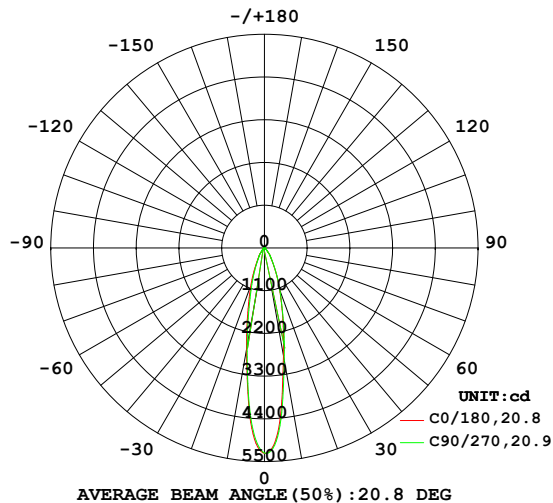


LUMINAIRE PHOTOMETRIC TEST REPORT

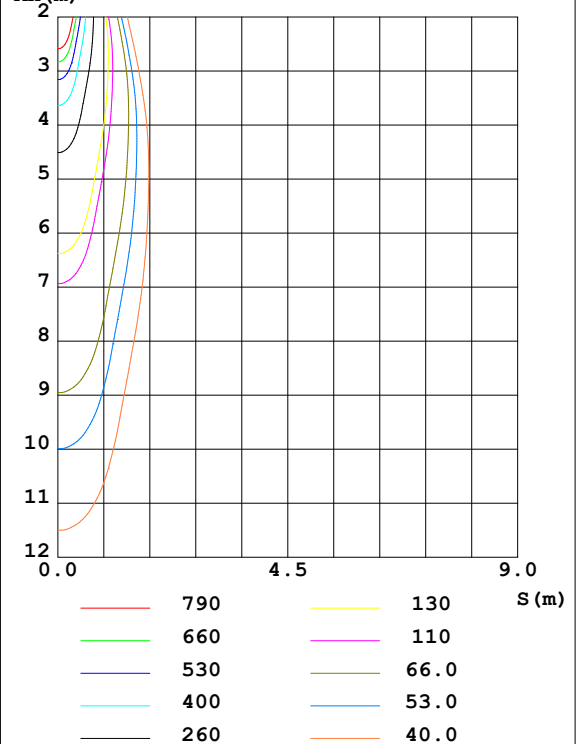
Test:U:232.42V I:0.0915A P:20.274W PF:0.9534 Freq:49.99Hz Lamp Flux:1383.43x1 lm		
NAME: 5902LED	TYPE:	WEIGHT:
SPEC.:P-5902LED-20W3020-CI50036R90-LDK700	DIM.:	SERIAL No.:
MFR.: CETTIGA	SUR.:	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 68.24 lm/W			
MODEL	CLU02Q 1204	I _{max} (cd)	5288	S/MH (C0/180)	0.34
NOMINAL POWER (W)	20W	LOR (%)	100.0	S/MH (C90/270)	0.33
RATED VOLTAGE (V)	230.0	TOTAL FLUX (lm)	1383.4	η UP, DN (C0-180)	0.2, 53.6
NOMINAL FLUX (lm)	1383.43	CIE CLASS	DIRECT	η UP, DN (C180-360)	0.1, 46.1
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: 2024-04-01

γ Range: 0 - 180DEG
γ Interval: 0.5DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V2.00.417
Humidity: 65.0%
Test Distance: 6.810m [K=1.0000]
Remarks:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

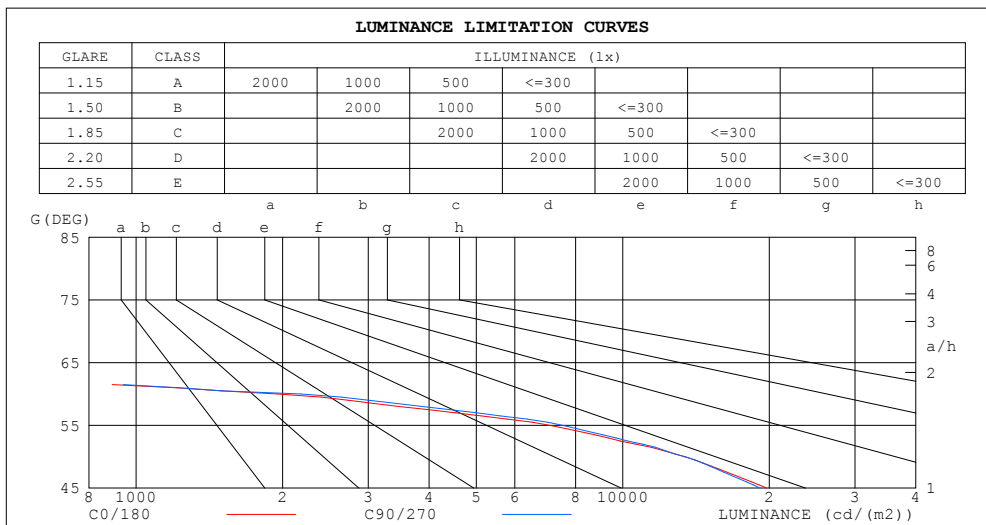
γ	C0	C90	C180	C270					γ	Φ zone	Φ total	%lum,lamp
10	2824	2938	2652	2558					0- 10	362.2	362.2	26.2,26.2
20	1154	1164	1013	901.2					10- 20	475.3	837.5	60.5,60.5
30	416.2	422.4	345.6	318.2					20- 30	297.8	1135	82.1,82.1
40	147.0	147.1	121.6	116.5					30- 40	153.2	1288	93.1,93.1
50	55.13	55.24	51.52	46.78					40- 50	65.47	1354	97.9,97.9
60	6.240	6.982	4.098	3.129					50- 60	24.26	1378	99.6,99.6
70	0.0889	0.0889	0.0749	0.1290					60- 70	0.8667	1379	99.7,99.7
80	0.0279	0.0017	0.0174	0.0436					70- 80	0.0589	1379	99.7,99.7
90	0	0	0.0052	0.0070					80- 90	0.0099	1379	99.7,99.7
100	0	0	0.0122	0.0035					90-100	0.0029	1379	99.7,99.7
110	0.0053	0.0227	0.0314	0.0139					100-110	0.0078	1379	99.7,99.7
120	0.0941	0.1099	0.0925	0.0767					110-120	0.0510	1379	99.7,99.7
130	0.3171	0.3174	0.2530	0.2388					120-130	0.1535	1379	99.7,99.7
140	0.8506	0.7957	0.6161	0.6102					130-140	0.3588	1380	99.7,99.7
150	2.140	1.999	1.441	1.462					140-150	0.7208	1380	99.8,99.8
160	4.424	4.353	3.141	3.244					150-160	1.226	1382	99.9,99.9
170	5.324	5.400	4.614	4.673					160-170	1.277	1383	100,100
180	5.012	5.040	5.001	5.038					170-180	0.4765	1383	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:2024-04-01

γ Range: 0 - 180DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.00.417
 Humidity:65.0%
 Test Distance:6.810m [K=1.0000]
 Remarks:

LUMINANCE LIMITATION CURVES

Test:U:232.42V I:0.0915A P:20.274W PF:0.9534 Freq:49.99Hz Lamp Flux:1383.43x1 lm		
NAME: 5902LED	TYPE:	WEIGHT:
SPEC.:P-5902LED-20W3020-CI50036R90-LDK700	DIM.:	SERIAL No.:
MFR.: CETTIGA	SUR.:	Shielding Angle:



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	6	0
80	25	2
75	35	23
70	41	41
65	122	114
60	1950	2182
55	7076	7525
50	13402	13427
45	19743	19153

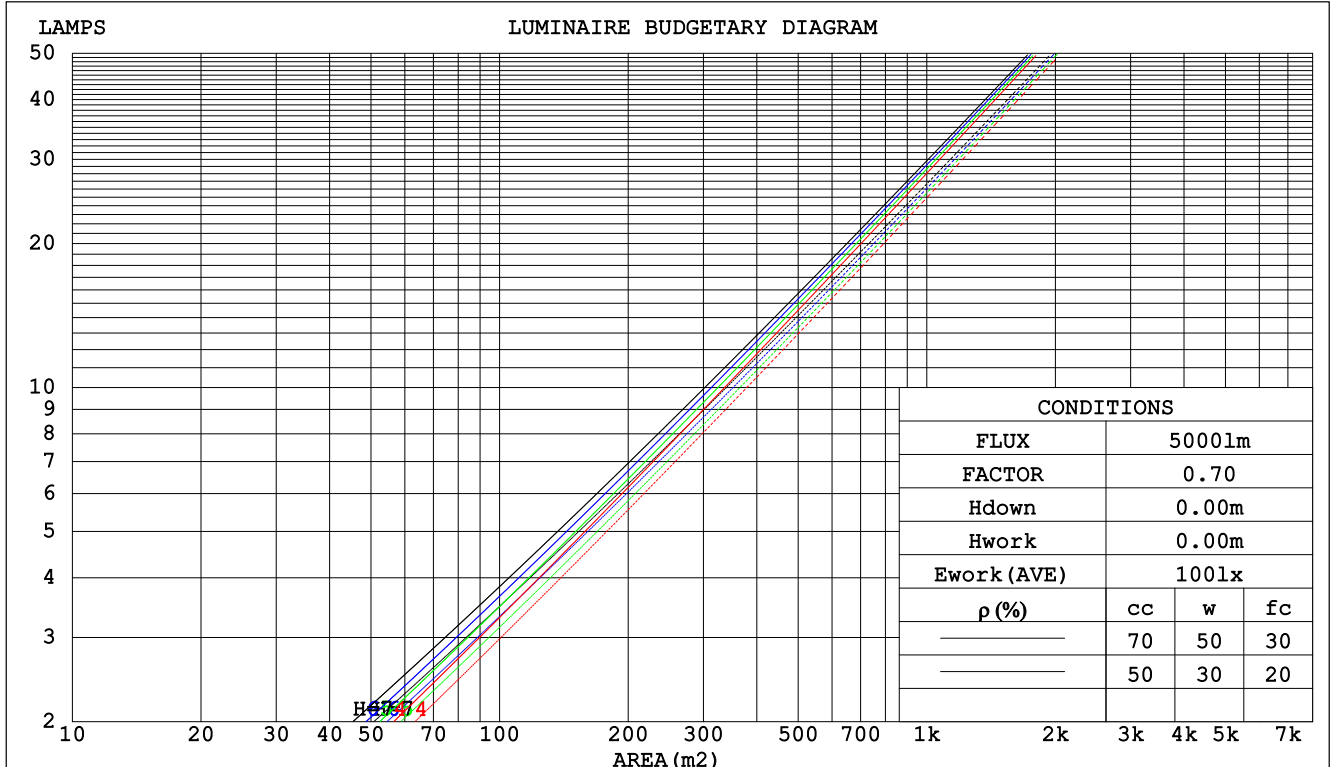
C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Xie Bi
Test Date:2024-04-01

γ Range: 0 - 180DEG
 γ Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.00.417
Humidity:65.0%
Test Distance:6.810m [K=1.0000]
Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:232.42V I:0.0915A P:20.274W PF:0.9534 Freq:49.99Hz Lamp Flux:1383.43x1 lm		
NAME: 5902LED	TYPE:	WEIGHT:
SPEC.:P-5902LED-20W3020-CI50036R90-LDK700	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	1.12	1.10	1.08	1.10	1.08	1.06	1.06	1.04	1.03	1.02	1.01	.00	.98	.97	.97	.95
2.0	1.05	1.02	.99	1.04	1.00	.98	1.00	.98	.96	.97	.95	.94	.95	.93	.92	.90
3.0	.00	.95	.92	.98	.94	.91	.96	.92	.90	.93	.91	.88	.91	.89	.87	.86
4.0	.94	.90	.86	.93	.89	.86	.91	.88	.85	.89	.86	.84	.87	.85	.83	.81
5.0	.90	.85	.81	.89	.84	.81	.87	.83	.80	.86	.82	.80	.84	.81	.79	.78
6.0	.86	.81	.77	.85	.80	.77	.84	.79	.76	.82	.79	.76	.81	.78	.75	.74
7.0	.82	.77	.73	.81	.77	.73	.80	.76	.73	.79	.75	.72	.78	.75	.72	.71
8.0	.79	.74	.70	.78	.73	.70	.77	.73	.70	.76	.72	.69	.75	.72	.69	.68
9.0	.75	.71	.67	.75	.70	.67	.74	.70	.67	.73	.69	.67	.73	.69	.66	.65
10.0	.73	.68	.65	.72	.68	.65	.71	.67	.64	.71	.67	.64	.70	.67	.64	.63



C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Xie Bi
Test Date:2024-04-01

γ Range: 0 - 180DEG
 γ Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.00.417
Humidity:65.0%
Test Distance:6.810m [K=1.0000]
Remarks:

WEC AND CCEC

Test:U:232.42V I:0.0915A P:20.274W PF:0.9534 Freq:49.99Hz Lamp Flux:1383.43x1 lm					
NAME: 5902LED			TYPE:		WEIGHT:
SPEC.:P-5902LED-20W3020-CI50036R90-LDK700			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	.156	.089	.028	.149	.085	.027	.137	.079	.025	.125	.072	.023	.114	.066	.021		
2.0	.148	.081	.025	.142	.078	.024	.132	.073	.023	.122	.068	.021	.113	.064	.020		
3.0	.140	.074	.022	.135	.072	.022	.126	.068	.021	.118	.065	.020	.110	.061	.019		
4.0	.132	.069	.020	.128	.067	.020	.121	.064	.019	.114	.061	.018	.107	.058	.018		
5.0	.125	.064	.019	.122	.063	.018	.115	.060	.018	.109	.058	.017	.103	.055	.017		
6.0	.119	.060	.017	.116	.059	.017	.110	.057	.016	.105	.055	.016	.100	.053	.016		
7.0	.114	.056	.016	.111	.055	.016	.106	.053	.015	.101	.052	.015	.097	.050	.015		
8.0	.108	.053	.015	.106	.052	.015	.101	.051	.014	.097	.049	.014	.093	.048	.014		
9.0	.104	.050	.014	.101	.049	.014	.097	.048	.014	.094	.047	.013	.090	.046	.013		
10.0	.099	.048	.013	.097	.047	.013	.094	.046	.013	.090	.045	.013	.087	.044	.013		

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	.112	.112	.112	.065	.065	.065	.021	.021	.021	
1.0	.172	.160	.149	.147	.137	.128	.101	.094	.089	.058	.055	.052	.019	.018	.017	
2.0	.155	.135	.118	.133	.116	.102	.091	.080	.071	.053	.047	.042	.017	.015	.014	
3.0	.142	.116	.095	.122	.100	.082	.083	.069	.058	.048	.041	.034	.015	.013	.011	
4.0	.130	.101	.078	.112	.087	.068	.077	.061	.048	.045	.036	.028	.014	.012	.009	
5.0	.121	.089	.065	.104	.077	.057	.072	.054	.040	.041	.032	.024	.013	.010	.008	
6.0	.113	.079	.055	.097	.069	.048	.067	.048	.034	.039	.028	.020	.013	.009	.007	
7.0	.106	.071	.047	.091	.062	.041	.063	.043	.029	.036	.026	.017	.012	.008	.006	
8.0	.099	.065	.041	.086	.056	.036	.059	.039	.025	.034	.023	.015	.011	.008	.005	
9.0	.094	.059	.036	.081	.052	.031	.056	.036	.022	.033	.021	.013	.011	.007	.004	
10.0	.089	.055	.032	.077	.048	.028	.053	.033	.020	.031	.020	.012	.010	.007	.004	

C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Xie Bi
Test Date:2024-04-01

γ Range: 0 - 180DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.00.417
Humidity:65.0%
Test Distance:6.810m [K=1.0000]
Remarks:

UGR(Unified Glare Rating) Table

Test:U:232.42V I:0.0915A P:20.274W PF:0.9534 Freq:49.99Hz Lamp Flux:1383.43x1 lm											
NAME: 5902LED					TYPE:			WEIGHT:			
SPEC.:P-5902LED-20W3020-CI50036R90-LDK700					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		15.5	16.3	15.7	16.5	16.6	15.5	16.3	15.7	16.5	16.6
	3H	15.3	16.1	15.6	16.3	16.5	15.4	16.1	15.6	16.3	16.5
	4H	15.3	16.0	15.5	16.2	16.4	15.3	16.0	15.6	16.2	16.4
	6H	15.2	15.8	15.5	16.1	16.3	15.2	15.8	15.5	16.1	16.3
	8H	15.1	15.8	15.4	16.0	16.3	15.1	15.8	15.5	16.0	16.3
	12H	15.1	15.7	15.4	16.0	16.2	15.1	15.7	15.4	16.0	16.3
4H	2H	15.3	16.0	15.6	16.2	16.4	15.3	16.0	15.6	16.2	16.5
	3H	15.1	15.7	15.4	16.0	16.3	15.1	15.7	15.5	16.0	16.3
	4H	15.0	15.6	15.4	15.9	16.2	15.0	15.6	15.4	15.9	16.2
	6H	14.9	15.4	15.3	15.7	16.1	14.9	15.4	15.3	15.8	16.1
	8H	14.9	15.3	15.3	15.7	16.0	14.9	15.3	15.3	15.7	16.1
	12H	14.8	15.2	15.2	15.6	16.0	14.8	15.2	15.2	15.6	16.0
8H	4H	14.9	15.3	15.3	15.7	16.0	14.9	15.3	15.3	15.7	16.1
	6H	14.8	15.1	15.2	15.5	15.9	14.8	15.2	15.2	15.6	16.0
	8H	14.7	15.0	15.2	15.5	15.9	14.7	15.1	15.2	15.5	15.9
	12H	14.6	14.9	15.1	15.4	15.8	14.7	14.9	15.1	15.4	15.9
12H	4H	14.8	15.2	15.2	15.6	16.0	14.8	15.2	15.2	15.6	16.0
	6H	14.7	15.0	15.2	15.5	15.9	14.7	15.1	15.2	15.5	15.9
	8H	14.6	14.9	15.1	15.4	15.8	14.7	14.9	15.1	15.4	15.9
Variations with the observer position at spacings:											
S = 1.0H	+ 2.7 / - 9.0					+ 2.7 / - 8.6					
1.5H	+ 3.8 / - 5.1					+ 3.9 / - 4.9					
2.0H	+ 4.9 / -26.1					+ 4.7 / -26.2					

CIE Pub.117, 1383 lm Total Lamp Luminous Flux Correct (8log(F/F0) = 1.1)
Area: 0.0064 m2

C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Xie Bi
Test Date:2024-04-01

γ Range: 0 - 180DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.00.417
Humidity:65.0%
Test Distance:6.810m [K=1.0000]
Remarks:

UTILIZATION FACTORS TABLE

Test:U:232.42V I:0.0915A P:20.274W PF:0.9534 Freq:49.99Hz Lamp Flux:1383.43x1 lm		
NAME: 5902LED	TYPE:	WEIGHT:
SPEC.:P-5902LED-20W3020-CI50036R90-LDK700	DIM.:	SERIAL No.:
MFR.: CETTIGA	SUR.:	Shielding Angle:

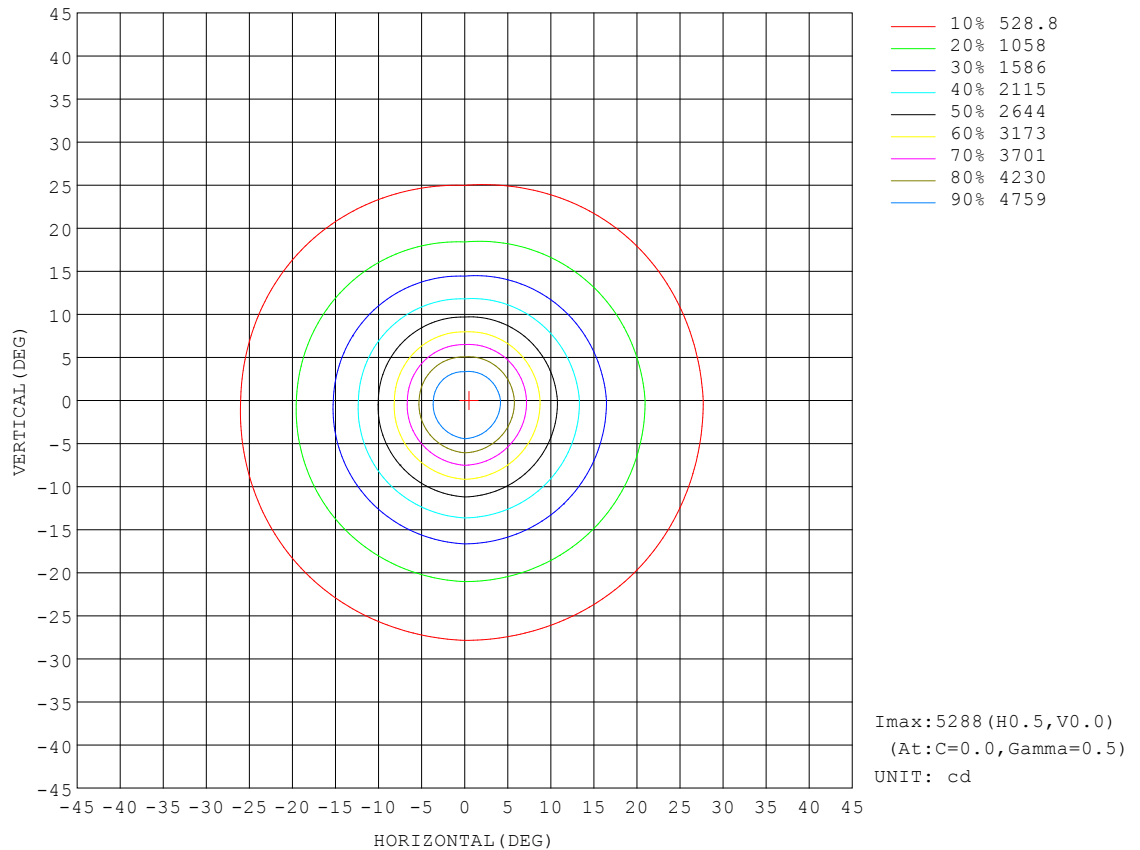
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	87	81	77	87	81	77	86	80	77	73
0.80	95	89	85	94	88	85	93	88	85	81
1.00	99	94	90	98	93	90	97	93	89	85
1.25	103	98	95	102	98	94	100	96	94	89
1.50	106	101	98	105	101	98	103	99	96	92
2.00	109	105	101	107	104	101	104	102	99	94
2.50	110	107	104	109	105	103	106	103	101	95
3.00	112	108	106	110	107	105	107	104	102	96
4.00	114	111	109	112	109	107	108	106	105	98
5.00	115	113	111	113	111	109	109	107	106	99
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: 2024-04-01

γ Range: 0 - 180DEG
 γ Interval: 0.5DEG
 Test System: EVERFINE GO-2000A_V1 SYSTEM V2.00.417
 Humidity: 65.0%
 Test Distance: 6.810m [K=1.0000]
 Remarks:

ISOCANDELA DIAGRAM

Test:U:232.42V I:0.0915A P:20.274W PF:0.9534 Freq:49.99Hz Lamp Flux:1383.43x1 lm		
NAME: 5902LED	TYPE:	WEIGHT:
SPEC.:P-5902LED-20W3020-CI50036R90-LDK700	DIM.:	SERIAL No.:
MFR.: CETTIGA	SUR.:	Shielding Angle:

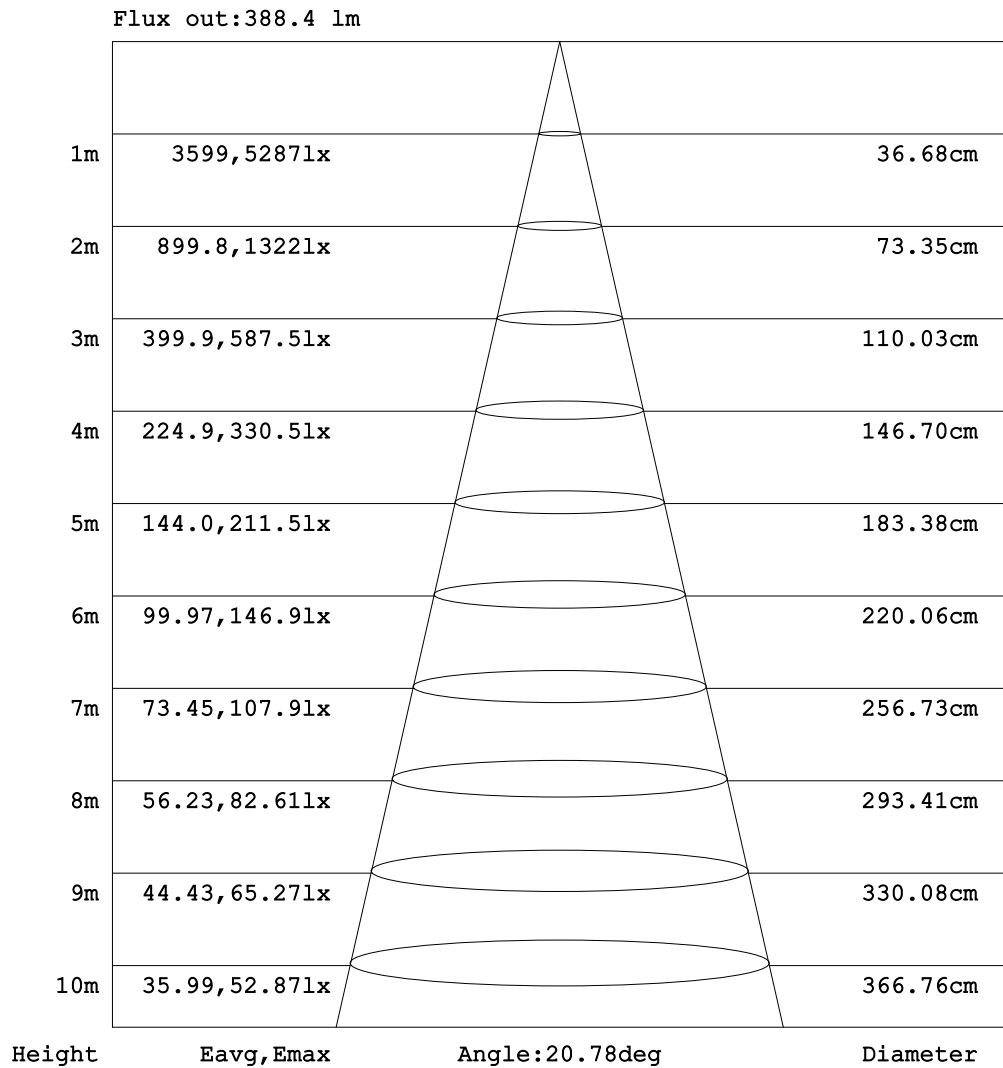


C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Xie Bi
Test Date:2024-04-01

γ Range: 0 - 180DEG
 γ Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.00.417
Humidity:65.0%
Test Distance:6.810m [K=1.0000]
Remarks:

AAI Figure

Test:U:232.42V I:0.0915A P:20.274W PF:0.9534 Freq:49.99Hz Lamp Flux:1383.43x1 lm		
NAME: 5902LED	TYPE:	WEIGHT:
SPEC.:P-5902LED-20W3020-CI50036R90-LDK700	DIM.:	SERIAL No.:
MFR.: CETTIGA	SUR.:	Shielding Angle:



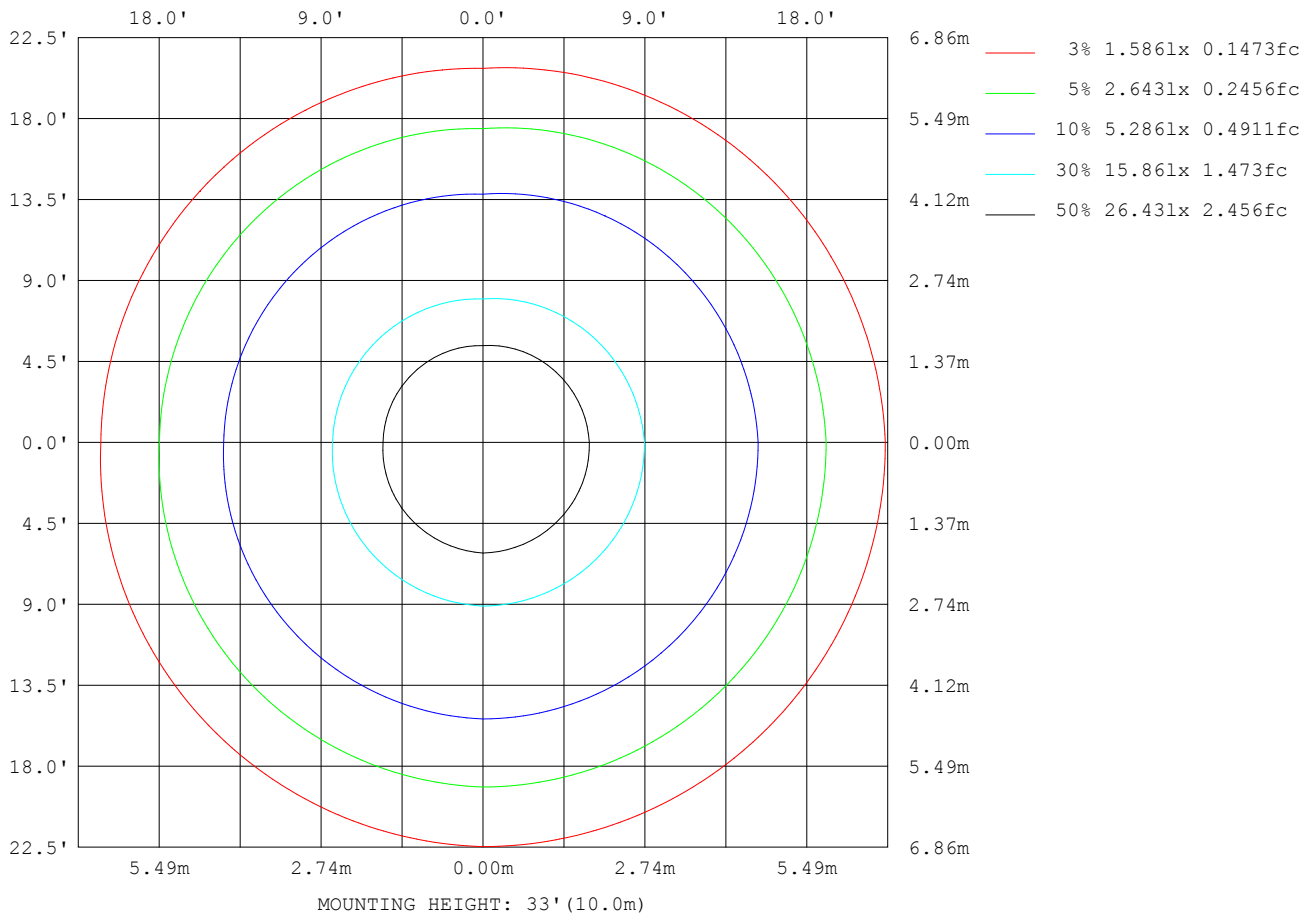
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:Xie Bi
 Test Date:2024-04-01

γ Range: 0 - 180DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.00.417
 Humidity:65.0%
 Test Distance:6.810m [K=1.0000]
 Remarks:

ISOLUX DIAGRAM

Test:U:232.42V I:0.0915A P:20.274W PF:0.9534 Freq:49.99Hz Lamp Flux:1383.43x1 lm		
NAME: 5902LED	TYPE:	WEIGHT:
SPEC.:P-5902LED-20W3020-CI50036R90-LDK700	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:2024-04-01

γ Range: 0 - 180DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.00.417
Humidity:65.0%
Test Distance:6.810m [K=1.0000]
Remarks:

LED Avg.L Report

Test:U:232.42V I:0.0915A P:20.274W PF:0.9534 Freq:49.99Hz Lamp Flux:1383.43x1 lm		
NAME: 5902LED	TYPE:	WEIGHT:
SPEC.:P-5902LED-20W3020-CI50036R90-LDK700	DIM.:	SERIAL No.:
MFR.: CETTIGA	SUR.:	Shielding Angle:

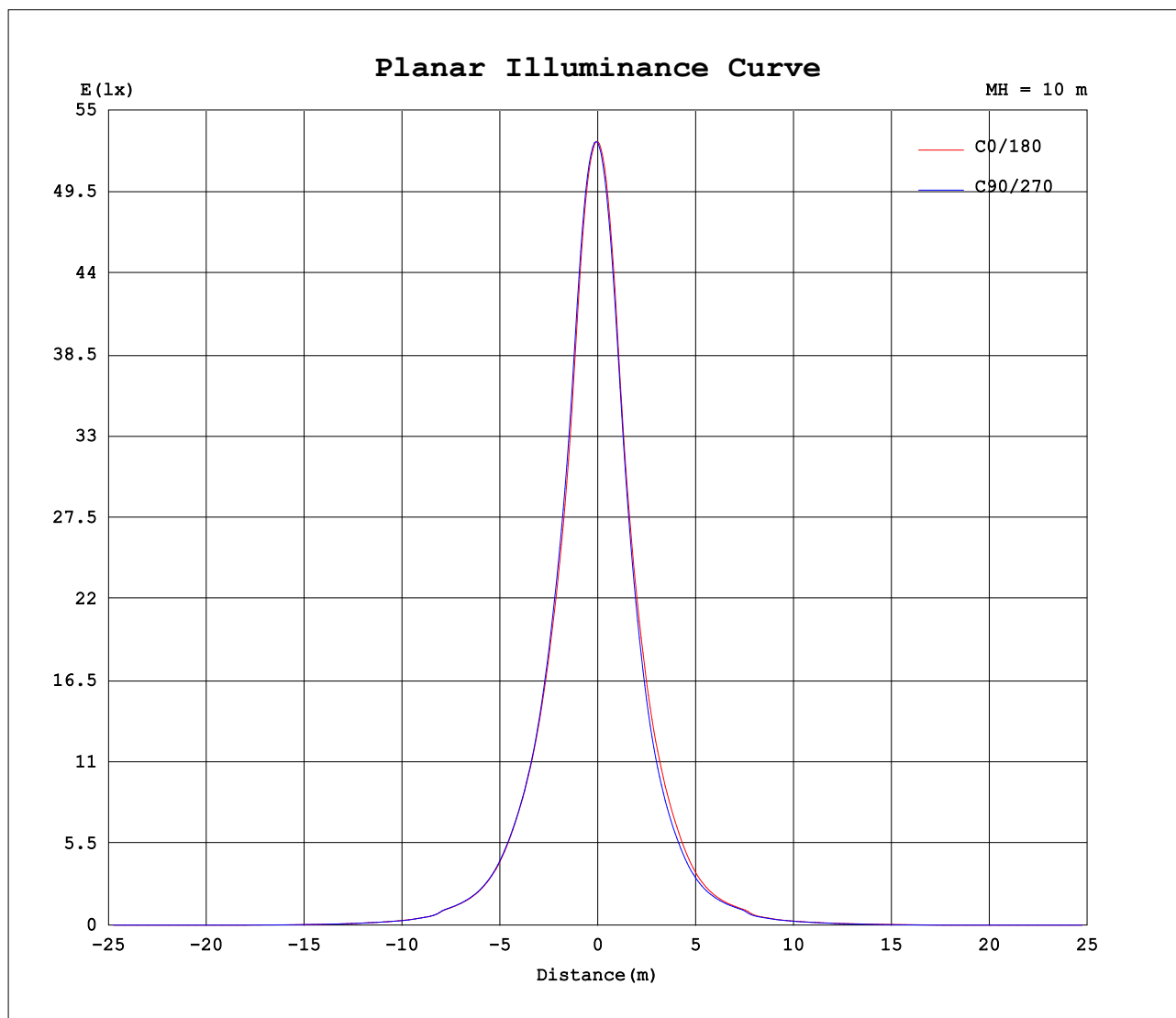
AvgL	cd/m2
L_0~180 (65) av	111
L_0~180 (75) av	31
L_0~180 (85) av	8
L_90~270 (65) av	109
L_90~270 (75) av	35
L_90~270 (85) av	17
L_45 (65) av	109
L_45 (75) av	33
L_45 (85) av	14

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Xie Bi
Test Date:2024-04-01

γ Range: 0 - 180DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.00.417
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: 2024-04-01

γ Range: 0 - 180DEG
 γ Interval: 0.5DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V2.00.417
Humidity: 65.0%
Test Distance: 6.810m [K=1.0000]
Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:232.42V I:0.0915A P:20.274W PF:0.9534 Freq:49.99Hz Lamp Flux:1383.43x1 lm		
NAME: 5902LED	TYPE:	WEIGHT:
SPEC.:P-5902LED-20W3020-CI50036R90-LDK700	DIM.:	SERIAL No.:
MFR.: CETTIGA	SUR.:	Shielding Angle:

Table--1

UNIT: cd

C (DEG) γ (DEG)	0	90	180	270															
0	5286	5278	5286	5278															
5	4509	4596	4343	4251															
10	2824	2938	2652	2558															
15	1816	1862	1626	1492															
20	1154	1164	1013	901															
25	710	720	594	527															
30	416	422	346	318															
35	266	269	231	220															
40	147	147	122	116															
45	89.3	86.7	77.3	74.9															
50	55.1	55.2	51.5	46.8															
55	26.0	27.6	31.4	24.0															
60	6.24	6.98	4.10	3.13															
65	0.33	0.31	0.27	0.28															
70	0.09	0.09	0.07	0.13															
75	0.06	0.04	0.05	0.08															
80	0.03	0.00	0.02	0.04															
85	0.00	0.00	0.01	0.02															
90	0.00	0.00	0.01	0.01															
95	0.00	0.00	0.01	0.00															
100	0.00	0.00	0.01	0.00															
105	0.00	0.00	0.02	0.00															
110	0.01	0.02	0.03	0.01															
115	0.05	0.06	0.06	0.04															
120	0.09	0.11	0.09	0.08															
125	0.18	0.19	0.16	0.14															
130	0.32	0.32	0.25	0.24															
135	0.52	0.51	0.40	0.39															
140	0.85	0.80	0.62	0.61															
145	1.37	1.26	0.95	0.95															
150	2.14	2.00	1.44	1.46															
155	3.23	3.09	2.16	2.23															
160	4.42	4.35	3.14	3.24															
165	5.18	5.22	4.09	4.16															
170	5.32	5.40	4.61	4.67															
175	5.14	5.13	4.82	4.78															
180	5.01	5.04	5.00	5.04															

C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
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Operators:Xie Bi
Test Date:2024-04-01

γ Range: 0 - 180DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.00.417
Humidity:65.0%
Test Distance:6.810m [K=1.0000]
Remarks: