire EER(lm/W): 43.381	Up Lumens&Percent: 0.016lm 0.00%
Tested Power(W): 8.684	Max. Cand. (cd): 1288.470	S/MH: CO_a180=0.531 C90_270=0.543
Lamps' Inside: 1	Max Cand@Ang. (°): C=180.0 γ=5.0	CIE Type: Semi-Direct
Tested Electric:U=240.0V, I=0.038A, PF=0.000	Beam Angle(50%Imax): 31.4	ErP Φ use(90°): 375.691lm
Lamp Size(W*L*H):0.085m*0.085m*0.092m	Left=-15.1 Right=16.3	IRF: 725.585%

### Lighting Distribution Diagram



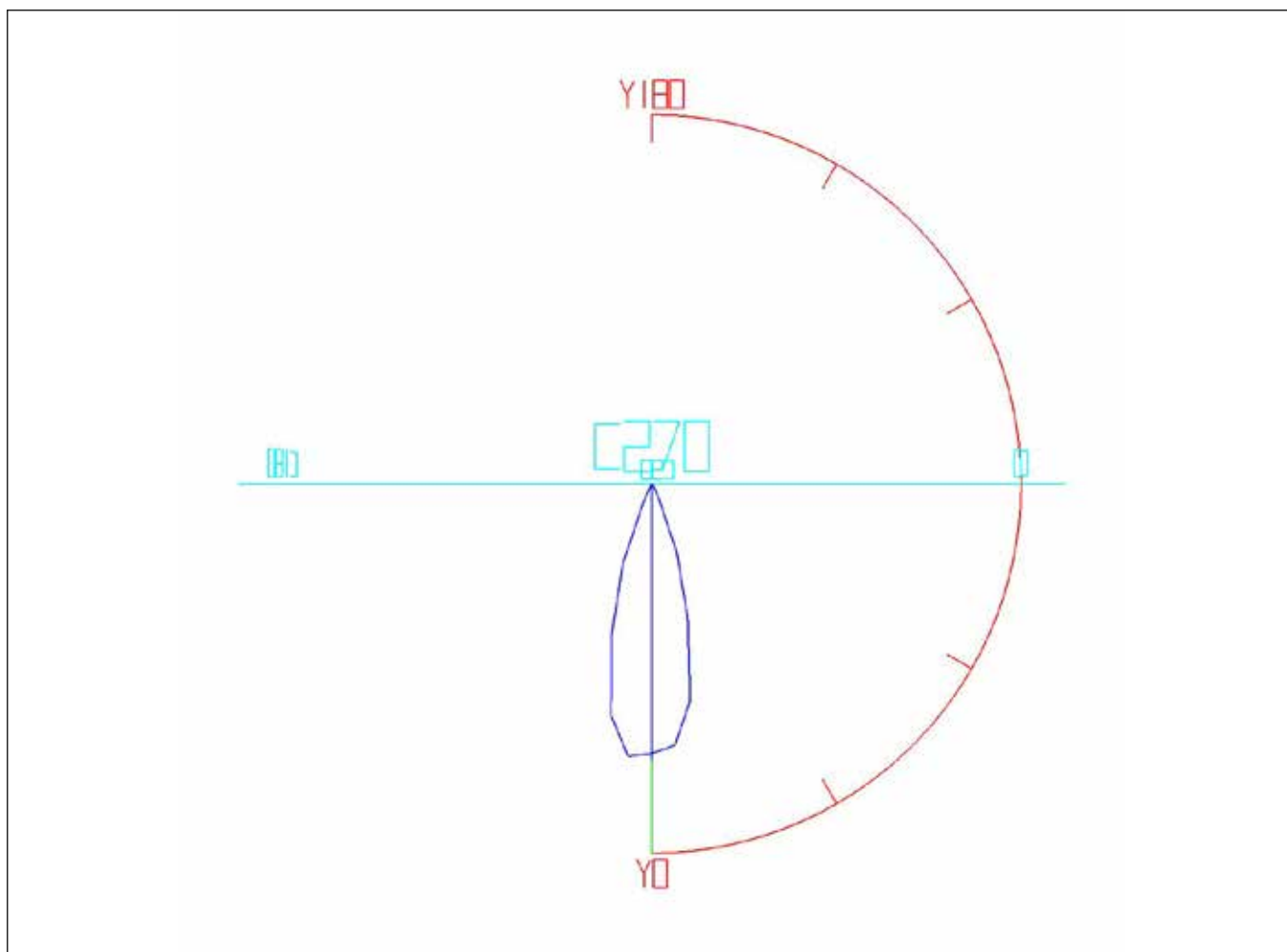
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## 3D Light Intensity Distribution Modal

Lum. Name: PHDL10WCCT-4K	Lum. Catalog: LED DOWNLIGHT	Test ID:
Lamp Name: 4000K	Lamp Catalog: COB	Test Lab:
Manufacture:	Test Machine: GON-2000	Test Date: 2019/08/31

## 3D Light Intensity Distribution Modal



Curves: 3D Model — Fixture — Vert. HUD — Hori. HUD —  
View Angles: Orient:0 Tilt:0 Roll:0 Spin:0

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## Zonal Flux Tabulation

Zone ( y )	Zone Flux (lm)	Sums Flux (lm)	Zone%Lamp	Sums%Lamp
0.0-5.0	30.31	30.31	8.04	8.04
5.0-10.0	83.71	114.02	22.22	30.27
10.0-15.0	105.45	219.47	27.99	58.26
15.0-20.0	88.81	308.28	23.57	81.83
20.0-25.0	48.16	356.44	12.78	94.62
25.0-30.0	13.02	369.46	3.46	98.07
30.0-35.0	3.70	373.17	0.98	99.06
35.0-40.0	1.70	374.86	0.45	99.51
40.0-45.0	0.64	375.51	0.17	99.68
45.0-50.0	0.13	375.64	0.04	99.71
50.0-55.0	0.04	375.68	0.01	99.72
55.0-60.0	0.05	375.72	0.01	99.74
60.0-65.0	0.11	375.83	0.03	99.76
65.0-70.0	0.17	376.00	0.05	99.81
70.0-75.0	0.30	376.31	0.08	99.89
75.0-80.0	0.30	376.60	0.08	99.97
80.0-85.0	0.10	376.70	0.03	100.00
85.0-90.0	0.00	376.70	0.00	100.00
90.0-95.0	0.00	376.70	0.00	100.00
95.0-100.0	0.00	376.70	0.00	100.00
100.0-105.0	0.00	376.70	0.00	100.00
105.0-110.0	0.00	376.70	0.00	100.00
110.0-115.0	0.00	376.70	0.00	100.00
115.0-120.0	0.00	376.70	0.00	100.00
120.0-125.0	0.00	376.70	0.00	100.00
125.0-130.0	0.00	376.70	0.00	100.00
130.0-135.0	0.00	376.70	0.00	100.00
135.0-140.0	0.00	376.70	0.00	100.00
140.0-145.0	0.00	376.70	0.00	100.00
145.0-150.0	0.00	376.70	0.00	100.00
150.0-155.0	0.00	376.71	0.00	100.00
155.0-160.0	0.01	376.71	0.00	100.00
160.0-165.0	0.00	376.72	0.00	100.00
165.0-170.0	0.00	376.72	0.00	100.00
170.0-175.0	0.00	376.72	0.00	100.00
175.0-180.0	0.00	376.72	0.00	100.00

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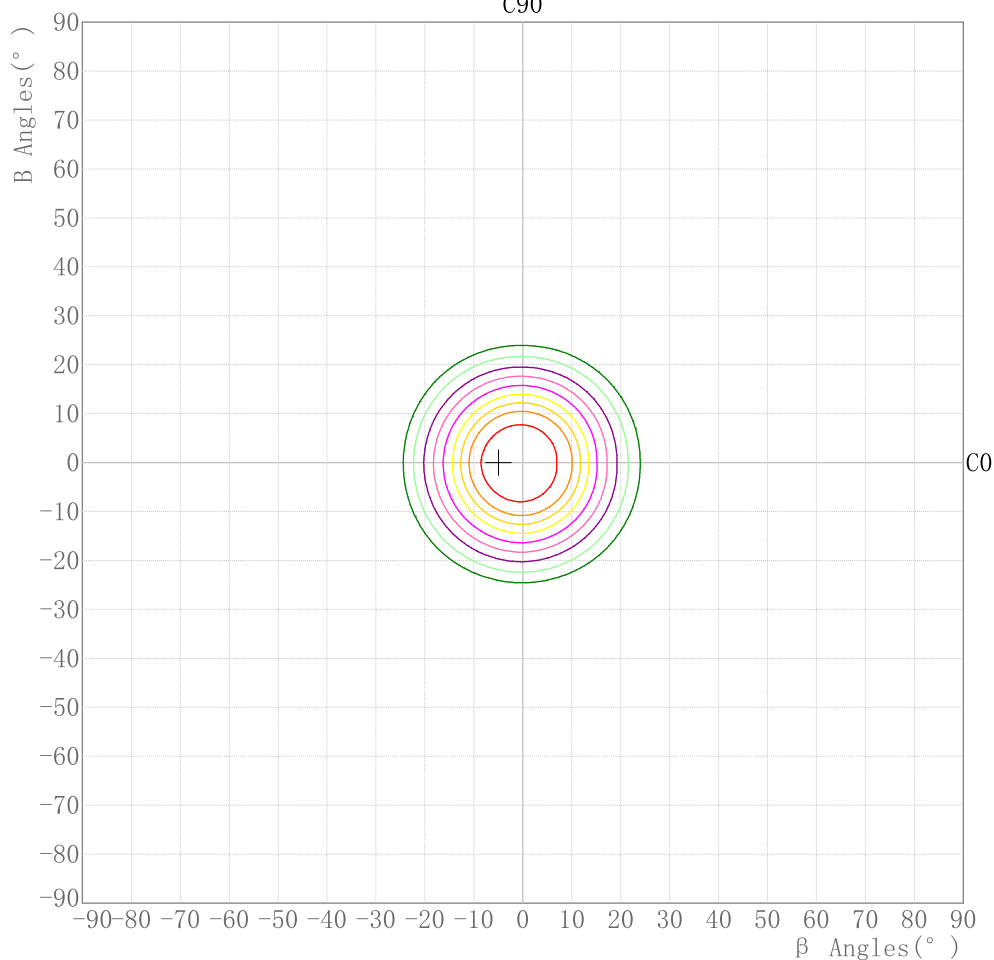
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## Rectangle ISO Lighting Intensity Diagram

Lum. Name: PHDL10WCCT-4K	Lum. Catalog: LED DOWNLIGHT	Test ID:
Lamp Name: 4000K	Lamp Catalog: COB	Test Lab:
Manufacture:	Test Machine: GON-2000	Test Date: 2019/08/31

### ISO Lighting Intensity Curve

C90



Curves:

unit:cd

[IMax] =1288.470

— [IMax\*90%]=1159.623

— [IMax\*80%]=1030.776

— [IMax\*70%]=901.929

— [IMax\*60%]=773.082

— [IMax\*50%]=644.235

— [IMax\*40%]=515.388

— [IMax\*30%]=386.541

— [IMax\*20%]=257.694

— [IMax\*10%]=128.847

Maximum Light Intensity(cd): 1288.47

Maximum Cand.@Angle: H=-5.0°,V=0.0°

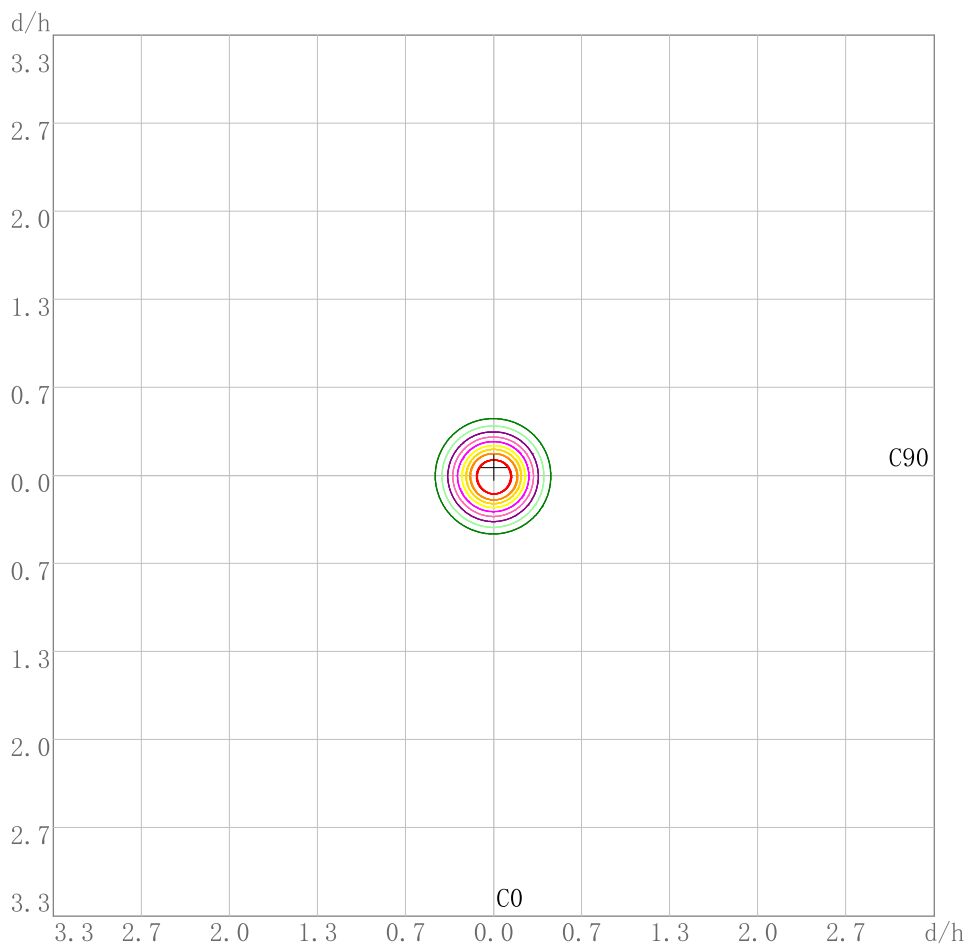
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## Plane ISO-Illuminance Diagram

Lum. Name: PHDL10WCCT-4K	Lum. Catalog: LED DOWNLIGHT	Test ID:
Lamp Name: 4000K	Lamp Catalog: COB	Test Lab:
Manufacture:	Test Machine: GON-2000	Test Date: 2019/08/31

### Plane ISO-Illuminance Curve



- Curves:**  
 unit: lx  
 [EMax] = 141.726
- [EMax\*90%]=127.554
  - [EMax\*80%]=113.381
  - [EMax\*70%]=99.208
  - [EMax\*60%]=85.036
  - [EMax\*50%]=70.863
  - [EMax\*40%]=56.690
  - [EMax\*30%]=42.518
  - [EMax\*20%]=28.345
  - [EMax\*10%]=14.173

Working Plane Luminaire Mounting Height(m): 3.00  
 Working Plane Maximum Illuminance(lx): 141.73  
 Working Plane Maximum Illuminance Position(d/h): H0.0 V-0.1

