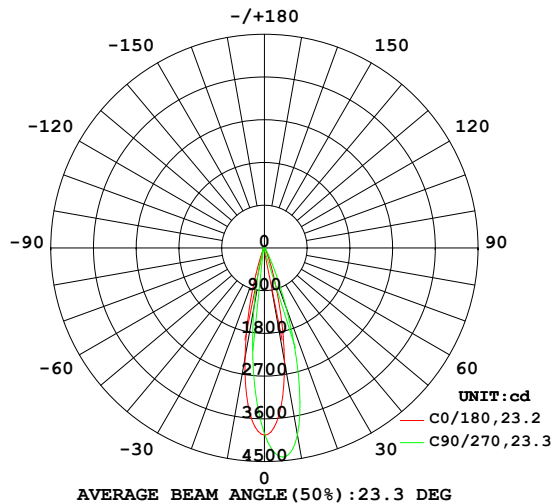


LUMINAIRE PHOTOMETRIC TEST REPORT

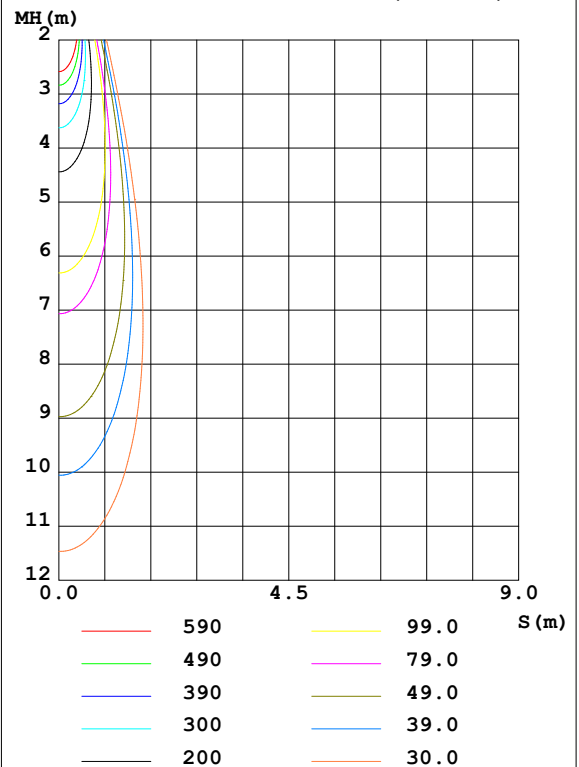
Test:U:231.32V I:0.0652A P:12.576W PF:0.8344 Freq:49.37Hz Lamp Flux:823.536x1 lm		
NAME: W21301LED-X	TYPE:	WEIGHT:
SPEC.:P-W21301LED-X-12W2724-CI35031R90-YML100	DIM.:	SERIAL No.:
MFR.: CETTIGA	SUR.:	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 65.48 lm/W			
MODEL	CLU701 1002	I _{max} (cd)	4422	S/MH (C0/180)	0.38
NOMINAL POWER (W)	12W	LOR (%)	100.0	S/MH (C90/270)	0.25
RATED VOLTAGE (V)	220.0	TOTAL FLUX (lm)	823.54	η UP, DN (C0-180)	0.2, 66.3
NOMINAL FLUX (lm)	823.536	CIE CLASS	DIRECT	η UP, DN (C180-360)	0.2, 33.4
LAMPS INSIDE	1	η up (%)	0.3	CIBSE SHR NOM	0.00
TEST VOLTAGE (V)	220.2	η down (%)	99.7	CIBSE SHR MAX	1.00

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: Xie Bi
 Test Date: 2022-11-28

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.362
 Humidity: 65.0%
 Test Distance: 6.810m [K=1.0000]
 Remarks:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

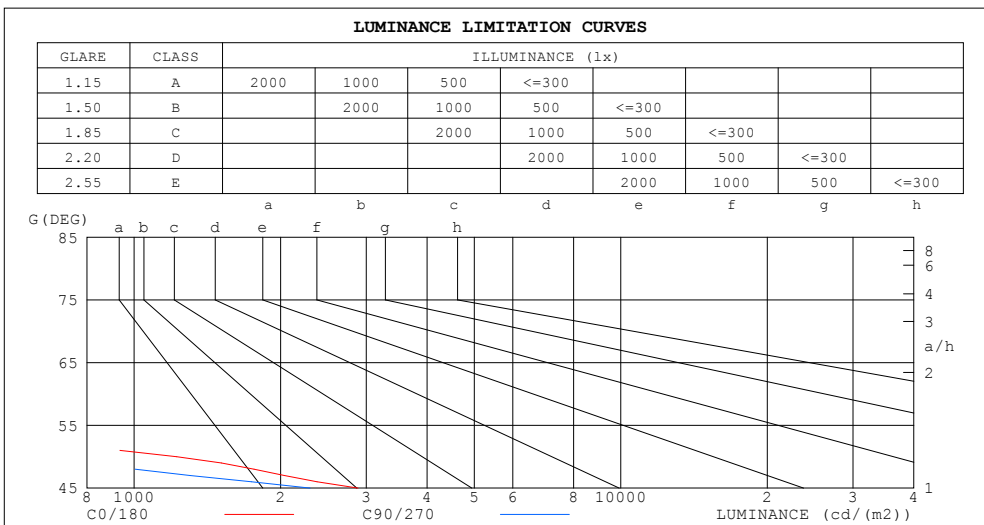
γ	C0	C90	C180	C270					γ	Φ zone	Φ total	%lum, lamp
10	2433	3999	2360	1263					0- 10	303.4	303.4	36.8,36.8
20	410.5	1347	364.8	160.8					10- 20	375.3	678.8	82.4,82.4
30	82.21	162.2	67.76	45.18					20- 30	109.6	788.3	95.7,95.7
40	19.09	23.63	13.16	8.231					30- 40	27.32	815.7	99,99
50	3.020	1.358	1.239	0.5357					40- 50	4.795	820.4	99.6,99.6
60	0.1346	0.0575	0.0662	0.0785					50- 60	0.4411	820.9	99.7,99.7
70	0.0209	0.0192	0.0139	0.0331					60- 70	0.0407	820.9	99.7,99.7
80	0.0070	0	0	0.0174					70- 80	0.0131	820.9	99.7,99.7
90	0	0	0	0.0018					80- 90	0.0033	820.9	99.7,99.7
100	0	0	0	0.0017					90-100	0.0020	820.9	99.7,99.7
110	0	0	0.0105	0.0017					100-110	0.0012	820.9	99.7,99.7
120	0.0087	0.0000	0.0366	0.0070					110-120	0.0065	821.0	99.7,99.7
130	0.0261	0.0436	0.0489	0.0436					120-130	0.0200	821.0	99.7,99.7
140	0.2021	0.1327	0.1362	0.2493					130-140	0.0698	821.0	99.7,99.7
150	1.247	0.5930	0.6125	1.370					140-150	0.2898	821.3	99.7,99.7
160	3.403	2.482	2.203	3.254					150-160	0.8277	822.2	99.8,99.8
170	4.332	4.356	3.615	3.627					160-170	0.9897	823.2	100,100
180	4.019	4.157	4.009	4.152					170-180	0.3836	823.5	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Xie Bi
Test Date:2022-11-28

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.362
Humidity:65.0%
Test Distance:6.810m [K=1.0000]
Remarks:

LUMINANCE LIMITATION CURVES

Test:U:231.32V I:0.0652A P:12.576W PF:0.8344 Freq:49.37Hz Lamp Flux:823.536x1 lm		
NAME: W21301LED-X	TYPE:	WEIGHT:
SPEC.:P-W21301LED-X-12W2724-CI35031R90-YML100	DIM.:	SERIAL No.:
MFR.: CETTIGA	SUR.:	Shielding Angle:



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	0	0
80	10	0
75	12	7
70	16	15
65	26	23
60	70	30
55	253	140
50	1224	550
45	2885	2299

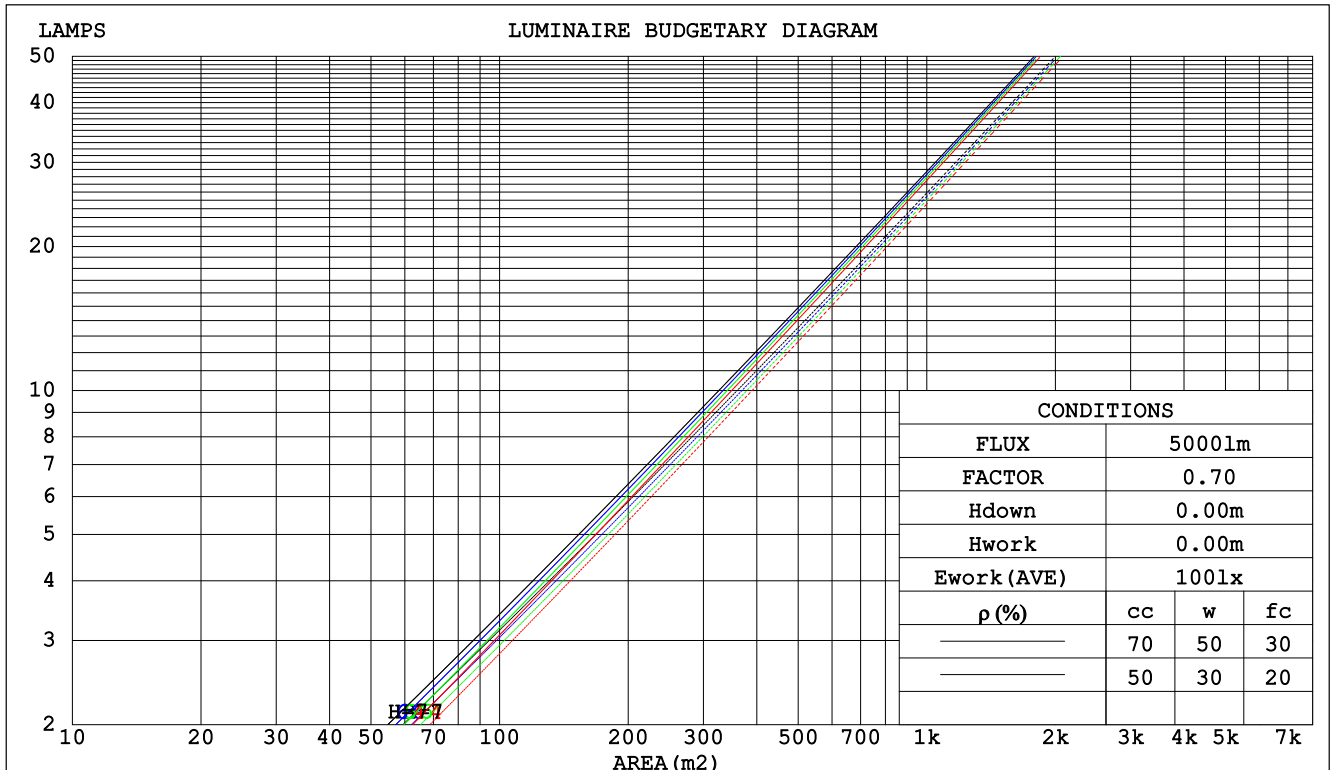
C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Xie Bi
Test Date:2022-11-28

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.362
Humidity:65.0%
Test Distance:6.810m [K=1.0000]
Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:231.32V I:0.0652A P:12.576W PF:0.8344 Freq:49.37Hz Lamp Flux:823.536x1 lm		
NAME: W21301LED-X	TYPE:	WEIGHT:
SPEC.:P-W21301LED-X-12W2724-CI35031R90-YML100	DIM.:	SERIAL No.:
MFR.: CETTIGA	SUR.:	Shielding Angle:

ρ_{cc}	80%			70%			50%			30%			10%			0
ρ_w	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρ_{fc}	20%			20%			20%			20%			20%			0
RCR	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	.00
1.0	1.13	1.11	1.09	1.11	1.09	1.08	1.07	1.06	1.04	1.03	1.02	1.01	.00	.99	.98	.97
2.0	1.08	1.05	1.02	1.06	1.04	1.01	1.03	1.01	.99	1.00	.98	.97	.97	.96	.95	.94
3.0	1.03	.00	.97	1.02	.99	.96	.00	.97	.95	.97	.95	.93	.95	.93	.92	.91
4.0	.00	.96	.93	.98	.95	.92	.96	.94	.91	.95	.92	.90	.93	.91	.89	.88
5.0	.96	.92	.89	.95	.91	.89	.94	.90	.88	.92	.89	.87	.91	.88	.86	.85
6.0	.93	.89	.86	.92	.88	.86	.91	.88	.85	.90	.87	.85	.88	.86	.84	.83
7.0	.90	.86	.83	.89	.86	.83	.88	.85	.83	.87	.84	.82	.86	.84	.82	.81
8.0	.87	.83	.81	.87	.83	.80	.86	.83	.80	.85	.82	.80	.84	.82	.80	.79
9.0	.85	.81	.78	.85	.81	.78	.84	.80	.78	.83	.80	.78	.82	.80	.77	.77
10.0	.83	.79	.76	.82	.79	.76	.82	.78	.76	.81	.78	.76	.80	.78	.76	.75



C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:Xie Bi
 Test Date:2022-11-28

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.362
 Humidity:65.0%
 Test Distance:6.810m [K=1.0000]
 Remarks:

WEC AND CCEC

Test:U:231.32V I:0.0652A P:12.576W PF:0.8344 Freq:49.37Hz Lamp Flux:823.536x1 lm		
NAME: W21301LED-X	TYPE:	WEIGHT:
SPEC.:P-W21301LED-X-12W2724-CI35031R90-YML100	DIM.:	SERIAL No.:
MFR.: CETTIGA	SUR.:	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	.134	.076	.024	.127	.073	.023	.115	.066	.021	.103	.059	.019	.092	.054	.017		
2.0	.124	.068	.021	.118	.065	.020	.108	.060	.019	.098	.055	.017	.090	.051	.016		
3.0	.115	.061	.018	.111	.059	.018	.102	.055	.017	.094	.051	.016	.087	.048	.015		
4.0	.108	.056	.016	.104	.054	.016	.097	.051	.015	.090	.048	.015	.084	.045	.014		
5.0	.102	.052	.015	.098	.050	.015	.092	.048	.014	.086	.046	.014	.081	.043	.013		
6.0	.096	.048	.014	.093	.047	.014	.088	.045	.013	.083	.043	.013	.078	.041	.012		
7.0	.091	.045	.013	.089	.044	.013	.084	.043	.012	.080	.041	.012	.076	.039	.012		
8.0	.087	.042	.012	.085	.042	.012	.081	.040	.012	.077	.039	.011	.073	.038	.011		
9.0	.083	.040	.011	.081	.040	.011	.078	.038	.011	.074	.037	.011	.071	.036	.010		
10.0	.080	.038	.011	.078	.038	.011	.075	.037	.010	.072	.036	.010	.069	.035	.010		

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	.193	.193	.193	.165	.165	.165	.113	.113	.113	.065	.065	.065	.021	.021	.021	
1.0	.171	.160	.151	.146	.137	.130	.100	.095	.090	.057	.055	.052	.018	.018	.017	
2.0	.152	.135	.121	.130	.116	.104	.089	.080	.073	.052	.047	.043	.017	.015	.014	
3.0	.137	.116	.099	.118	.100	.086	.081	.069	.060	.047	.040	.035	.015	.013	.012	
4.0	.124	.100	.082	.107	.087	.071	.073	.060	.050	.042	.035	.030	.014	.012	.010	
5.0	.114	.088	.069	.098	.076	.060	.067	.053	.042	.039	.031	.025	.013	.010	.008	
6.0	.105	.078	.059	.090	.067	.051	.062	.047	.036	.036	.028	.021	.012	.009	.007	
7.0	.097	.070	.050	.084	.060	.044	.058	.042	.031	.034	.025	.019	.011	.008	.006	
8.0	.091	.063	.044	.078	.055	.038	.054	.038	.027	.031	.023	.016	.010	.007	.005	
9.0	.085	.057	.038	.073	.050	.034	.051	.035	.024	.030	.021	.014	.010	.007	.005	
10.0	.080	.052	.034	.069	.046	.030	.048	.032	.021	.028	.019	.013	.009	.006	.004	

C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Xie Bi
Test Date:2022-11-28

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.362
Humidity:65.0%
Test Distance:6.810m [K=1.0000]
Remarks:

UGR(Unified Glare Rating) Table

Test:U:231.32V I:0.0652A P:12.576W PF:0.8344 Freq:49.37Hz Lamp Flux:823.536x1 lm											
NAME: W21301LED-X						TYPE:			WEIGHT:		
SPEC.:P-W21301LED-X-12W2724-CI35031R90-YML100						DIM.:			SERIAL No.:		
MFR.: CETTIGA						SUR.:			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		7.6	8.3	7.8	8.4	8.6	9.5	10.2	9.7	10.3	10.5
3H		7.5	8.1	7.7	8.3	8.4	9.4	10.0	9.6	10.2	10.4
4H		7.4	8.0	7.7	8.2	8.4	9.3	9.9	9.6	10.1	10.3
6H		7.3	7.8	7.6	8.1	8.3	9.2	9.8	9.5	10.0	10.2
8H		7.3	7.8	7.6	8.0	8.3	9.2	9.7	9.5	9.9	10.2
12H		7.2	7.7	7.5	8.0	8.3	9.1	9.6	9.5	9.9	10.2
4H	2H	7.4	8.0	7.7	8.2	8.4	9.3	9.9	9.6	10.1	10.3
	3H	7.2	7.7	7.5	8.0	8.3	9.1	9.6	9.5	9.9	10.2
	4H	7.1	7.6	7.5	7.9	8.2	9.0	9.5	9.4	9.8	10.1
	6H	7.0	7.4	7.4	7.8	8.1	8.9	9.3	9.3	9.7	10.0
	8H	7.0	7.3	7.4	7.7	8.1	8.9	9.3	9.3	9.6	10.0
	12H	6.9	7.3	7.3	7.6	8.0	8.8	9.2	9.2	9.5	9.9
8H	4H	7.0	7.3	7.4	7.7	8.1	8.9	9.3	9.3	9.6	10.0
	6H	6.9	7.2	7.3	7.6	8.0	8.8	9.1	9.2	9.5	9.9
	8H	6.8	7.1	7.2	7.5	7.9	8.7	9.0	9.2	9.4	9.8
	12H	6.7	7.0	7.2	7.4	7.9	8.6	8.9	9.1	9.3	9.8
12H	4H	6.9	7.3	7.3	7.6	8.0	8.8	9.2	9.2	9.5	9.9
	6H	6.8	7.1	7.2	7.5	7.9	8.7	9.0	9.2	9.4	9.8
	8H	6.7	7.0	7.2	7.4	7.9	8.6	8.9	9.1	9.3	9.8
Variations with the observer position at spacings:											
S = 1.0H		+ 3.3 / -22.9					+ 4.3 / -27.0				
1.5H		+ 5.7 / -18.2					+ 6.9 / -20.9				
2.0H		+ 7.7 / -21.8					+ 7.8 / -20.6				

CIE Pub.117, 823.5 lm Total Lamp Luminous Flux Correct (8log(F/F0) = -0.7)
Area: 0.00384 m2

C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Xie Bi
Test Date:2022-11-28

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.362
Humidity:65.0%
Test Distance:6.810m [K=1.0000]
Remarks:

UTILIZATION FACTORS TABLE

Test:U:231.32V I:0.0652A P:12.576W PF:0.8344 Freq:49.37Hz Lamp Flux:823.536x1 lm		
NAME: W21301LED-X	TYPE:	WEIGHT:
SPEC.:P-W21301LED-X-12W2724-CI35031R90-YML100	DIM.:	SERIAL No.:
MFR.: CETTIGA	SUR.:	Shielding Angle:

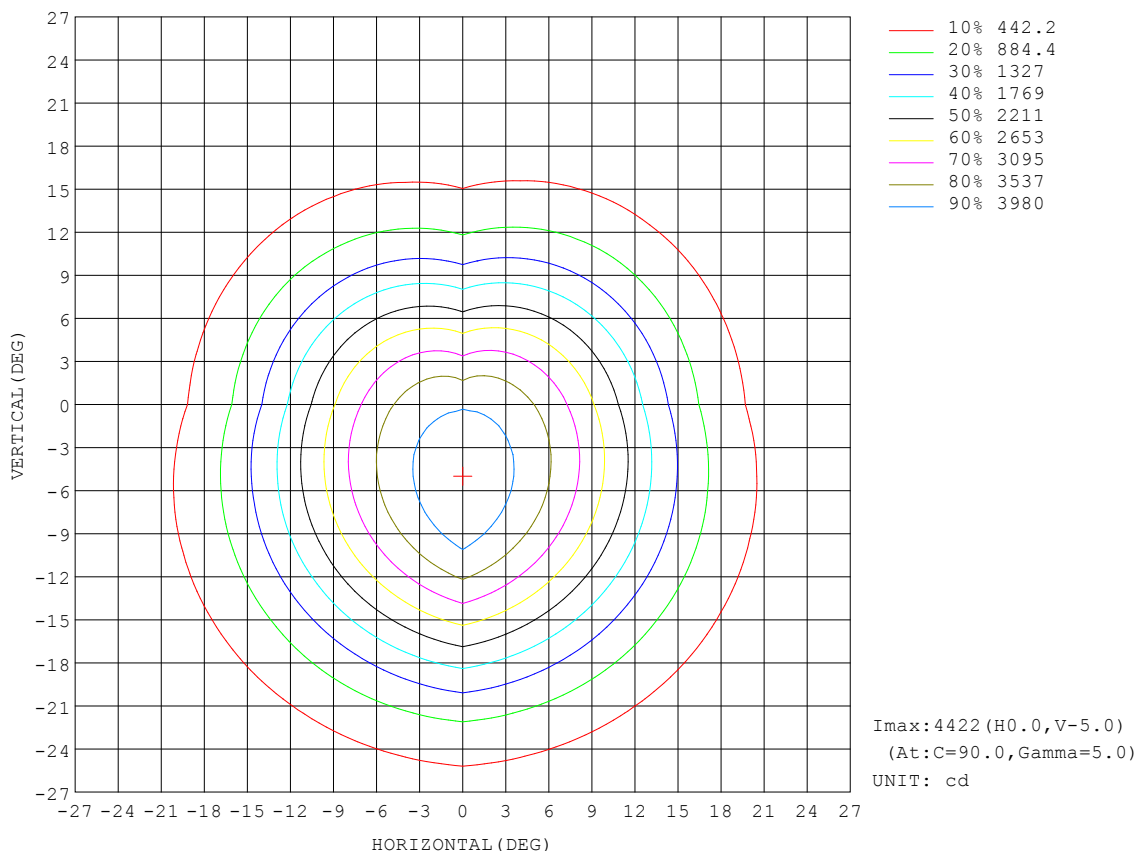
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	91	85	82	90	85	82	90	85	82	78
0.80	98	93	89	97	92	89	96	92	89	86
1.00	102	97	93	101	96	93	99	96	93	89
1.25	105	101	98	104	100	97	102	99	96	92
1.50	108	103	100	106	103	100	104	101	99	95
2.00	110	106	103	108	105	102	106	103	101	96
2.50	111	108	105	110	107	104	107	104	102	97
3.00	113	110	107	111	108	106	107	105	104	97
4.00	114	112	110	112	110	109	109	107	106	99
5.00	116	114	112	114	112	110	110	108	107	100
ROOM INDEX	UF (total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Xie Bi
Test Date:2022-11-28

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.362
Humidity:65.0%
Test Distance:6.810m [K=1.0000]
Remarks:

ISOCANDELA DIAGRAM

Test:U:231.32V I:0.0652A P:12.576W PF:0.8344 Freq:49.37Hz Lamp Flux:823.536x1 lm		
NAME: W21301LED-X	TYPE:	WEIGHT:
SPEC.:P-W21301LED-X-12W2724-CI35031R90-YML100	DIM.:	SERIAL No.:
MFR.: CETTIGA	SUR.:	Shielding Angle:

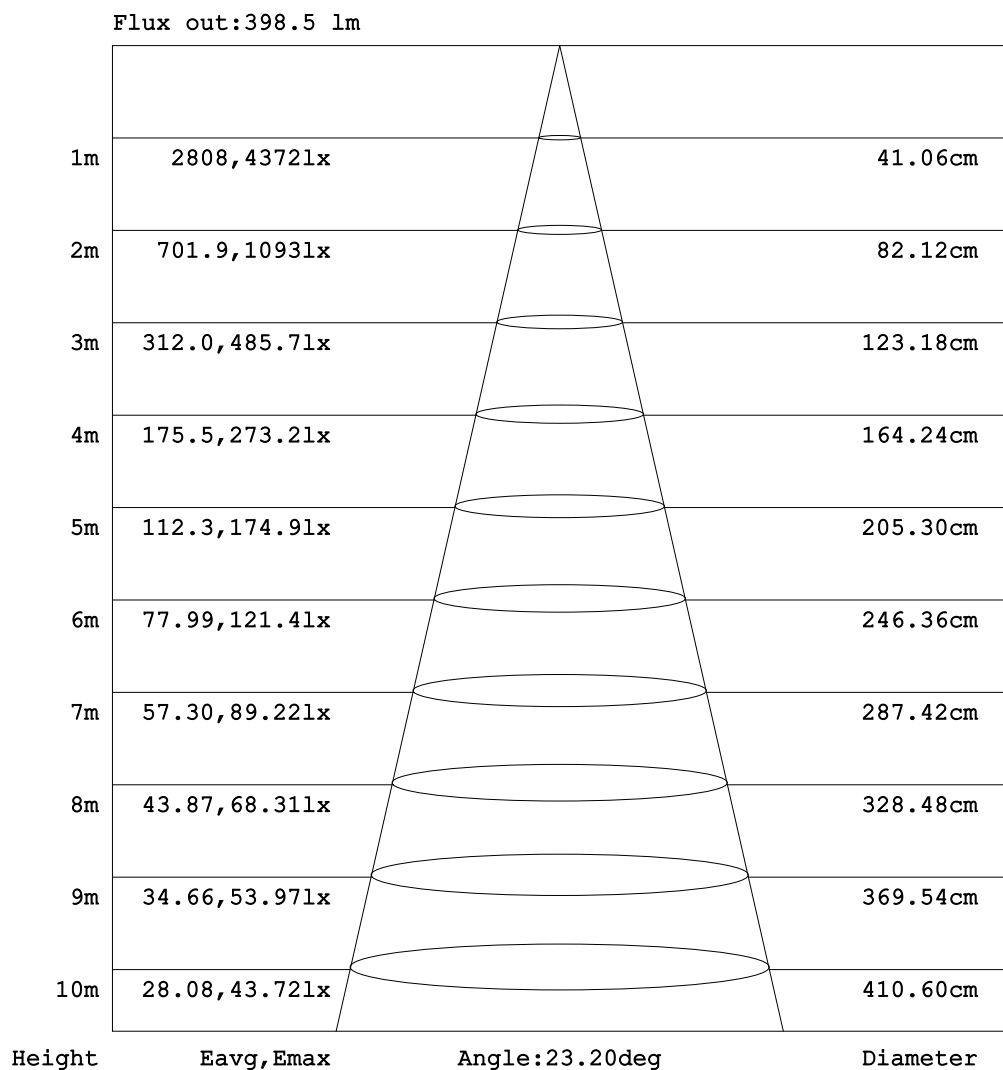


C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: Xie Bi
Test Date: 2022-11-28

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.362
Humidity: 65.0%
Test Distance: 6.810m [K=1.0000]
Remarks:

AAI Figure

Test:U:231.32V I:0.0652A P:12.576W PF:0.8344 Freq:49.37Hz Lamp Flux:823.536x1 lm		
NAME: W21301LED-X	TYPE:	WEIGHT:
SPEC.:P-W21301LED-X-12W2724-CI35031R90-YML100	DIM.:	SERIAL No.:
MFR.: CETTIGA	SUR.:	Shielding Angle:



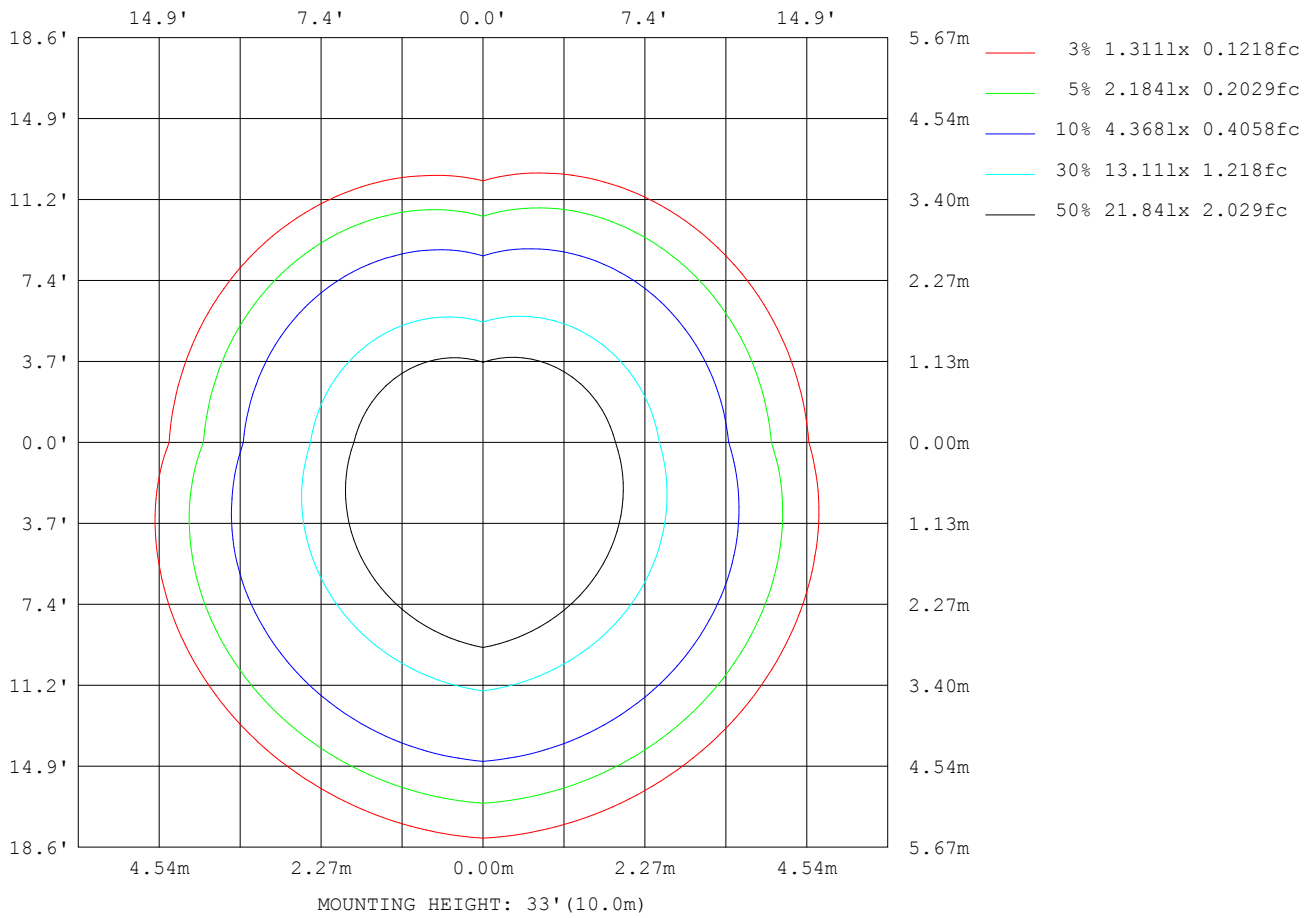
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: Xie Bi
 Test Date: 2022-11-28

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.362
 Humidity: 65.0%
 Test Distance: 6.810m [K=1.0000]
 Remarks:

ISOLUX DIAGRAM

Test:U:231.32V I:0.0652A P:12.576W PF:0.8344 Freq:49.37Hz Lamp Flux:823.536x1 lm		
NAME: W21301LED-X	TYPE:	WEIGHT:
SPEC.:P-W21301LED-X-12W2724-CI35031R90-YML100	DIM.:	SERIAL No.:
MFR.: CETTIGA	SUR.:	Shielding Angle:



C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Xie Bi
Test Date:2022-11-28

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.362
Humidity:65.0%
Test Distance:6.810m [K=1.0000]
Remarks:

LED Avg.L Report

Test:U:231.32V I:0.0652A P:12.576W PF:0.8344 Freq:49.37Hz Lamp Flux:823.536x1 lm		
NAME: W21301LED-X	TYPE:	WEIGHT:
SPEC.:P-W21301LED-X-12W2724-CI35031R90-YML100	DIM.:	SERIAL No.:
MFR.: CETTIGA	SUR.:	Shielding Angle:

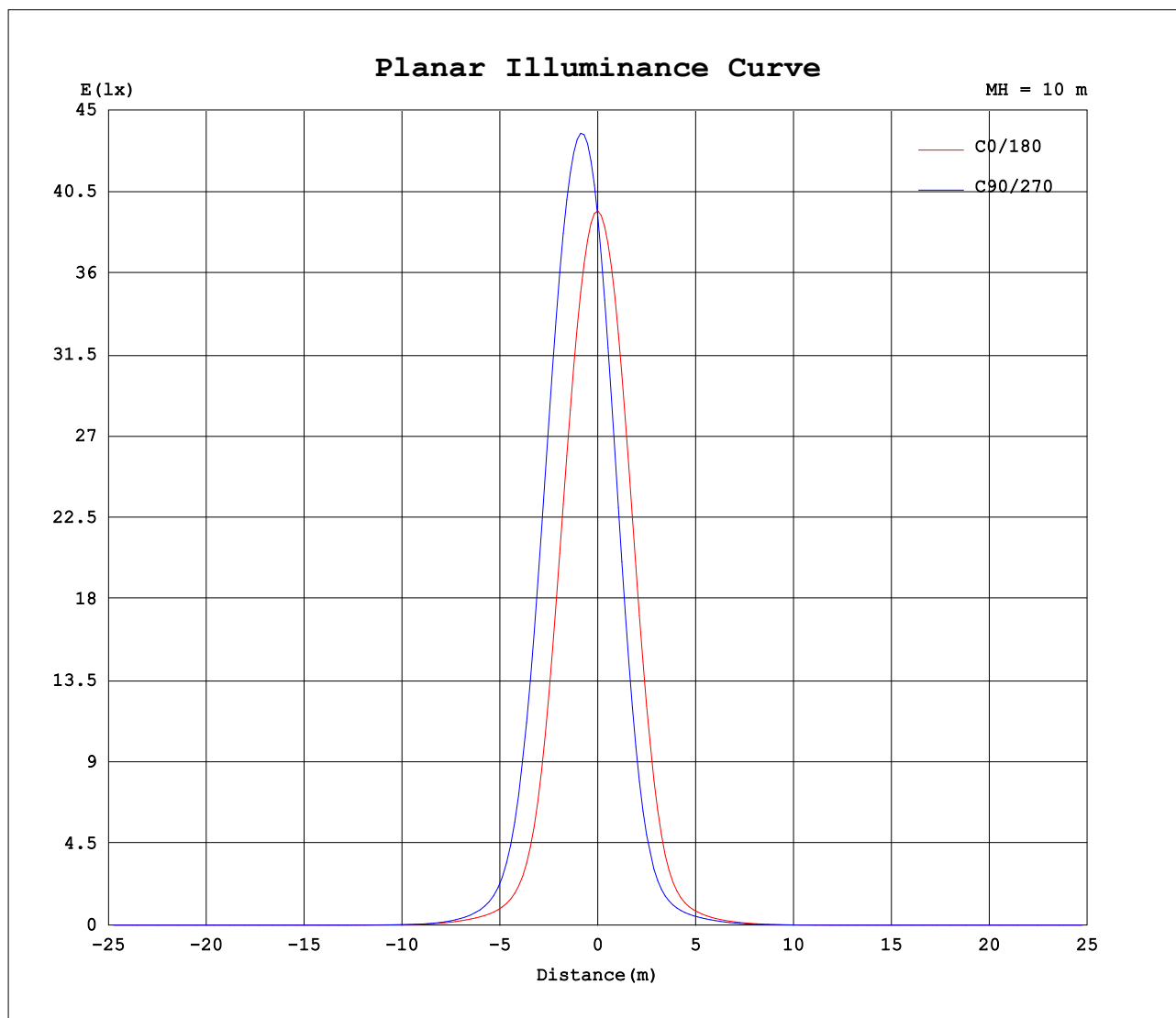
AvgL	cd/m2
L_0~180 (65) av	20
L_0~180 (75) av	8
L_0~180 (85) av	0
L_90~270 (65) av	26
L_90~270 (75) av	15
L_90~270 (85) av	16
L_45 (65) av	24
L_45 (75) av	12
L_45 (85) av	10

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:Xie Bi
 Test Date:2022-11-28

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.362
 Humidity:65.0%
 Test Distance:6.810m [K=1.0000]
 Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: Xie Bi
Test Date: 2022-11-28

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.362
Humidity: 65.0%
Test Distance: 6.810m [K=1.0000]
Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:231.32V I:0.0652A P:12.576W PF:0.8344 Freq:49.37Hz Lamp Flux:823.536x1 lm		
NAME: W21301LED-X	TYPE:	WEIGHT:
SPEC.:P-W21301LED-X-12W2724-CI35031R90-YML100	DIM.:	SERIAL No.:
MFR.: CETTIGA	SUR.:	Shielding Angle:

Table--1

UNIT: cd

C (DEG) γ (DEG)	0	90	180	270															
0	3943	3908	3943	3908															
5	3533	4422	3506	2639															
10	2433	3999	2360	1263															
15	1171	2768	1112	447															
20	410	1347	365	161															
25	161	461	137	80.7															
30	82.2	162	67.8	45.2															
35	43.5	67.3	33.1	21.0															
40	19.1	23.6	13.2	8.23															
45	7.83	6.24	3.99	2.65															
50	3.02	1.36	1.24	0.54															
55	0.56	0.31	0.33	0.14															
60	0.13	0.06	0.07	0.08															
65	0.04	0.04	0.02	0.05															
70	0.02	0.02	0.01	0.03															
75	0.01	0.01	0.00	0.02															
80	0.01	0.00	0.00	0.02															
85	0.00	0.00	0.00	0.01															
90	0.00	0.00	0.00	0.00															
95	0.00	0.00	0.00	0.00															
100	0.00	0.00	0.00	0.00															
105	0.00	0.00	0.00	0.00															
110	0.00	0.00	0.01	0.00															
115	0.00	0.00	0.02	0.00															
120	0.01	0.00	0.04	0.01															
125	0.01	0.02	0.04	0.02															
130	0.03	0.04	0.05	0.04															
135	0.08	0.07	0.08	0.10															
140	0.20	0.13	0.14	0.25															
145	0.53	0.28	0.27	0.63															
150	1.25	0.59	0.61	1.37															
155	2.30	1.34	1.28	2.35															
160	3.40	2.48	2.20	3.25															
165	4.14	3.64	3.07	3.69															
170	4.33	4.36	3.62	3.63															
175	4.16	4.43	3.82	3.64															
180	4.02	4.16	4.01	4.15															

C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Xie Bi
Test Date:2022-11-28

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.362
Humidity:65.0%
Test Distance:6.810m [K=1.0000]
Remarks: