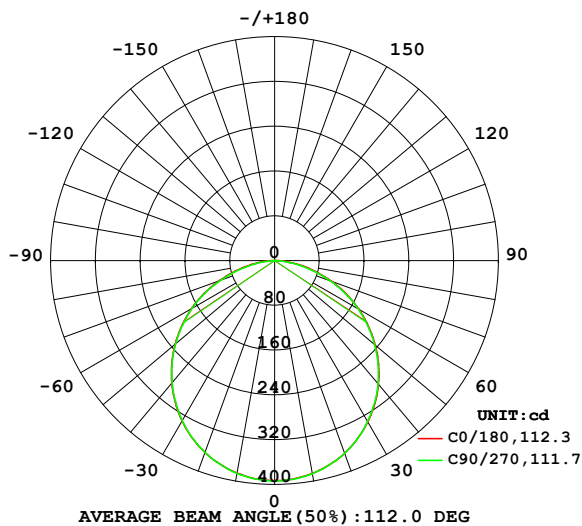


## LUMINAIRE PHOTOMETRIC TEST REPORT

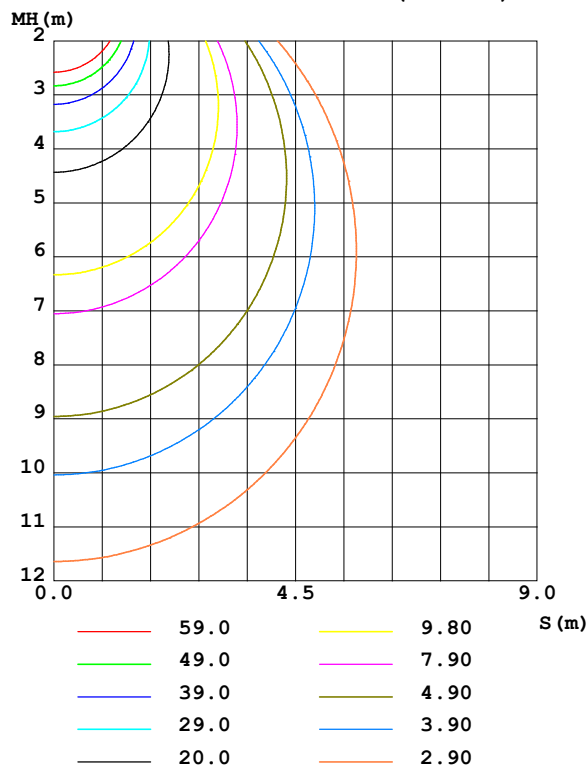
Test:U:230.40V I:0.0586A P:12.499W PF:0.9252 Freq:49.99Hz UTHDi:0.00% ITHDi:0.00% KDisp:0 Lamp Flux:1112.02x1 lm		
NameAA: PL1721-12W-DD	Type: 12W	Weight:
SPEC.: 4000K	DIM.:	Instrument No.: HUP-IES2
MFR.:	SUR.: 0.064	shielding angle:

DATA OF LAMP		PHOTOMETRIC DATA				Eff: 88.97 lm/W
MODEL	PL1721-12W-DD	Imax (cd)	393.6	S/MH(C0/180)	1.25	
NOMINAL POWER(W)	12	LOR(%)	100.0	S/MH(C90/270)	1.26	
RATED VOLTAGE(V)	230	TOTAL FLUX(lm)	1112.0	$\eta$ UP,DN(C0-180)	0.0,49.8	
NOMINAL FLUX(lm)	1112.02	CIE CLASS	DIRECT	$\eta$ UP,DN(C180-360)	0.0,50.2	
LAMPS INSIDE	1	$\eta$ up (%)	0.0	CIBSE SHR NOM	1.25	
TEST VOLTAGE(V)	230	$\eta$ down (%)	100.0	CIBSE SHR MAX	1.35	

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



C Range: 0 - 360DEG  
C Interval: 45.0DEG  
Test Speed: HIGH  
Temperature:25.3℃  
Operators:LIXIAOFEI  
Test Date:2023-10-17

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 1.0DEG  
Test System:EVERFINE GO-2000H\_V1 SYSTEM V2.00.456  
Humidity:65.0%  
Test Distance:9.750m [K=1.0000]  
Remarks:

## ZONAL FLUX DIAGRAM

## ZONAL FLUX DIAGRAM:

$\gamma$	C0	C45	C90	C135	C180	C225	C270	C315	$\gamma$	$\Phi$ zone	$\Phi$ total	%lum, lamp
10	385.6	386.1	385.9	386.8	386.3	386.3	386.6	386.3	0- 10	37.21	37.21	3.35,3.35
20	364.6	365.1	364.5	366.3	366.3	365.8	366.2	365.1	10- 20	106.5	143.7	12.9,12.9
30	330.7	331.6	330.5	332.7	333.1	332.2	332.4	330.9	20- 30	161.3	305.1	27.4,27.4
40	285.9	286.4	284.9	287.7	288.6	287.5	287.5	285.8	30- 40	194.2	499.3	44.9,44.9
50	231.9	232.2	230.9	233.6	234.7	233.7	233.4	231.7	40- 50	201.1	700.4	63,63
60	171.1	170.9	169.9	172.2	173.7	173.1	172.3	170.9	50- 60	181.3	881.7	79.3,79.3
70	104.9	105.1	102.1	105.9	107.8	107.8	105.7	105.5	60- 70	137.6	1019	91.7,91.7
80	42.57	39.80	35.01	40.13	44.99	42.56	38.45	40.54	70- 80	76.37	1096	98.5,98.5
90	0.0611	0.0427	0.0305	0.0427	0.0549	0.0429	0.0305	0.0549	80- 90	16.39	1112	100,100
100									90-100			
110									100-110			
120									110-120			
130									120-130			
140									130-140			
150									140-150			
160									150-160			
170									160-170			
180									170-180			
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

Conical surface Flux(90deg): 600.66 lm

%lum = 54.0%

%lamp = 54.0%

Conical surface Flux(120deg): 881.69 lm

%lum = 79.3%

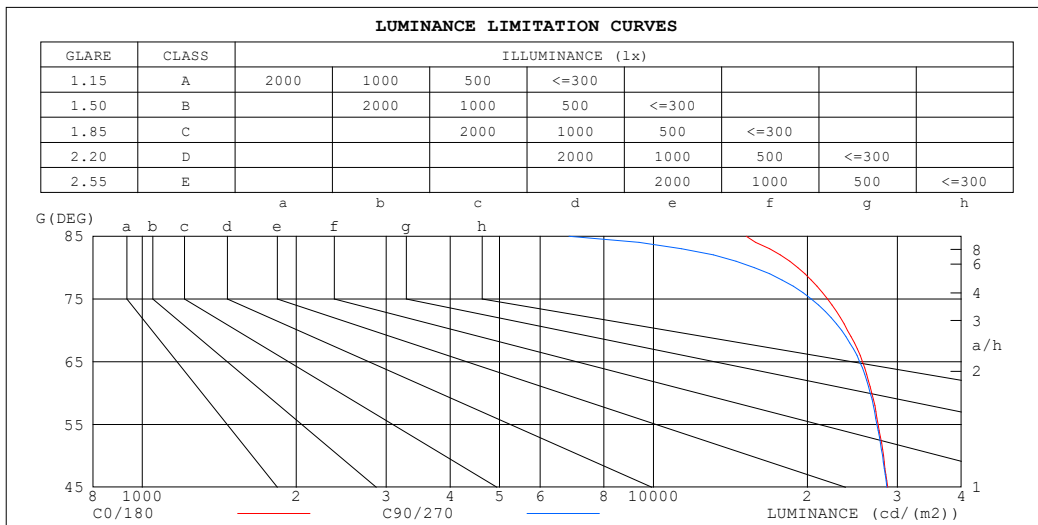
%lamp = 79.3%

C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature:25.3℃  
 Operators:LIXIAOFEI  
 Test Date:2023-10-17

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 1.0DEG  
 Test System:EVERFINE GO-2000H\_V1 SYSTEM V2.00.456  
 Humidity:65.0%  
 Test Distance:9.750m [K=1.0000]  
 Remarks:

## LUMINANCE LIMITATION CURVES

Test:U:230.40V I:0.0586A P:12.499W PF:0.9252 Freq:49.99Hz UTHDi:0.00% ITHDi:0.00% KDisp:0 Lamp Flux:1112.02x1 lm		
NameAA: PL1721-12W-DD	Type: 12W	Weight:
SPEC.: 4000K	DIM.:	Instrument No.: HUP-IES2
MFR.:	SUR.: 0.064	shielding angle:



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	15196	6834
80	19150	15752
75	21909	20369
70	23969	23327
65	25644	25322
60	26742	26543
55	27520	27347
50	28179	28061
45	28713	28618

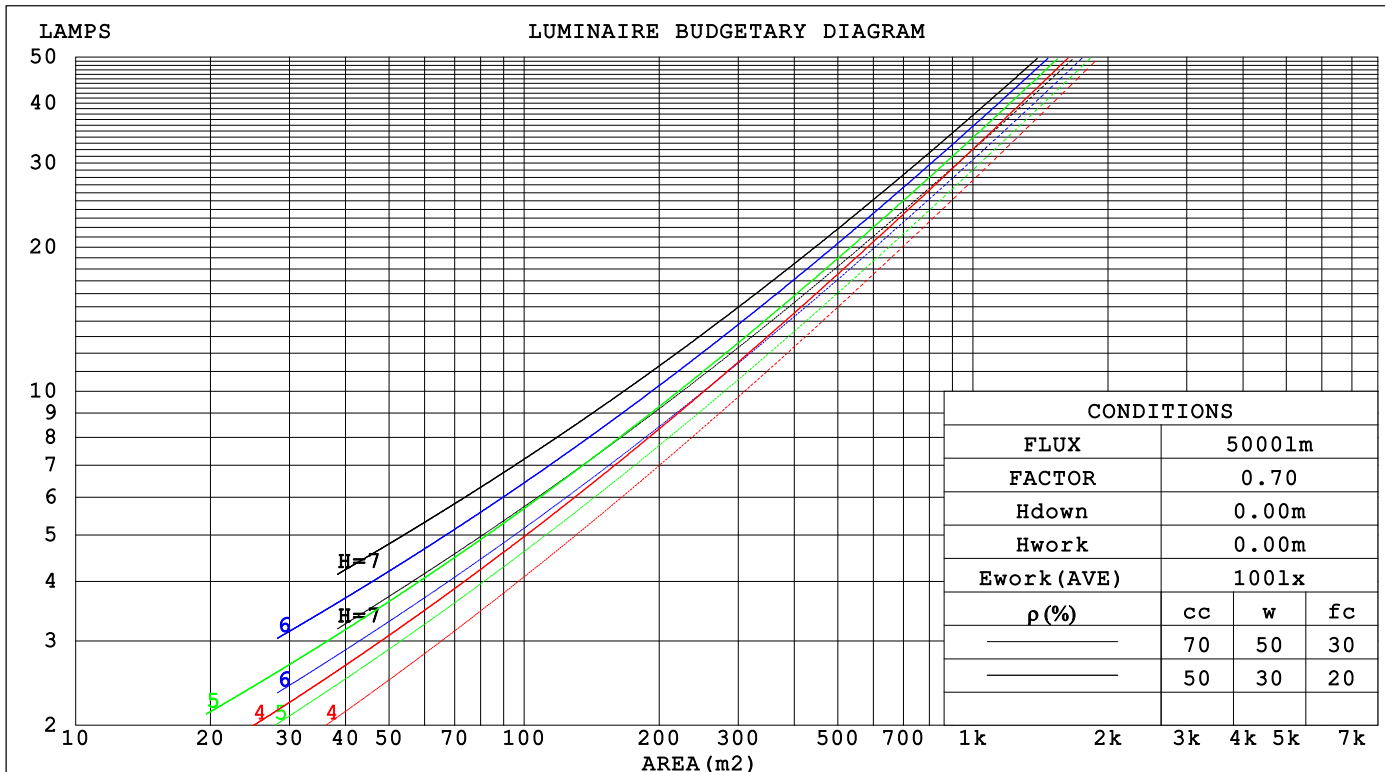
C Range: 0 - 360DEG  
C Interval: 45.0DEG  
Test Speed: HIGH  
Temperature: 25.3°C  
Operators: LIXIAOFEI  
Test Date: 2023-10-17

γ Range: 0 - 90DEG  
γ Interval: 1.0DEG  
Test System: EVERFINE GO-2000H\_V1 SYSTEM V2.00.456  
Humidity: 65.0%  
Test Distance: 9.750m [K=1.0000]  
Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:230.40V I:0.0586A P:12.499W PF:0.9252 Freq:49.99Hz			UTHDi:0.00% ITHDi:0.00% KDisp:0			Lamp Flux:1112.02x1 lm		
NameAA: PL1721-12W-DD			Type: 12W			Weight:		
SPEC.: 4000K			DIM.:			Instrument No.: HUP-IES2		
MFR.:			SUR.: 0.064			shielding angle:		

pcc	80%			70%			50%			30%			10%			0
pw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
pfc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio                      Coefficients of Utilization(CU)															
0.0	1.19	1.19	1.19	1.16	1.16	1.16	1.11	1.11	1.11	1.06	1.06	1.06	1.02	1.02	1.02	1.00
1.0	1.04	.00	.96	1.02	.98	.94	.98	.94	.92	.94	.91	.89	.90	.88	.86	.84
2.0	.91	.84	.78	.89	.83	.77	.85	.80	.75	.82	.78	.74	.79	.75	.72	.70
3.0	.80	.71	.65	.78	.70	.64	.75	.69	.63	.72	.67	.62	.70	.65	.61	.59
4.0	.70	.62	.55	.69	.61	.55	.67	.59	.54	.64	.58	.53	.62	.57	.52	.50
5.0	.63	.54	.47	.62	.53	.47	.60	.52	.46	.58	.51	.46	.56	.50	.45	.43
6.0	.57	.48	.41	.56	.47	.41	.54	.46	.41	.52	.45	.40	.51	.45	.40	.38
7.0	.51	.43	.36	.51	.42	.36	.49	.41	.36	.48	.41	.36	.46	.40	.35	.33
8.0	.47	.38	.32	.46	.38	.32	.45	.37	.32	.44	.37	.32	.42	.36	.32	.30
9.0	.43	.35	.29	.42	.34	.29	.41	.34	.29	.40	.34	.29	.39	.33	.29	.27
10.0	.40	.32	.26	.39	.32	.26	.38	.31	.26	.37	.31	.26	.36	.30	.26	.24



C Range: 0 - 360DEG  
C Interval: 45.0DEG  
Test Speed: HIGH  
Temperature:25.3℃  
Operators:LIXIAOFEI  
Test Date:2023-10-17

γ Range: 0 - 90DEG  
γ Interval: 1.0DEG  
Test System:EVERFINE GO-2000H\_V1 SYSTEM V2.00.456  
Humidity:65.0%  
Test Distance:9.750m [K=1.0000]  
Remarks:

### WEC AND CCEC

Test:U:230.40V I:0.0586A P:12.499W PF:0.9252 Freq:49.99Hz		
UTHDi:0.00% ITHDi:0.00% KDisp:0      Lamp Flux:1112.02x1 lm		
NameAA: PL1721-12W-DD	Type: 12W	Weight:
SPEC.: 4000K	DIM.:	Instrument No.: HUP-IES2
MFR.:	SUR.: 0.064	shielding angle:

pcc	80%			70%			50%			30%			10%			0	
pw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0	
pfc	20%			20%			20%			20%			20%			0	
RCR	RCR:Room Cavity Ratio						Wall Exitance Coefficients(WEC)										
0.0																	
1.0	.305	.173	.055	.298	.170	.054	.285	.163	.052	.273	.157	.050	.261	.151	.049		
2.0	.289	.158	.049	.283	.156	.048	.271	.151	.047	.260	.146	.046	.250	.142	.045		
3.0	.268	.143	.043	.263	.141	.042	.253	.137	.042	.243	.133	.041	.234	.130	.040		
4.0	.248	.129	.038	.243	.127	.038	.234	.124	.037	.226	.121	.037	.218	.118	.036		
5.0	.230	.117	.034	.225	.116	.034	.217	.113	.033	.210	.111	.033	.202	.108	.033		
6.0	.213	.107	.031	.209	.106	.030	.202	.104	.030	.195	.101	.030	.189	.099	.030		
7.0	.198	.098	.028	.195	.097	.028	.189	.095	.027	.182	.094	.027	.177	.092	.027		
8.0	.185	.091	.025	.182	.090	.025	.177	.088	.025	.171	.087	.025	.166	.085	.025		
9.0	.174	.084	.023	.171	.083	.023	.166	.082	.023	.161	.081	.023	.156	.079	.023		
10.0	.163	.078	.022	.161	.078	.022	.156	.077	.022	.152	.075	.021	.148	.074	.021		

pcc	80%			70%			50%			30%			10%			0	
pw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0	
pfc	20%			20%			20%			20%			20%			0	
RCR	RCR:Room Cavity Ratio						Ceiling Cavity Exitance Coefficients (CCEC)										
0.0	.190	.190	.190	.163	.163	.163	.111	.111	.111	.064	.064	.064	.020	.020	.020		
1.0	.180	.156	.135	.154	.134	.116	.105	.092	.080	.061	.053	.047	.019	.017	.015		
2.0	.172	.132	.098	.147	.114	.085	.101	.079	.059	.058	.046	.035	.019	.015	.011		
3.0	.164	.114	.075	.141	.099	.065	.097	.068	.045	.056	.040	.027	.018	.013	.009		
4.0	.157	.101	.058	.134	.087	.051	.092	.061	.036	.053	.036	.021	.017	.012	.007		
5.0	.149	.091	.047	.128	.078	.041	.088	.055	.029	.051	.032	.017	.016	.010	.006		
6.0	.142	.082	.039	.122	.071	.034	.084	.050	.024	.049	.029	.014	.016	.010	.005		
7.0	.135	.075	.033	.116	.065	.029	.080	.046	.021	.047	.027	.012	.015	.009	.004		
8.0	.129	.069	.029	.111	.060	.025	.077	.042	.018	.045	.025	.011	.014	.008	.004		
9.0	.123	.065	.025	.106	.056	.022	.073	.039	.016	.043	.023	.009	.014	.008	.003		
10.0	.117	.060	.022	.101	.052	.020	.070	.037	.014	.041	.022	.008	.013	.007	.003		

C Range: 0 - 360DEG  
C Interval: 45.0DEG  
Test Speed: HIGH  
Temperature:25.3℃  
Operators:LIXIAOFEI  
Test Date:2023-10-17

γ Range: 0 - 90DEG  
γ Interval: 1.0DEG  
Test System:EVERFINE GO-2000H\_V1 SYSTEM V2.00.456  
Humidity:65.0%  
Test Distance:9.750m [K=1.0000]  
Remarks:

### UGR(Unified Glare Rating) Table

Test:U:230.40V I:0.0586A P:12.499W PF:0.9252 Freq:49.99Hz UTHDi:0.00% ITHDi:0.00% KDisp:0 Lamp Flux:1112.02x1 lm											
NameAA: PL1721-12W-DD						Type: 12W			Weight:		
SPEC.: 4000K						DIM.:			Instrument No.: HUP-IES2		
MFR.:						SUR.: 0.064			shielding angle:		
ceiling/cavity	0.7	0.7	0.5	0.5	0.3	0.7	0.7	0.5	0.5	0.3	
walls	0.5	0.3	0.5	0.3	0.3	0.5	0.3	0.5	0.3	0.3	
working 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		24.4	25.9	24.7	26.1	26.3	24.4	25.9	24.6	26.1	26.3
3H		25.9	27.3	26.2	27.5	27.8	25.8	27.2	26.1	27.5	27.7
4H		26.5	27.8	26.8	28.1	28.3	26.4	27.7	26.7	27.9	28.2
6H		26.9	28.1	27.2	28.4	28.7	26.7	27.9	27.0	28.2	28.5
8H		27.0	28.2	27.3	28.5	28.8	26.7	27.9	27.0	28.2	28.5
12H		27.0	28.2	27.4	28.5	28.8	26.7	27.9	27.0	28.2	28.5
4H 2H		25.0	26.3	25.3	26.6	26.9	25.0	26.3	25.3	26.6	26.8
3H		26.7	27.8	27.0	28.1	28.4	26.6	27.8	27.0	28.1	28.4
4H		27.4	28.4	27.7	28.8	29.1	27.3	28.3	27.6	28.6	29.0
6H		27.9	28.8	28.3	29.2	29.5	27.7	28.6	28.1	29.0	29.3
8H		28.0	28.9	28.4	29.3	29.7	27.8	28.6	28.2	29.0	29.4
12H		28.1	28.9	28.5	29.3	29.7	27.8	28.6	28.2	29.0	29.4
8H 4H		27.6	28.5	28.0	28.9	29.2	27.5	28.4	27.9	28.8	29.1
6H		28.2	29.0	28.7	29.4	29.8	28.0	28.8	28.5	29.2	29.6
8H		28.5	29.1	28.9	29.5	30.0	28.2	28.8	28.6	29.3	29.7
12H		28.6	29.2	29.1	29.6	30.1	28.2	28.8	28.7	29.2	29.7
12H 4H		27.6	28.4	28.0	28.8	29.2	27.5	28.3	27.9	28.7	29.1
6H		28.3	28.9	28.7	29.3	29.8	28.1	28.7	28.5	29.2	29.6
8H		28.5	29.1	29.0	29.5	30.0	28.3	28.8	28.7	29.3	29.7
Variations with the observer position at spacings(CIE Pub.117):											
S = 1.0H		+ 0.2 / - 0.2					+ 0.2 / - 0.2				
1.5H		+ 0.2 / - 0.3					+ 0.2 / - 0.3				
2.0H		+ 0.2 / - 0.3					+ 0.2 / - 0.3				

CIE Pub.117, 1112 lm Total Lamp Luminous Flux Corrected (8log(F/F0) = 0.4)  
Area: 0.0128 m2

C Range: 0 - 360DEG  
C Interval: 45.0DEG  
Test Speed: HIGH  
Temperature:25.3℃  
Operators:LIXIAOFEI  
Test Date:2023-10-17

γ Range: 0 - 90DEG  
γ Interval: 1.0DEG  
Test System:EVERFINE GO-2000H\_V1 SYSTEM V2.00.456  
Humidity:65.0%  
Test Distance:9.750m [K=1.0000]  
Remarks:

### UTILIZATION FACTORS TABLE

Test:U:230.40V I:0.0586A P:12.499W PF:0.9252 Freq:49.99Hz		
UTHDi:0.00% ITHDi:0.00% KDisp:0 Lamp Flux:1112.02x1 lm		
NameAA: PL1721-12W-DD	Type: 12W	Weight:
SPEC.: 4000K	DIM.:	Instrument No.: HUP-IES2
MFR.:	SUR.: 0.064	shielding angle:

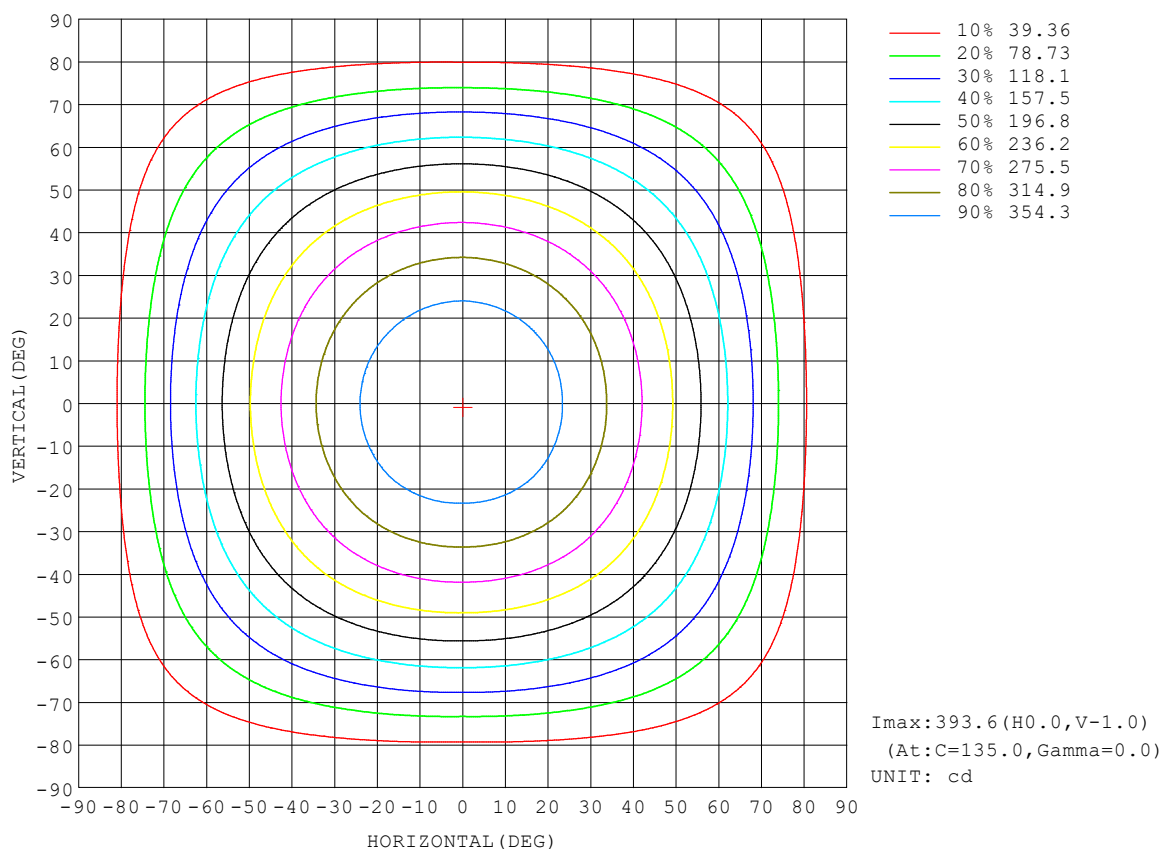
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	58	46	39	57	46	39	56	45	39	32
0.80	68	56	49	67	56	49	65	55	48	41
1.00	76	65	58	75	65	58	73	66	57	50
1.25	83	73	66	82	72	65	79	71	65	57
1.50	88	78	72	87	78	71	84	76	70	62
2.00	95	87	80	93	85	80	90	83	78	70
2.50	99	91	85	97	90	84	93	87	83	74
3.00	102	96	90	100	94	89	96	91	87	79
4.00	106	101	96	104	99	95	100	96	92	83
5.00	109	104	100	106	102	99	102	99	95	86
ROOM INDEX	UF (total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

C Range: 0 - 360DEG  
C Interval: 45.0DEG  
Test Speed: HIGH  
Temperature: 25.3°C  
Operators: LIXIAOFEI  
Test Date: 2023-10-17

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 1.0DEG  
Test System: EVERFINE GO-2000H\_V1 SYSTEM V2.00.456  
Humidity: 65.0%  
Test Distance: 9.750m [K=1.0000]  
Remarks:

## ISOCANDELA DIAGRAM

Test:U:230.40V I:0.0586A P:12.499W PF:0.9252 Freq:49.99Hz UTHDi:0.00% ITHDi:0.00% KDisp:0 Lamp Flux:1112.02x1 lm		
NameAA: PL1721-12W-DD	Type: 12W	Weight:
SPEC.: 4000K	DIM.:	Instrument No.: HUP-IES2
MFR.:	SUR.: 0.064	shielding angle:



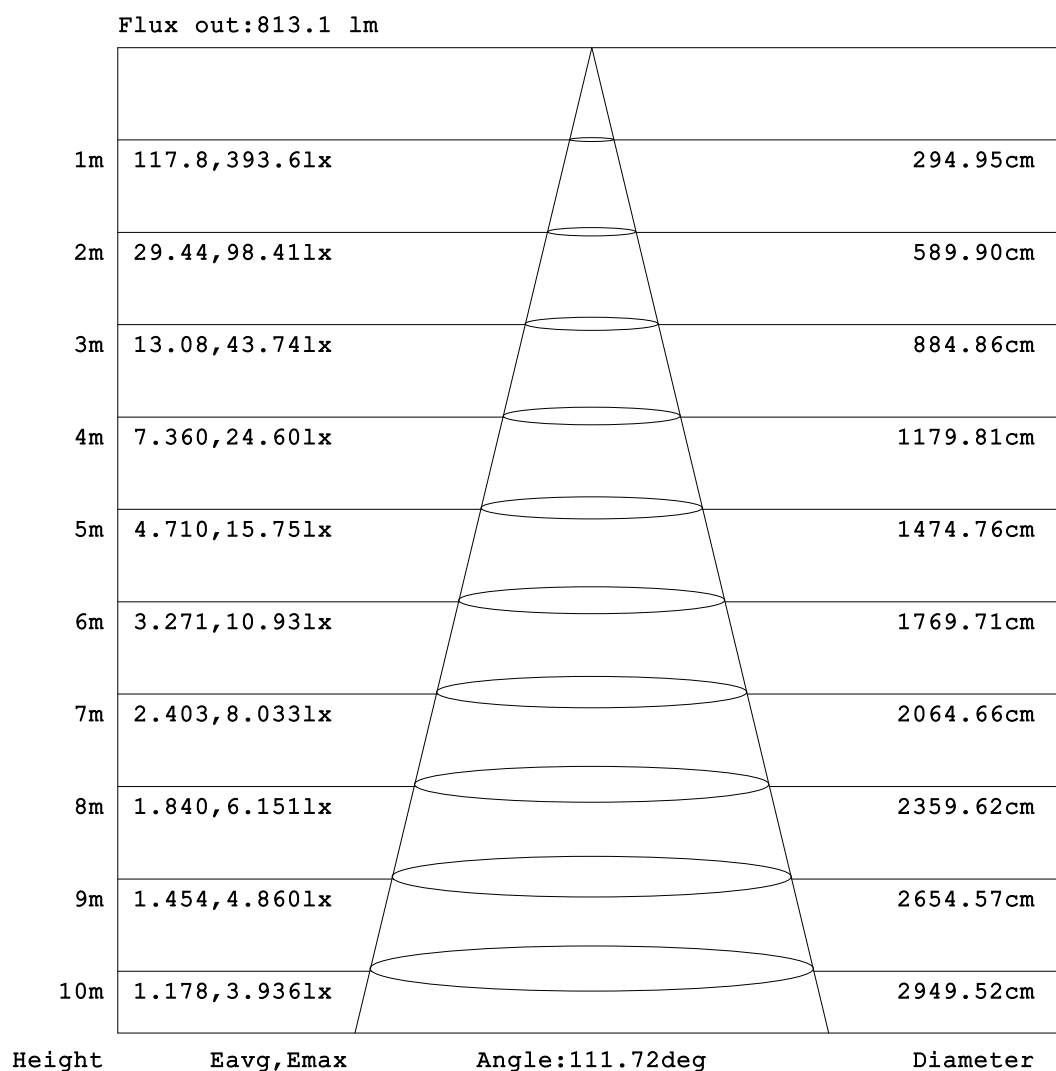
C Range: 0 - 360DEG  
C Interval: 45.0DEG  
Test Speed: HIGH  
Temperature:25.3℃  
Operators:LIXIAOFEI  
Test Date:2023-10-17

γ Range: 0 - 90DEG  
γ Interval: 1.0DEG  
Test System:EVERFINE GO-2000H\_V1 SYSTEM V2.00.456  
Humidity:65.0%  
Test Distance:9.750m [K=1.0000]  
Remarks:



**AAI Figure**

Test:U:230.40V I:0.0586A P:12.499W PF:0.9252 Freq:49.99Hz UTHDi:0.00% ITHDi:0.00% KDisp:0 Lamp Flux:1112.02x1 lm		
NameAA: PL1721-12W-DD	Type: 12W	Weight:
SPEC.: 4000K	DIM.:	Instrument No.: HUP-IES2
MFR.:	SUR.: 0.064	shielding angle:



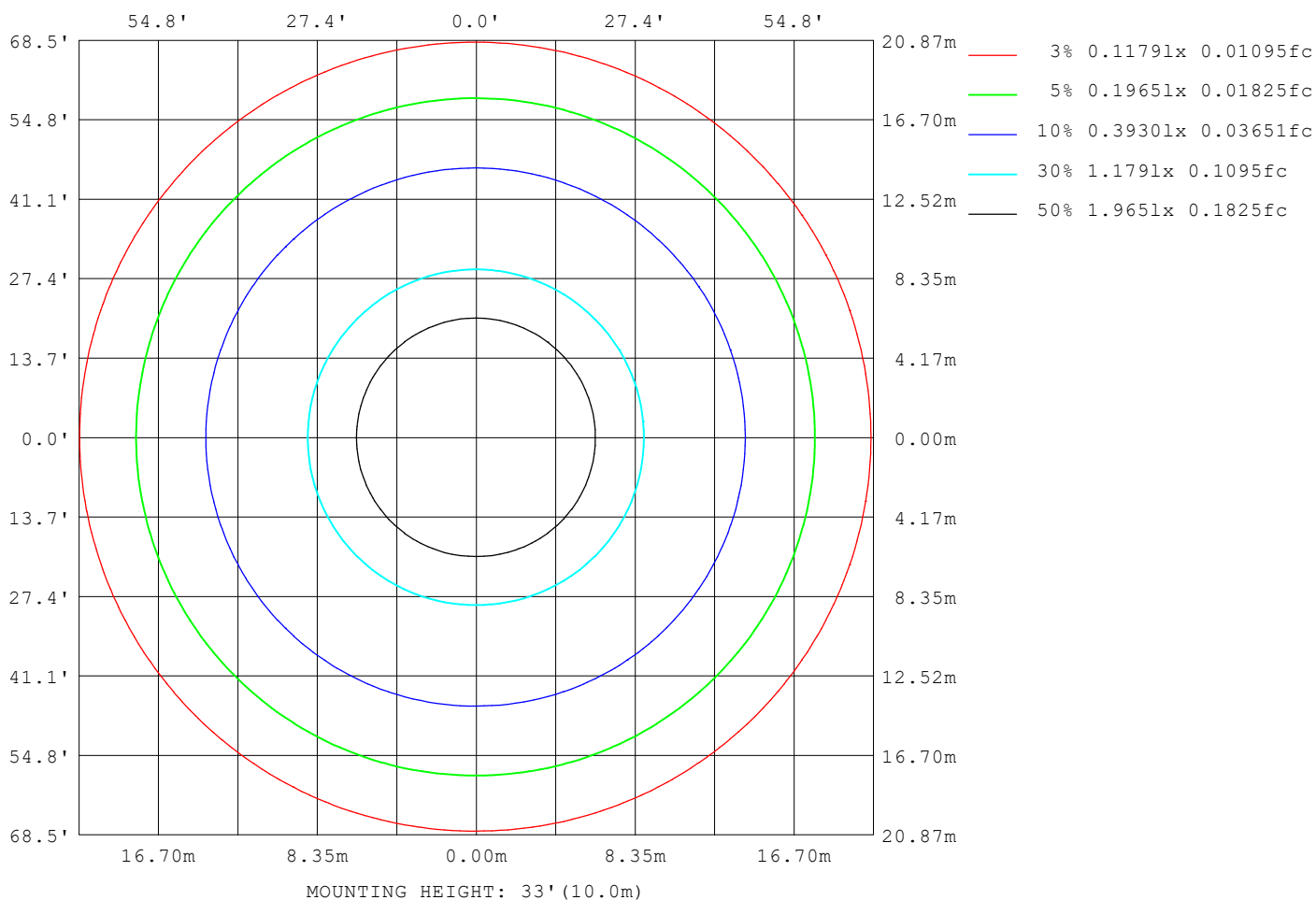
**Note:**The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature:25.3℃  
 Operators:LIXIAOFEI  
 Test Date:2023-10-17

γ Range: 0 - 90DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-2000H\_V1 SYSTEM V2.00.456  
 Humidity:65.0%  
 Test Distance:9.750m [K=1.0000]  
 Remarks:

### ISOLUX DIAGRAM

Test:U:230.40V I:0.0586A P:12.499W PF:0.9252 Freq:49.99Hz UTHDi:0.00% ITHDi:0.00% KDisp:0 Lamp Flux:1112.02x1 lm		
NameAA: PL1721-12W-DD	Type: 12W	Weight:
SPEC.: 4000K	DIM.:	Instrument No.: HUP-IES2
MFR.:	SUR.: 0.064	shielding angle:



C Range: 0 - 360DEG  
C Interval: 45.0DEG  
Test Speed: HIGH  
Temperature:25.3℃  
Operators:LIXIAOFEI  
Test Date:2023-10-17

γ Range: 0 - 90DEG  
γ Interval: 1.0DEG  
Test System:EVERFINE GO-2000H\_V1 SYSTEM V2.00.456  
Humidity:65.0%  
Test Distance:9.750m [K=1.0000]  
Remarks:

### LED Avg.L Report

Test:U:230.40V I:0.0586A P:12.499W PF:0.9252 Freq:49.99Hz UTHDi:0.00% ITHDi:0.00% KDisp:0 Lamp Flux:1112.02x1 lm		
NameAA: PL1721-12W-DD	Type: 12W	Weight:
SPEC.: 4000K	DIM.:	Instrument No.: HUP-IES2
MFR.:	SUR.: 0.064	shielding angle:

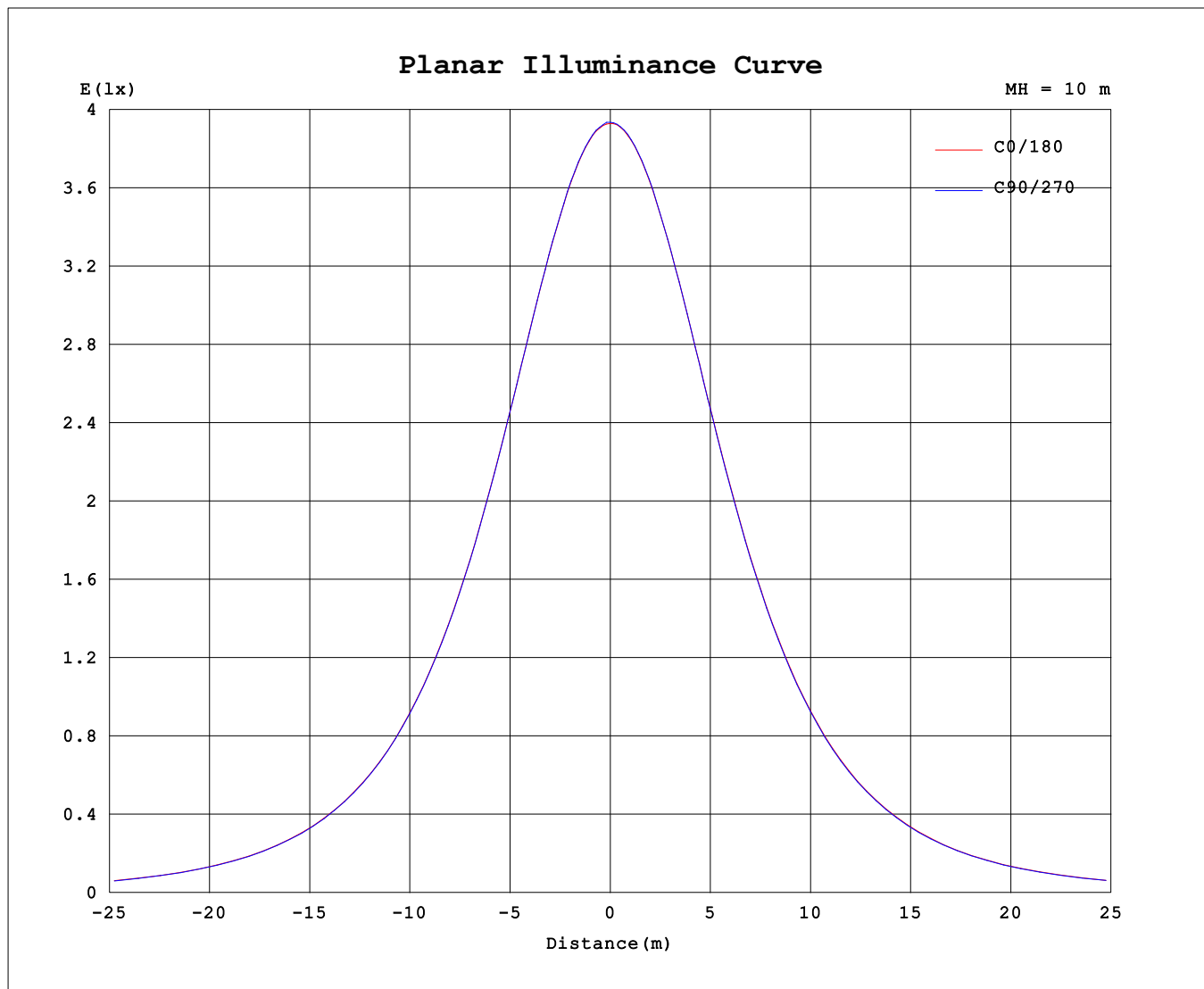
AvgL	cd/m2
L_0~180 (65) av	25891
L_0~180 (75) av	22308
L_0~180 (85) av	15927
L_90~270 (65) av	25572
L_90~270 (75) av	20912
L_90~270 (85) av	8062
L_45 (65) av	25752
L_45 (75) av	21942
L_45 (85) av	11061

Standard: GB/T 29293-2012

C Range: 0 - 360DEG  
C Interval: 45.0DEG  
Test Speed: HIGH  
Temperature:25.3℃  
Operators:LIXIAOFEI  
Test Date:2023-10-17

γ Range: 0 - 90DEG  
γ Interval: 1.0DEG  
Test System:EVERFINE GO-2000H\_V1 SYSTEM V2.00.456  
Humidity:65.0%  
Test Distance:9.750m [K=1.0000]  
Remarks:

### Planar Illuminance Curve



C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3°C  
 Operators: LIXIAOFEI  
 Test Date: 2023-10-17

γ Range: 0 - 90DEG  
 γ Interval: 1.0DEG  
 Test System: EVERFINE GO-2000H\_V1 SYSTEM V2.00.456  
 Humidity: 65.0%  
 Test Distance: 9.750m [K=1.0000]  
 Remarks:

<b>Test:</b> U:230.40V I:0.0586A P:12.499W PF:0.9252 Freq:49.99Hz <b>UTHDi:</b> 0.00% <b>ITHDi:</b> 0.00% <b>KDisp:</b> 0 <b>Lamp Flux:</b> 1112.02x1 lm		
<b>NameAA:</b> PL1721-12W-DD	<b>Type:</b> 12W	<b>Weight:</b>
<b>SPEC.:</b> 4000K	<b>DIM.:</b>	<b>Instrument No.:</b> HUP-IES2
<b>MFR.:</b>	<b>SUR.:</b> 0.064	<b>shielding angle:</b>

UNIT: cd

[illegible]

```

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000H_V1 SYSTEM V2.00.456
Humidity:65.0%
Test Distance:9.750m [K=1.0000]
Remarks:

```