# IES Indoor Report

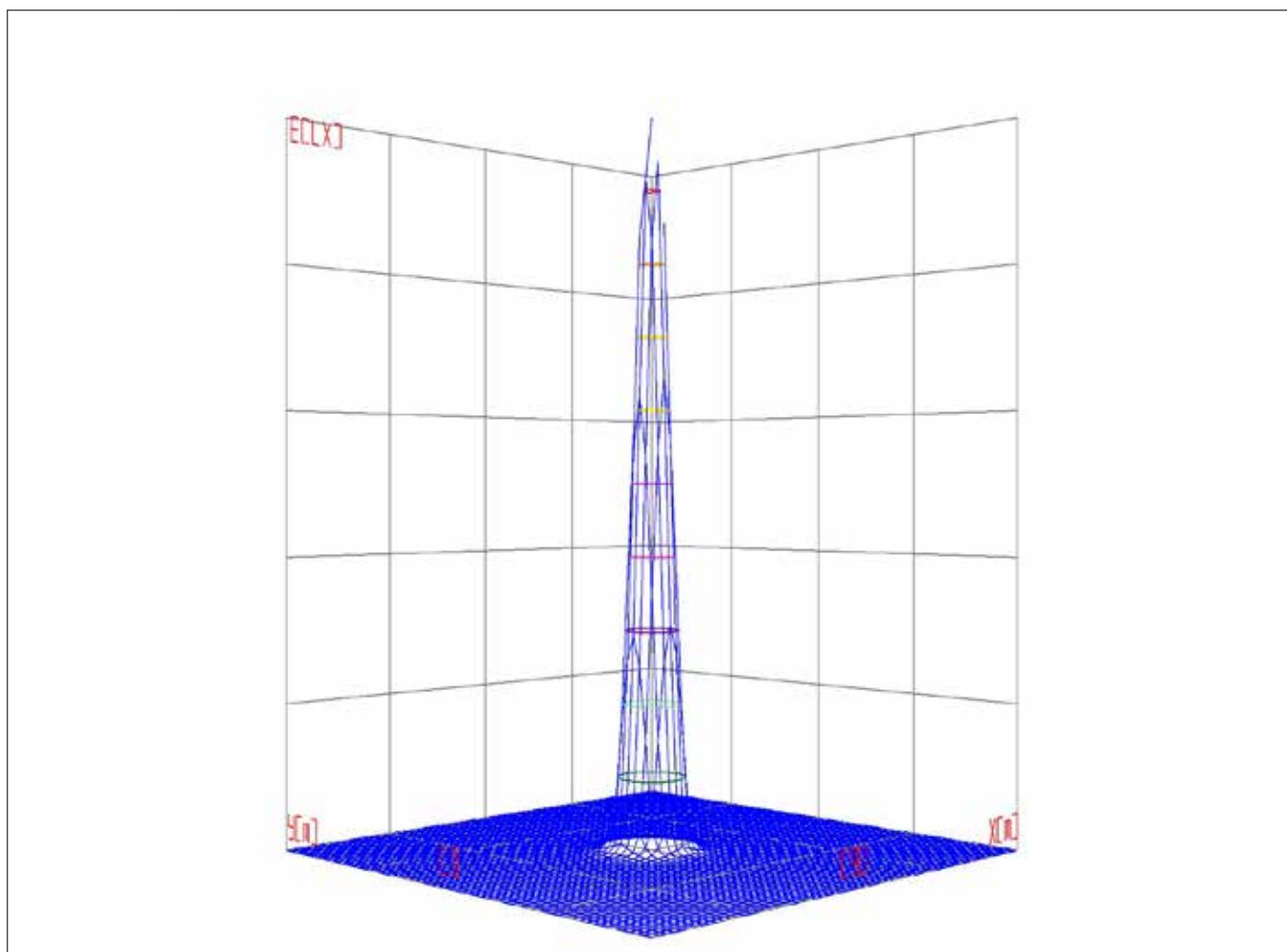
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## 3D Plane ISO Illuminance Diagram

Lum. Name: PHDL10WCCT-4K	Lum. Catalog: LED DOWNLIGHT	Test ID:
Lamp Name: 4000K	Lamp Catalog: COB	Test Lab:
Manufacture:	Test Machine: GON-2000	Test Date: 2019/08/31

### 3D Plane Illuminance Modal



Curves: 3D Model — 90% — 80% — 70% — 60% — 50% — 40% — 30% — 20% — 10% —  
View Angles(deg): 0    Height(m): 3.0    Distance(m): 10.0

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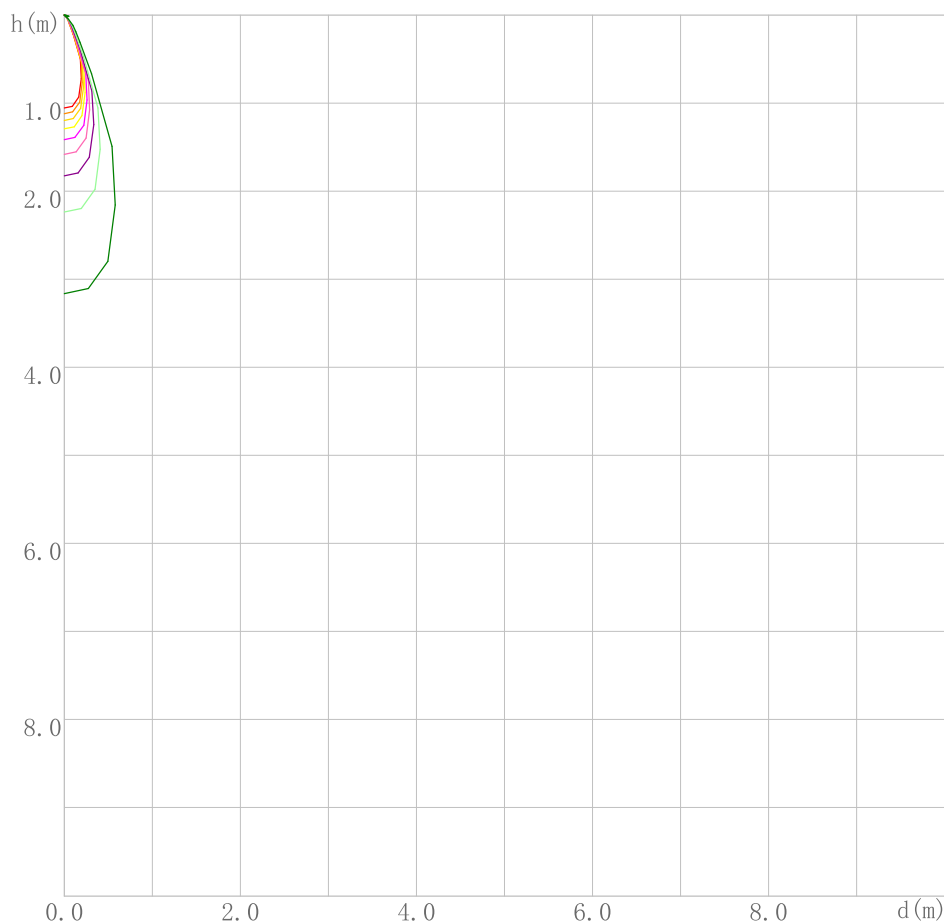
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## Space ISO Illuminance Diagram

Lum. Name: PHDL10WCCT-4K	Lum. Catalog: LED DOWNLIGHT	Test ID:
Lamp Name: 4000K	Lamp Catalog: COB	Test Lab:
Manufacture:	Test Machine:GON-2000	Test Date: 2019/08/31

### Space ISO Illuminance Curve

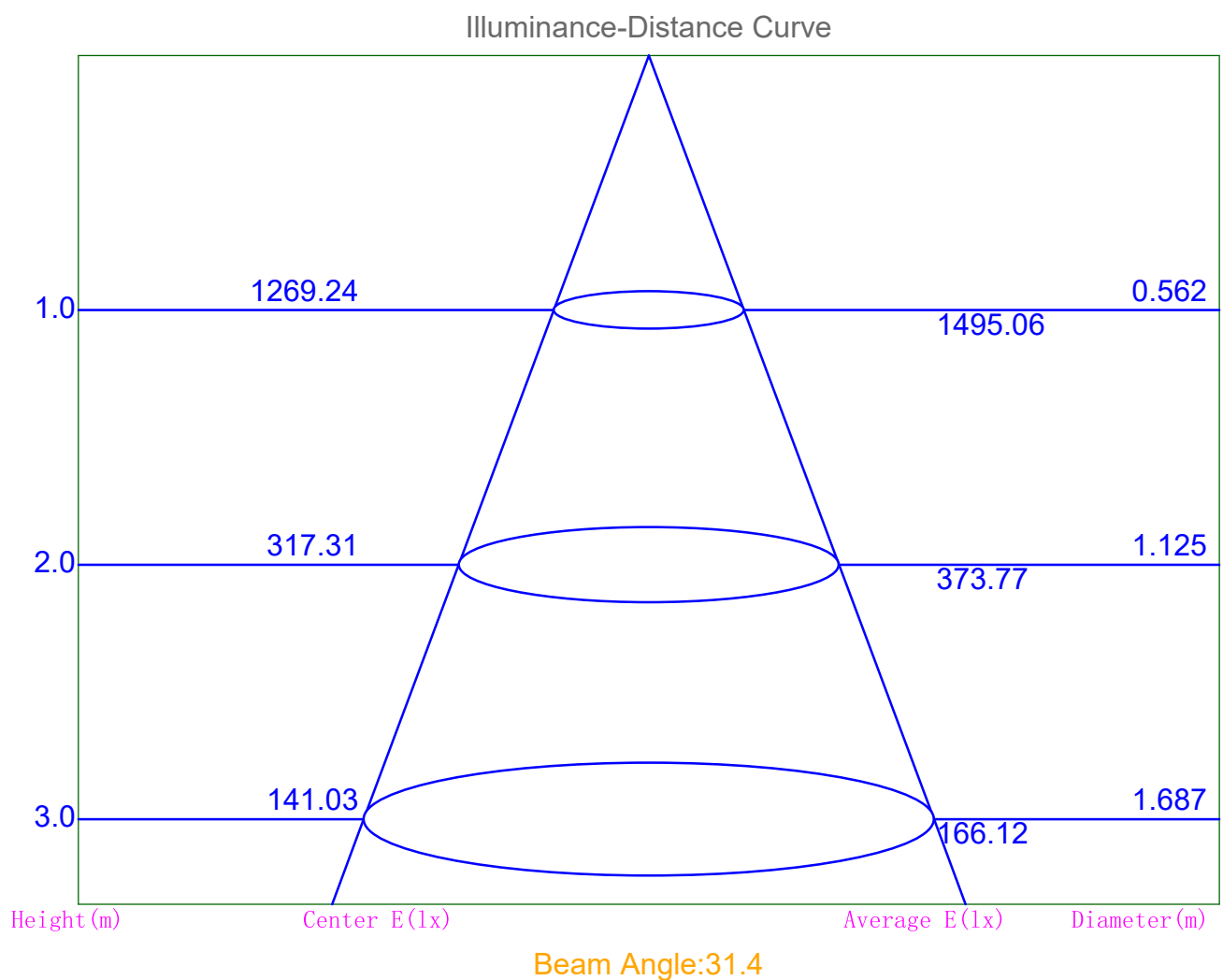


- Curves:  
unit:lx  
[EMax] =1269.237  
— [EMax\*90%]=1142.313  
— [EMax\*80%]=1015.390  
— [EMax\*70%]=888.466  
— [EMax\*60%]=761.542  
— [EMax\*50%]=634.619  
— [EMax\*40%]=507.695  
— [EMax\*30%]=380.771  
— [EMax\*20%]=253.847  
— [EMax\*10%]=126.924

Space Plane Maximum Illuminance and @Angle:1269.24,0.0deg  
Plane Maximum Lighting Intensity and @Angle:1269.237cd,0deg

**Illuminance-Distance Diagram**

Lum. Name: PHDL10WCCT-4K	Lum. Catalog: LED DOWNLIGHT	Test ID:
Lamp Name: 4000K	Lamp Catalog: COB	Test Lab:
Manufacture:	Test Machine:GON-2000	Test Date: 2019/08/31





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## Indoor Luminance Limiting Curves

Lum. Name: PHDL10WCCT-4K	Lum. Catalog: LED DOWNLIGHT	Test ID:
Lamp Name: 4000K	Lamp Catalog: COB	Test Lab:
Manufacture:	Test Machine:GON-2000	Test Date: 2019/08/31

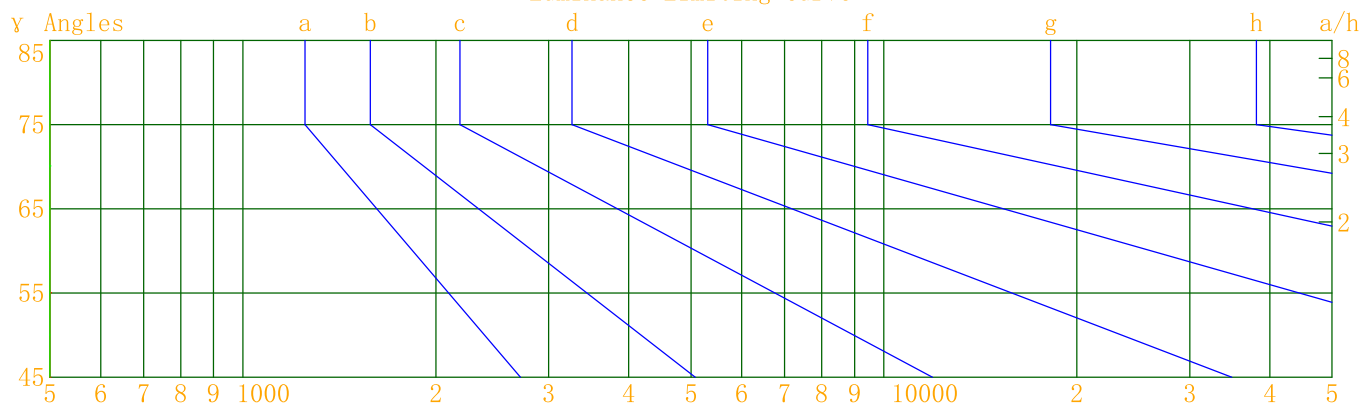
Glare Grade Table

GI	Quality	Using Illuminance							
		a	b	c	d	e	f	g	h
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E	a				2000	1000	500	<=300
			b	c	d	e	f	g	h

Luminance Table

Gama (deg)	45	50	55	60	65	70	75	80	85
C0	75	5	0	38	86	160	357	427	0
C90	0	0	0	0	0	0	52	0	0

Luminance Limiting Curve



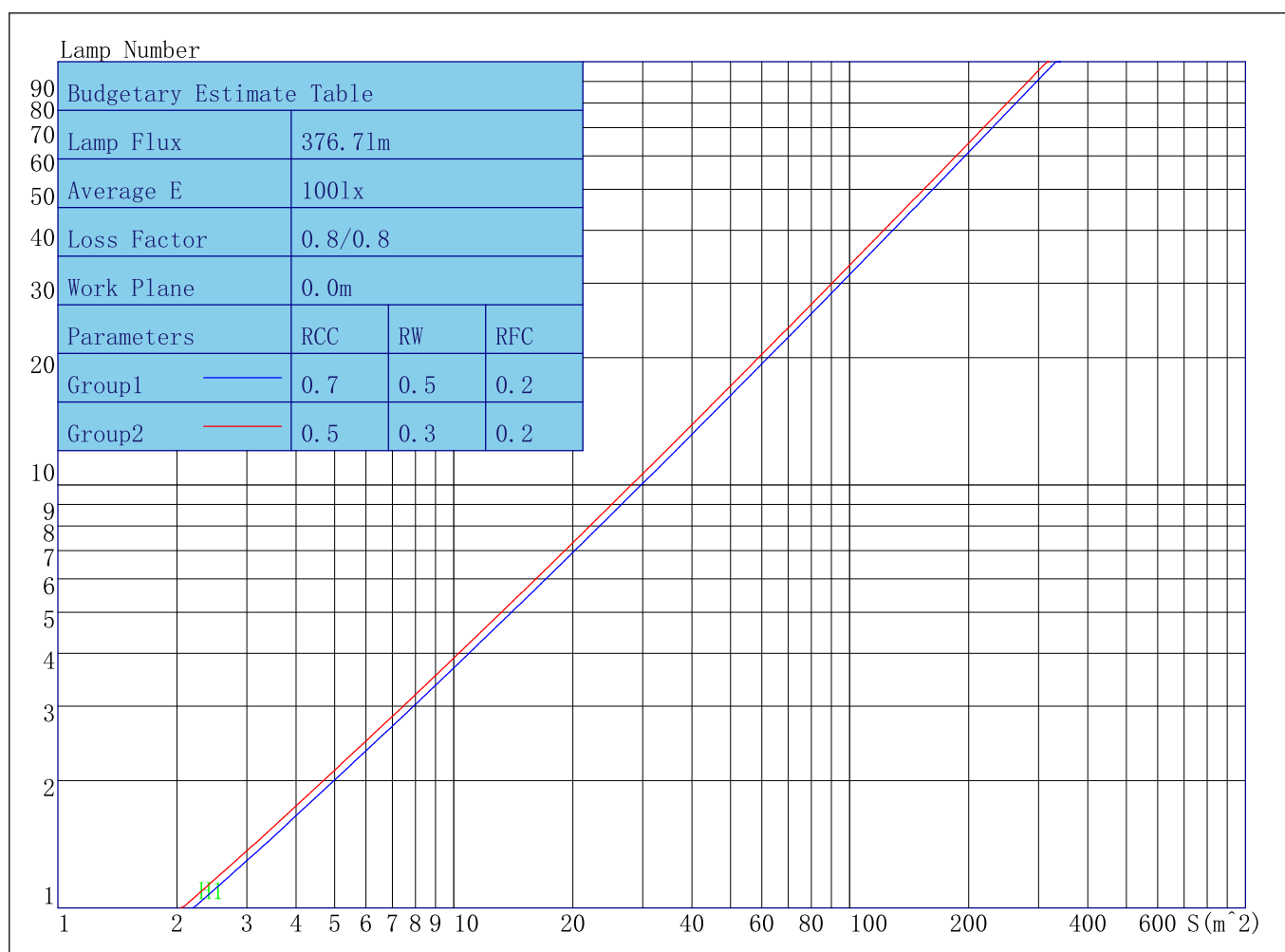
Luminous Size: Length(m)=0.085 Width(m)=0.085 Height(m)=0.092 Area(m<sup>2</sup>)=0.015045  
 Luminous Type: Without Luminous Side  
 Luminous Curves: C0-C180 Color: — C90-C270 Color: —

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## Indoor Budgetary Estimate Table

Lum. Name: PHDL10WCCT-4K	Lum. Catalog: LED DOWNLIGHT	Test ID:
Lamp Name: 4000K	Lamp Catalog: COB	Test Lab:
Manufacture:	Test Machine: GON-2000	Test Date: 2019/08/31



Parameters1: Rhocc = 0.7 Rhow = 0.5 Rhofc = 0.2 LLF = 0.8  
 Parameters2: Rhocc = 0.5 Rhow = 0.3 Rhofc = 0.2 LLF = 0.8  
 Average Illuminance(lx): 100 Cavity Height: H1(m) = 2

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## Indoor Coefficient of Utilization Table

Lum. Name: PHDL10WCCT-4K	Lum. Catalog: LED DOWNLIGHT	Test ID:
Lamp Name: 4000K	Lamp Catalog: COB	Test Lab:
Manufacture:	Test Machine:GON-2000	Test Date: 2019/08/31

Coefficients of Utilization - Zonal Cavity Method																		
Coef.	Effective Floor Cavity Reflectance RFC=0.20																	
RhoCC (%)	80				70				50			30			10			0
RhoW (%)	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR	Coefficient of Utilization(%)																	
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	115	113	111	109	113	111	109	107	107	105	104	103	102	101	100	99	98	97
2	111	108	105	102	109	106	103	101	103	101	99	100	98	97	97	96	95	93
3	108	103	99	97	106	102	98	96	99	97	94	97	95	93	95	93	91	90
4	104	99	95	92	103	98	94	91	96	93	90	94	92	89	92	90	88	87
5	101	95	91	88	100	94	91	88	93	90	87	91	89	86	90	88	86	85
6	98	92	88	85	97	91	87	85	90	87	84	89	86	84	88	85	83	82
7	95	89	85	82	94	88	84	82	87	84	81	86	83	81	85	83	81	80
8	93	86	82	79	92	86	82	79	85	81	79	84	81	78	83	80	78	77
9	90	84	79	77	89	83	79	77	82	79	76	82	78	76	81	78	76	75
10	88	81	77	74	87	81	77	74	80	77	74	79	76	74	79	76	74	73

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## Unified Glare Rating Table

Lum. Name: PHDL10WCCT-4K	Lum. Catalog: LED DOWNLIGHT	Test ID:
Lamp Name: 4000K	Lamp Catalog: COB	Test Lab:
Manufacture:	Test Machine:GON-2000	Test Date: 2019/08/31

## Unified Glare Rating Table

Ceiling RCC	0.70	0.70	0.50	0.50	0.30	0.70	0.70	0.50	0.50	0.30
Wall RW	0.50	0.30	0.50	0.30	0.30	0.50	0.30	0.50	0.30	0.30
Floor RFC	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
Room Size	Vewed crosswise					Vewed endwise				
X=2H Y=2H	14.6	16.1	15.3	16.7	17.3	14.9	16.4	15.6	17.0	17.6
Y=3H	14.3	15.8	15.0	16.4	17.0	14.5	16.0	15.3	16.7	17.2
Y=4H	14.4	15.9	15.1	16.5	17.1	14.4	15.9	15.1	16.5	17.1
Y=6H	14.7	16.2	15.4	16.8	17.4	14.2	15.7	14.9	16.3	16.9
Y=8H	14.8	16.3	15.5	16.9	17.5	14.1	15.6	14.9	16.3	16.8
Y=12H	14.7	16.2	15.5	16.9	17.4	14.1	15.6	14.8	16.2	16.7
X=4H Y=2H	14.1	15.6	14.8	16.2	16.8	14.4	15.9	15.1	16.5	17.1
Y=3H	13.8	15.3	14.5	15.9	16.5	14.0	15.6	14.8	16.2	16.7
Y=4H	11.8	12.8	12.7	13.7	14.4	11.8	12.8	12.7	13.7	14.4
Y=6H	12.2	13.3	13.2	14.1	14.9	11.6	12.7	12.6	13.5	14.3
Y=8H	12.4	13.5	13.4	14.3	15.1	11.6	12.6	12.5	13.5	14.2
Y=12H	11.5	12.3	12.5	13.3	14.1	10.6	11.4	11.7	12.4	13.2
X=8H Y=4H	11.5	12.6	12.5	13.4	14.2	11.6	12.6	12.5	13.5	14.2
Y=6H	11.2	12.0	12.2	12.9	13.8	10.6	11.4	11.7	12.4	13.2
Y=8H	10.9	11.5	12.0	12.6	13.5	10.1	10.7	11.2	11.8	12.7
Y=12H	10.8	11.5	11.9	12.5	13.5	10.0	10.7	11.1	11.7	12.6
X=12H Y=4H	10.6	11.4	11.6	12.3	13.2	10.6	11.4	11.7	12.4	13.2
Y=6H	10.6	11.3	11.7	12.3	13.2	10.0	10.7	11.2	11.8	12.7
Y=8H	10.8	11.5	11.9	12.5	13.4	10.0	10.7	11.1	11.7	12.6
Variations with the objver position at spacings										
S=1.0H	-13.0/-146.8					-25.0/-147.1				
S=1.5H	-19.8/-146.8					-31.8/-147.1				
S=2.0H	-22.4/-146.8					-36.3/-147.1				

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## Candela Tabulation

V/H	C0.0	C90.0	C180.0	C270.0
Υ 0.0	1269.24	1269.24	1269.24	1269.24
Υ 5.0	1236.81	1269.28	1288.47	1269.03
Υ 10.0	1037.03	1065.33	1107.43	1087.17
Υ 15.0	653.05	696.28	727.00	737.24
Υ 20.0	339.13	353.51	401.88	402.34
Υ 25.0	75.54	68.38	93.73	102.27
Υ 30.0	18.79	12.69	16.31	23.88
Υ 35.0	8.17	4.97	5.85	9.95
Υ 40.0	3.85	1.39	1.51	4.97
Υ 45.0	0.80	0.00	0.00	1.38
Υ 50.0	0.05	0.00	0.00	0.44
Υ 55.0	0.00	0.00	0.00	0.18
Υ 60.0	0.28	0.00	0.00	0.37
Υ 65.0	0.55	0.00	0.00	0.53
Υ 70.0	0.82	0.00	0.00	0.82
Υ 75.0	1.39	0.20	0.00	1.39
Υ 80.0	1.12	0.00	0.00	0.35
Υ 85.0	0.00	0.00	0.00	0.00
Υ 90.0	0.00	0.00	0.00	0.00
Υ 95.0	0.00	0.00	0.00	0.00
Υ 100.0	0.00	0.00	0.00	0.00
Υ 105.0	0.00	0.00	0.00	0.00
Υ 110.0	0.00	0.00	0.00	0.00
Υ 115.0	0.00	0.00	0.00	0.00
Υ 120.0	0.00	0.00	0.00	0.00
Υ 125.0	0.00	0.00	0.00	0.00
Υ 130.0	0.00	0.00	0.00	0.00
Υ 135.0	0.00	0.00	0.00	0.00
Υ 140.0	0.00	0.00	0.00	0.00
Υ 145.0	0.00	0.00	0.00	0.00
Υ 150.0	0.00	0.00	0.00	0.00
Υ 155.0	0.13	0.00	0.00	0.00
Υ 160.0	0.15	0.00	0.00	0.00
Υ 165.0	0.00	0.04	0.00	0.00
Υ 170.0	0.00	0.02	0.00	0.00
Υ 175.0	0.00	0.00	0.00	0.00
Υ 180.0	0.00	0.00	0.00	0.00