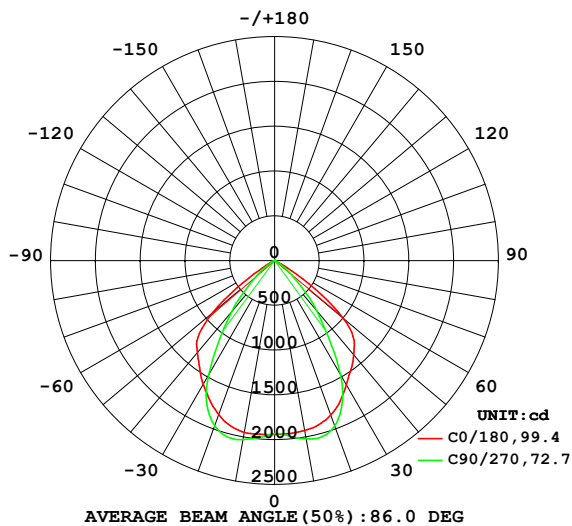


LUMINAIRE PHOTOMETRIC TEST REPORT

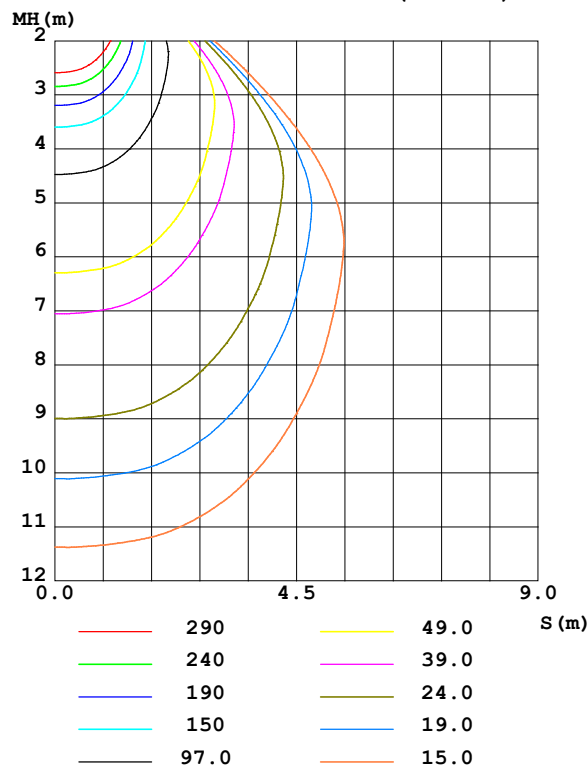
Test:U:240.41V I:0.1186A P:27.476W PF:0.9633 Freq:49.99Hz UTHDi:0.00% ITHDi:0.00% KDisp:0 Lamp Flux:3508.09x1 lm		
NameAA: LT28W-60SQ	Type: 28W	Weight:
SPEC.: 4000K	DIM.:	Instrument No.: HUP-IES2
MFR.:	SUR.: 0.565*0.26	shielding angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 127.68 lm/W			
MODEL	LT28W-60SQ	Imax (cd)	2047	S/MH(C0/180)	1.22
NOMINAL POWER(W)	28	LOR(%)	100.0	S/MH(C90/270)	1.05
RATED VOLTAGE(V)	240	TOTAL FLUX(lm)	3508.1	η UP,DN(C0-180)	0.0,50.1
NOMINAL FLUX(lm)	3508.09	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,49.9
LAMPS INSIDE	1	η up (%)	0.0	CIBSE SHR NOM	1.25
TEST VOLTAGE(V)	240	η down (%)	100.0	CIBSE SHR MAX	1.25

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25.3℃
Operators:Weizhizheng
Test Date:2024-05-29

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
Test System:EVERFINE GO-2000H_V1 SYSTEM V2.00.456
Humidity:65.0%
Test Distance:9.650m [K=1.0000]
Remarks:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum, lamp
10	1950	2012	2028	1990	1927	1991	2019	1994	0- 10	187.8	187.8	5.35,5.35
20	1828	2015	1963	1995	1836	2006	1963	2004	10- 20	563.3	751.1	21.4,21.4
30	1596	1741	1474	1762	1602	1767	1472	1751	20- 30	843.0	1594	45.4,45.4
40	1344	1185	755.6	1220	1375	1200	738.5	1187	30- 40	881.4	2476	70.6,70.6
50	902.1	521.9	253.7	572.1	997.7	543.3	252.0	515.5	40- 50	696.8	3172	90.4,90.4
60	114.2	88.07	38.40	103.8	168.2	96.87	39.67	86.16	50- 60	299.6	3472	99,99
70	5.344	3.496	1.989	4.973	5.481	5.031	1.904	3.746	60- 70	33.17	3505	99.9,99.9
80	2.956	0.7323	0.4930	0.7841	3.111	0.7388	0.4538	0.7119	70- 80	2.260	3507	100,100
90	0.0907	0.0843	0.0778	0.1037	0.4995	0.3305	0.1879	0.2916	80- 90	0.7270	3508	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): 2863 lm

%lum = 81.6%

%lamp = 81.6%

Conical surface Flux(120deg): 3471.9 lm

%lum = 99.0%

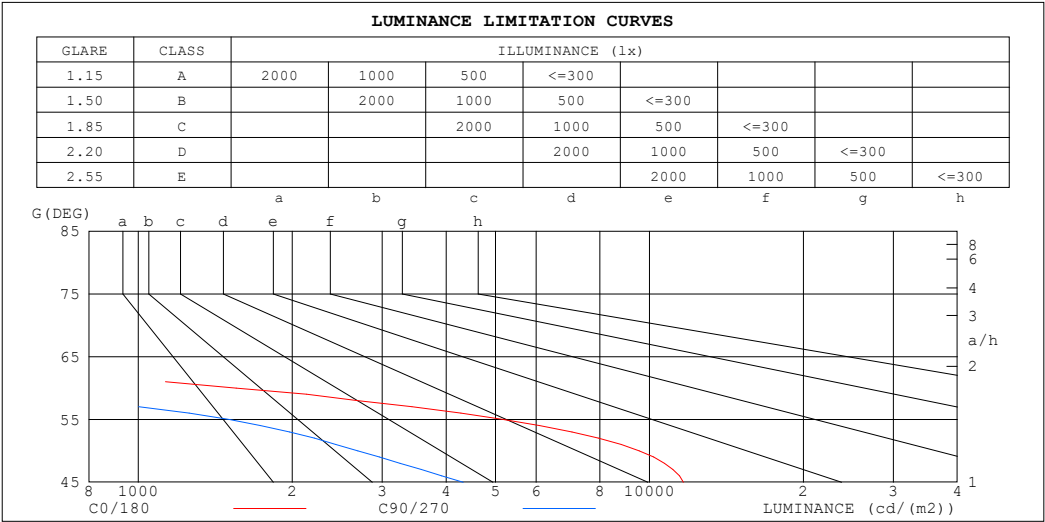
%lamp = 99.0%

C Range: 0 - 360DEG
 C Interval: 22.5DEG
 Test Speed: HIGH
 Temperature:25.3℃
 Operators:Weizhizheng
 Test Date:2024-05-29

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000H_V1 SYSTEM V2.00.456
 Humidity:65.0%
 Test Distance:9.650m [K=1.0000]
 Remarks:

LUMINANCE LIMITATION CURVES

Test:U:240.41V I:0.1186A P:27.476W PF:0.9633 Freq:49.99Hz		
UTHDi:0.00% ITHDi:0.00% KDisp:0 Lamp Flux:3508.09x1 lm		
NameAA: LT28W-60SQ	Type: 28W	Weight:
SPEC.: 4000K	DIM.:	Instrument No.: HUP-IES2
MFR.:	SUR.: 0.565*0.26	shielding angle:



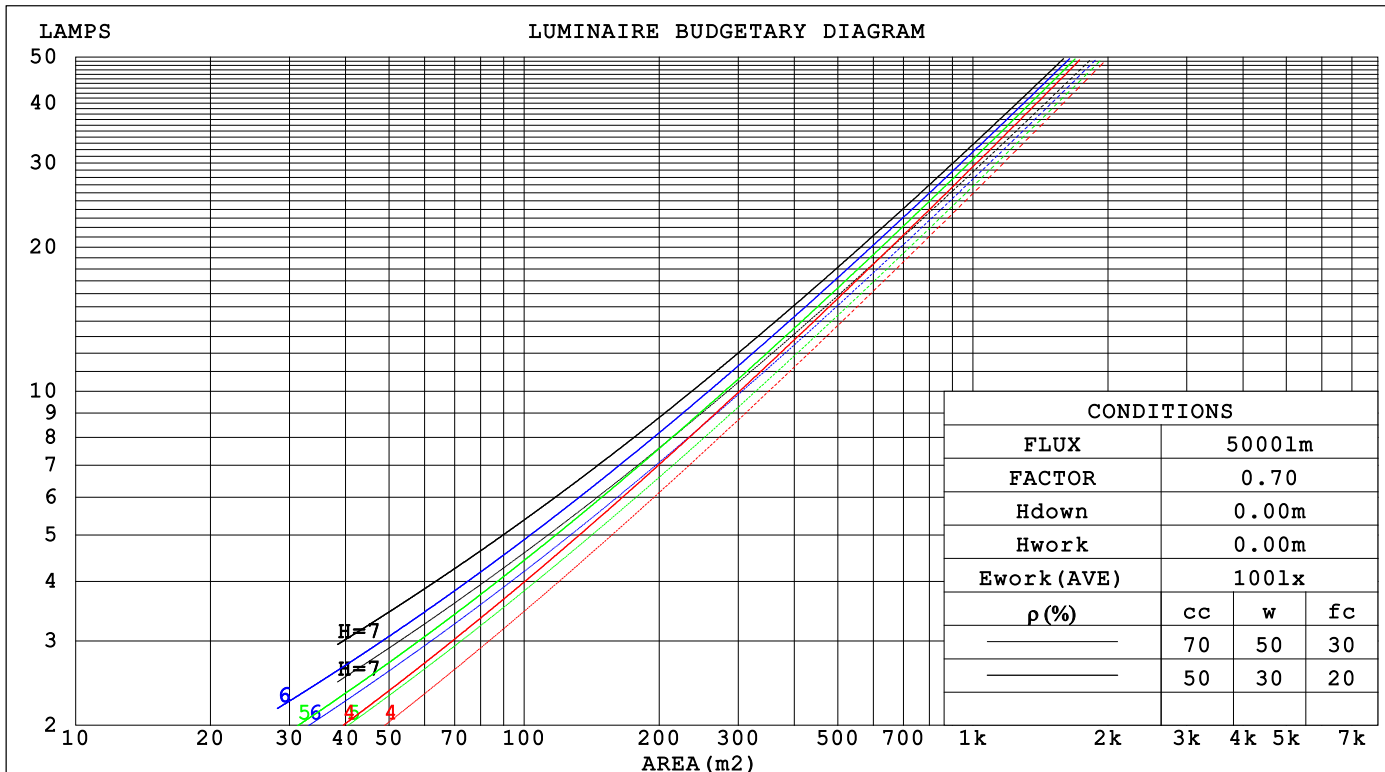
LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	109	20
80	116	19
75	108	23
70	106	40
65	146	92
60	1555	523
55	5184	1507
50	9554	2687
45	11655	4322

C Range: 0 - 360DEG	γ Range: 0 - 90DEG
C Interval: 22.5DEG	γ Interval: 1.0DEG
Test Speed: HIGH	Test System:EVERFINE GO-2000H_V1 SYSTEM V2.00.456
Temperature:25.3℃	Humidity:65.0%
Operators:Weizhizheng	Test Distance:9.650m [K=1.0000]
Test Date:2024-05-29	Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:240.41V I:0.1186A P:27.476W PF:0.9633 Freq:49.99Hz		
UTHDi:0.00% ITHDi:0.00% KDisp:0 Lamp Flux:3508.09x1 lm		
NameAA: LT28W-60SQ	Type: 28W	Weight:
SPEC.: 4000K	DIM.:	Instrument No.: HUP-IES2
MFR.:	SUR.: 0.565*0.26	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	1.09	1.06	1.03	1.07	1.04	1.02	1.03	1.01	.99	.99	.97	.96	.95	.94	.93	.91														
2.0	.99	.94	.90	.97	.93	.89	.94	.90	.87	.91	.88	.85	.88	.86	.84	.82														
3.0	.90	.84	.79	.89	.83	.79	.86	.81	.77	.84	.80	.76	.81	.78	.75	.73														
4.0	.82	.76	.70	.81	.75	.70	.79	.73	.69	.77	.72	.68	.75	.71	.67	.66														
5.0	.75	.68	.63	.74	.68	.63	.72	.66	.62	.71	.65	.61	.69	.64	.61	.59														
6.0	.69	.62	.57	.68	.61	.56	.67	.60	.56	.65	.60	.55	.64	.59	.55	.53														
7.0	.64	.56	.51	.63	.56	.51	.61	.55	.51	.60	.54	.50	.59	.54	.50	.48														
8.0	.59	.51	.46	.58	.51	.46	.57	.51	.46	.56	.50	.46	.55	.49	.46	.44														
9.0	.54	.47	.42	.54	.47	.42	.53	.47	.42	.52	.46	.42	.51	.46	.42	.40														
10.0	.50	.44	.39	.50	.43	.39	.49	.43	.39	.48	.43	.39	.47	.42	.38	.37														



C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25.3℃
Operators:Weizhizheng
Test Date:2024-05-29

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000H_V1 SYSTEM V2.00.456
Humidity:65.0%
Test Distance:9.650m [K=1.0000]
Remarks:

WEC AND CCEC

Test:U:240.41V I:0.1186A P:27.476W PF:0.9633 Freq:49.99Hz		
UTHDi:0.00% ITHDi:0.00% KDisp:0 Lamp Flux:3508.09x1 lm		
NameAA: LT28W-60SQ	Type: 28W	Weight:
SPEC.: 4000K	DIM.:	Instrument No.: HUP-IES2
MFR.:	SUR.: 0.565*0.26	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	.211	.120	.038	.204	.116	.037	.191	.110	.035	.180	.104	.033	.169	.098	.032		
2.0	.207	.114	.035	.201	.111	.034	.190	.106	.033	.180	.101	.032	.171	.097	.030		
3.0	.200	.106	.032	.195	.104	.031	.185	.100	.030	.176	.097	.030	.168	.093	.029		
4.0	.191	.099	.029	.186	.098	.029	.178	.094	.028	.170	.091	.028	.163	.089	.027		
5.0	.182	.093	.027	.178	.091	.027	.171	.089	.026	.164	.086	.026	.157	.084	.025		
6.0	.173	.087	.025	.170	.086	.025	.163	.084	.024	.157	.082	.024	.151	.080	.024		
7.0	.165	.081	.023	.162	.081	.023	.156	.079	.023	.150	.077	.022	.145	.075	.022		
8.0	.157	.077	.022	.154	.076	.021	.149	.074	.021	.144	.073	.021	.139	.071	.021		
9.0	.149	.072	.020	.147	.072	.020	.142	.070	.020	.138	.069	.020	.133	.068	.020		
10.0	.142	.068	.019	.140	.068	.019	.136	.067	.019	.132	.065	.019	.128	.064	.018		

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	.173	.157	.142	.148	.135	.122	.102	.093	.085	.058	.054	.049	.019	.017	.016		
2.0	.161	.132	.108	.138	.114	.094	.094	.079	.065	.054	.046	.038	.017	.015	.012		
3.0	.151	.114	.084	.129	.098	.073	.089	.068	.051	.051	.040	.030	.016	.013	.010		
4.0	.142	.100	.067	.122	.086	.058	.084	.060	.041	.049	.035	.024	.016	.011	.008		
5.0	.135	.089	.054	.116	.077	.047	.080	.054	.033	.046	.031	.020	.015	.010	.007		
6.0	.129	.080	.045	.110	.069	.039	.076	.048	.028	.044	.028	.016	.014	.009	.005		
7.0	.123	.073	.038	.105	.063	.033	.073	.044	.023	.042	.026	.014	.014	.009	.005		
8.0	.117	.067	.032	.101	.058	.028	.070	.041	.020	.041	.024	.012	.013	.008	.004		
9.0	.112	.062	.028	.096	.054	.025	.067	.038	.017	.039	.022	.010	.013	.007	.003		
10.0	.107	.058	.025	.092	.050	.022	.064	.035	.015	.037	.021	.009	.012	.007	.003		

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25.3℃
Operators:Weizhizheng
Test Date:2024-05-29

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000H_V1 SYSTEM V2.00.456
Humidity:65.0%
Test Distance:9.650m [K=1.0000]
Remarks:

UGR(Unified Glare Rating) Table

Test:U:240.41V I:0.1186A P:27.476W PF:0.9633 Freq:49.99Hz UTHDi:0.00% ITHDi:0.00% KDisp:0 Lamp Flux:3508.09x1 lm											
NameAA: LT28W-60SQ						Type: 28W		Weight:			
SPEC.: 4000K						DIM.:		Instrument No.: HUP-IES2			
MFR.:						SUR.: 0.565*0.26		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	2H	19.1	20.3	19.4	20.5	20.7	14.4	15.6	14.6	15.8	15.9
	3H	18.9	20.0	19.2	20.2	20.4	14.2	15.3	14.5	15.5	15.7
	4H	18.8	19.9	19.1	20.1	20.3	14.1	15.1	14.4	15.3	15.6
	6H	18.7	19.7	19.0	19.9	20.2	14.0	15.0	14.3	15.2	15.5
	8H	18.7	19.6	19.0	19.9	20.1	13.9	14.9	14.3	15.1	15.4
	12H	18.6	19.5	19.0	19.8	20.1	13.9	14.8	14.2	15.1	15.3
4H	2H	18.9	19.9	19.1	20.1	20.4	14.4	15.4	14.7	15.7	15.9
	3H	18.7	19.5	19.0	19.8	20.1	14.2	15.1	14.5	15.4	15.6
	4H	18.6	19.4	18.9	19.7	20.0	14.1	14.9	14.5	15.2	15.5
	6H	18.5	19.2	18.9	19.5	19.9	14.0	14.7	14.4	15.0	15.4
	8H	18.4	19.1	18.8	19.4	19.8	14.0	14.6	14.4	15.0	15.3
	12H	18.4	19.0	18.8	19.3	19.7	13.9	14.5	14.3	14.9	15.3
8H	4H	18.4	19.1	18.8	19.4	19.8	14.0	14.6	14.4	15.0	15.3
	6H	18.3	18.9	18.8	19.3	19.7	13.9	14.4	14.3	14.8	15.2
	8H	18.3	18.8	18.7	19.2	19.6	13.8	14.3	14.3	14.7	15.2
	12H	18.3	18.6	18.7	19.1	19.6	13.8	14.2	14.3	14.6	15.1
12H	4H	18.4	19.0	18.8	19.3	19.7	13.9	14.5	14.3	14.9	15.3
	6H	18.3	18.8	18.7	19.2	19.6	13.8	14.3	14.3	14.7	15.2
	8H	18.3	18.6	18.7	19.1	19.6	13.8	14.2	14.3	14.6	15.1
Variations with the observer position at spacings(CIE Pub.117):											
S = 1.0H		+ 2.1 / - 4.3					+ 2.6 / - 9.1				
1.5H		+ 1.6 / - 3.0					+ 2.5 / - 5.6				
2.0H		+ 4.4 / -13.7					+ 4.6 / - 9.4				

CIE Pub.117, 3508 lm Total Lamp Luminous Flux Corrected ($8\log(F/F_0) = 4.4$)
Area: 0.1469 m²

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25.3℃
Operators:Weizhizheng
Test Date:2024-05-29

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
Test System:EVERFINE GO-2000H_V1 SYSTEM V2.00.456
Humidity:65.0%
Test Distance:9.650m [K=1.0000]
Remarks:

UTILIZATION FACTORS TABLE

Test:U:240.41V I:0.1186A P:27.476W PF:0.9633 Freq:49.99Hz		
UTHDi:0.00% ITHDi:0.00% KDisp:0 Lamp Flux:3508.09x1 lm		
NameAA: LT28W-60SQ	Type: 28W	Weight:
SPEC.: 4000K	DIM.:	Instrument No.: HUP-IES2
MFR.:	SUR.: 0.565*0.26	shielding angle:

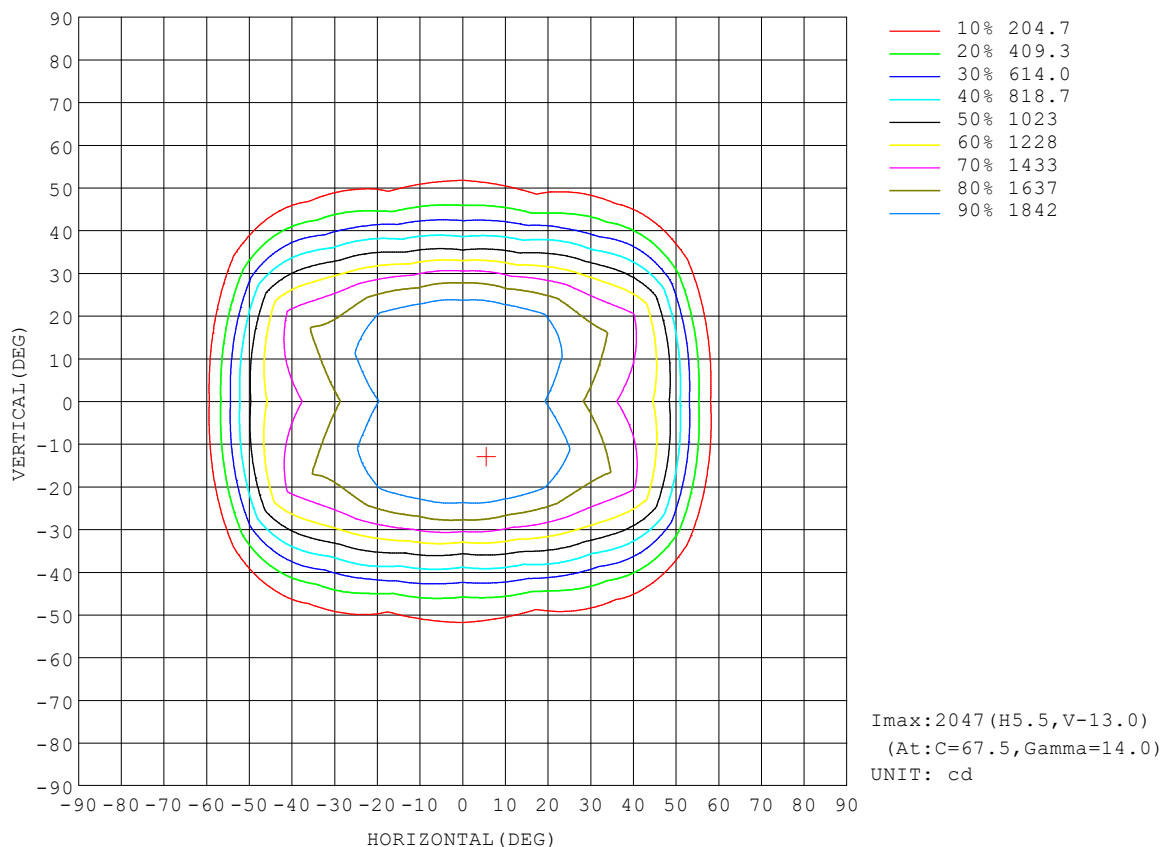
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	72	63	58	72	63	58	71	63	58	53
0.80	82	74	68	81	73	68	80	73	68	63
1.00	90	82	77	89	82	77	87	82	76	71
1.25	96	89	84	95	88	84	93	87	83	78
1.50	100	93	89	98	93	88	96	91	87	82
2.00	104	99	95	103	98	94	100	96	93	87
2.50	107	102	98	105	100	97	102	98	95	88
3.00	109	104	101	107	103	100	103	100	98	91
4.00	111	108	105	109	106	103	105	103	100	93
5.00	113	109	107	110	108	105	106	104	102	94
ROOM INDEX	UF (total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature: 25.3°C
Operators: Weizhizheng
Test Date: 2024-05-29

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System: EVERFINE GO-2000H_V1 SYSTEM V2.00.456
Humidity: 65.0%
Test Distance: 9.650m [K=1.0000]
Remarks:

ISOCANDELA DIAGRAM

Test:U:240.41V I:0.1186A P:27.476W PF:0.9633 Freq:49.99Hz UTHDi:0.00% ITHDi:0.00% KDisp:0 Lamp Flux:3508.09x1 lm		
NameAA: LT28W-60SQ	Type: 28W	Weight:
SPEC.: 4000K	DIM.:	Instrument No.: HUP-IES2
MFR.:	SUR.: 0.565*0.26	shielding angle:

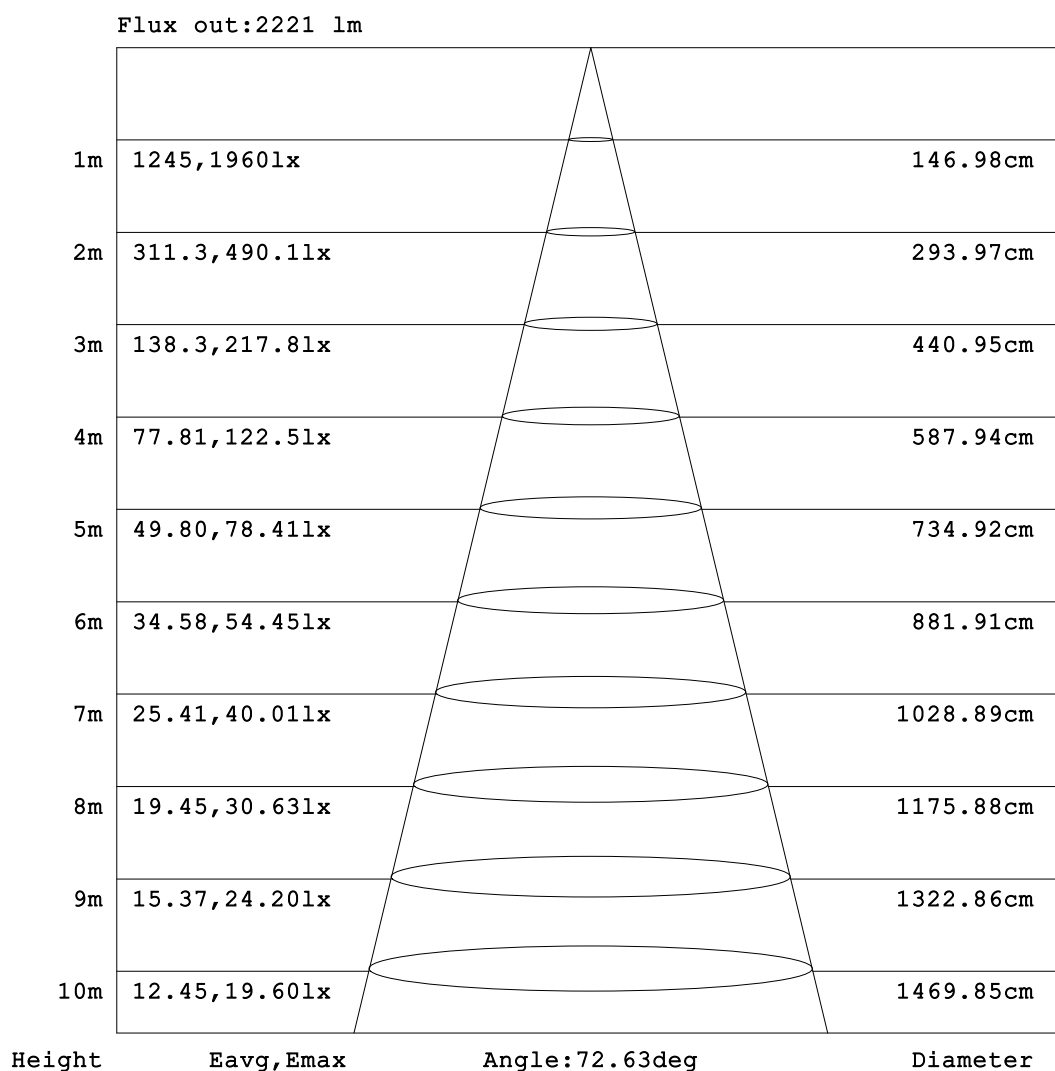


C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25.3℃
Operators:Weizhizheng
Test Date:2024-05-29

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000H_V1 SYSTEM V2.00.456
Humidity:65.0%
Test Distance:9.650m [K=1.0000]
Remarks:

AAI Figure

Test:U:240.41V I:0.1186A P:27.476W PF:0.9633 Freq:49.99Hz UTHDi:0.00% ITHDi:0.00% KDisp:0 Lamp Flux:3508.09x1 lm		
NameAA: LT28W-60SQ	Type: 28W	Weight:
SPEC.: 4000K	DIM.:	Instrument No.: HUP-IES2
MFR.:	SUR.: 0.565*0.26	shielding angle:



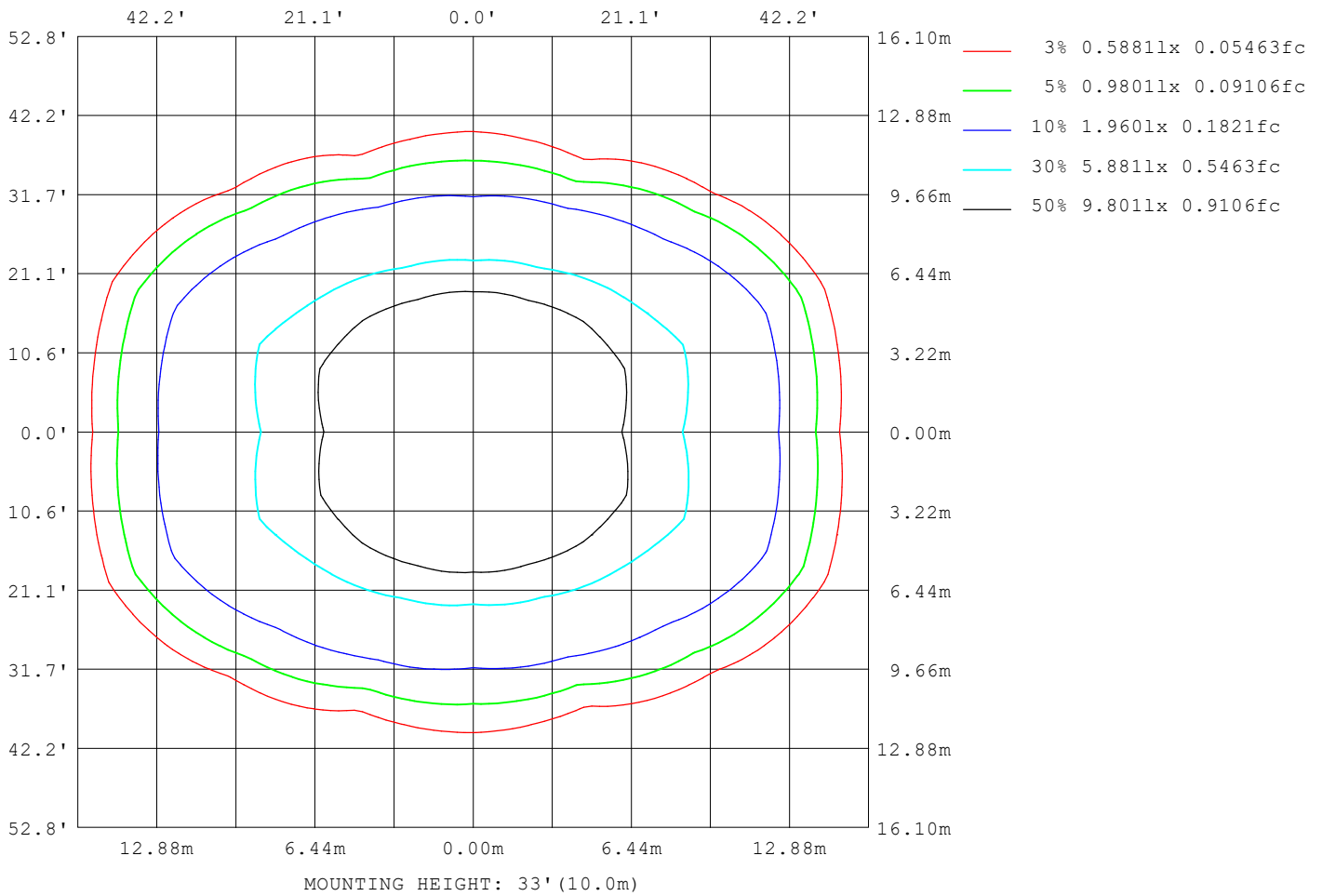
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature: 25.3°C
Operators: Weizhizheng
Test Date: 2024-05-29

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System: EVERFINE GO-2000H_V1 SYSTEM V2.00.456
Humidity: 65.0%
Test Distance: 9.650m [K=1.0000]
Remarks:

ISOLUX DIAGRAM

Test:U:240.41V I:0.1186A P:27.476W PF:0.9633 Freq:49.99Hz UTHDi:0.00% ITHDi:0.00% KDisp:0 Lamp Flux:3508.09x1 lm		
NameAA: LT28W-60SQ	Type: 28W	Weight:
SPEC.: 4000K	DIM.:	Instrument No.: HUP-IES2
MFR.:	SUR.: 0.565*0.26	shielding angle:



C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature: 25.3°C
Operators: Weizhizheng
Test Date: 2024-05-29

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System: EVERFINE GO-2000H_V1 SYSTEM V2.00.456
Humidity: 65.0%
Test Distance: 9.650m [K=1.0000]
Remarks:

LED Avg.L Report

Test:U:240.41V I:0.1186A P:27.476W PF:0.9633 Freq:49.99Hz UTHDi:0.00% ITHDi:0.00% KDisp:0 Lamp Flux:3508.09x1 lm		
NameAA: LT28W-60SQ	Type: 28W	Weight:
SPEC.: 4000K	DIM.:	Instrument No.: HUP-IES2
MFR.:	SUR.: 0.565*0.26	shielding angle:

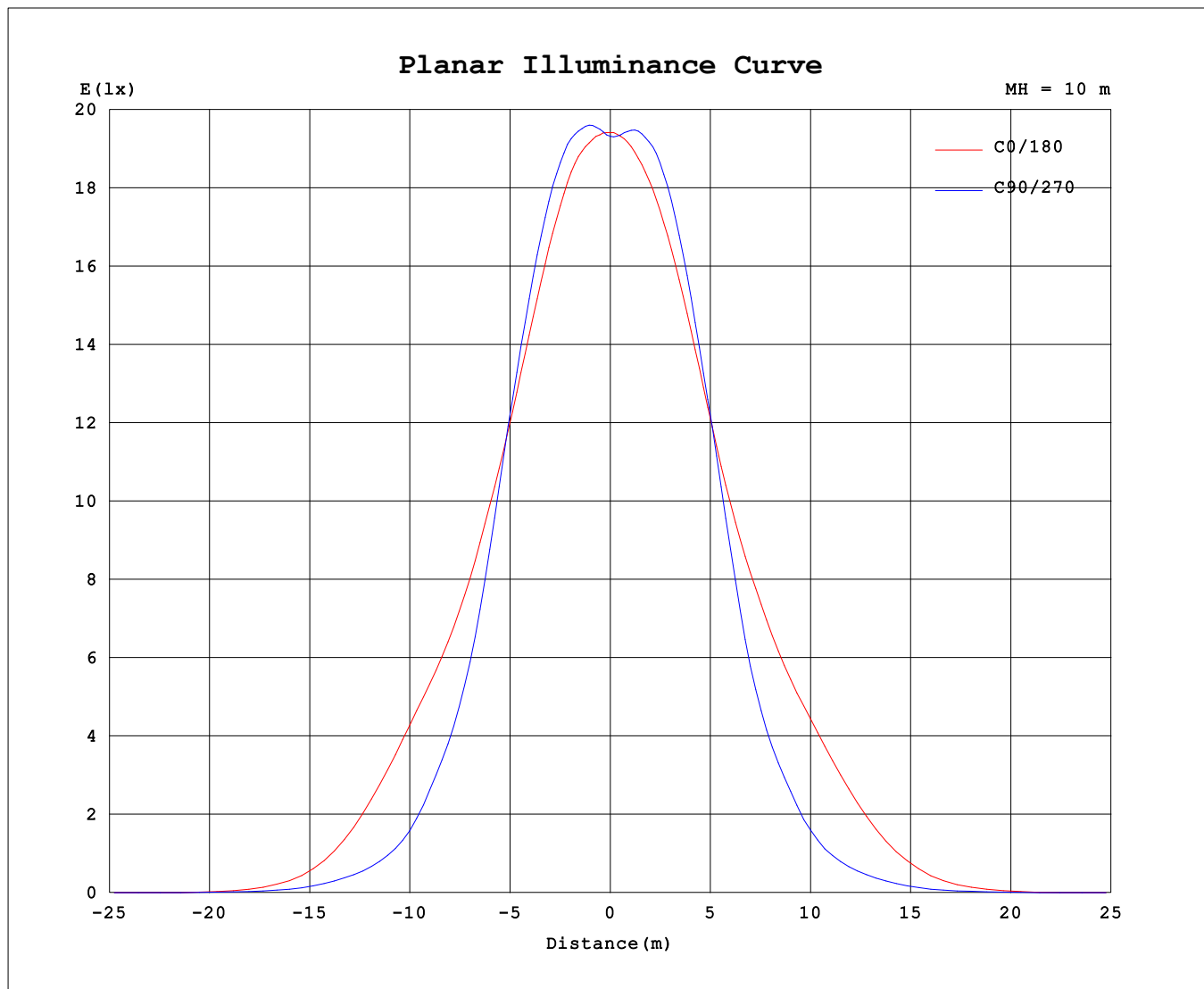
AvgL	cd/m2
L_0~180 (65) av	227
L_0~180 (75) av	109
L_0~180 (85) av	121
L_90~270 (65) av	95
L_90~270 (75) av	22
L_90~270 (85) av	19
L_45 (65) av	429
L_45 (75) av	35
L_45 (85) av	30

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25.3℃
Operators:Weizhizheng
Test Date:2024-05-29

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000H_V1 SYSTEM V2.00.456
Humidity:65.0%
Test Distance:9.650m [K=1.0000]
Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG
 C Interval: 22.5DEG
 Test Speed: HIGH
 Temperature: 25.3°C
 Operators: Weizhizheng
 Test Date: 2024-05-29

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE GO-2000H_V1 SYSTEM V2.00.456
 Humidity: 65.0%
 Test Distance: 9.650m [K=1.0000]
 Remarks:

Test:U:240.41V I:0.1186A P:27.476W PF:0.9633 Freq:49.99Hz UTHDi:0.00% ITHDi:0.00% KDisp:0 Lamp Flux:3508.09x1 lm		
NameAA: LT28W-60SQ	Type: 28W	Weight:
SPEC.: 4000K	DIM.:	Instrument No.: HUP-IES2
MFR.:	SUR.: 0.565*0.26	shielding angle:

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:9.650m [K=1.0000]
Remarks:

```