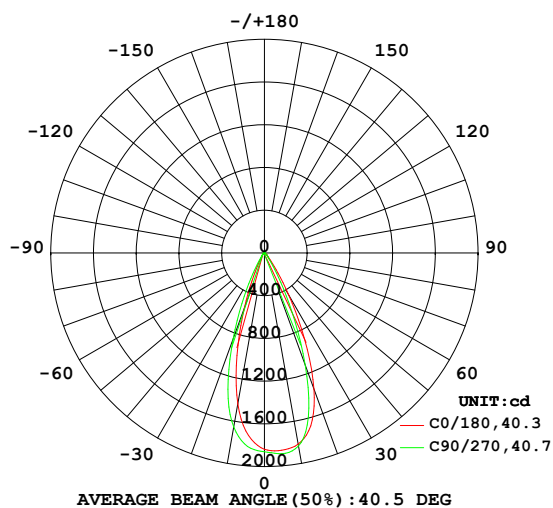


LUMINAIRE PHOTOMETRIC TEST REPORT

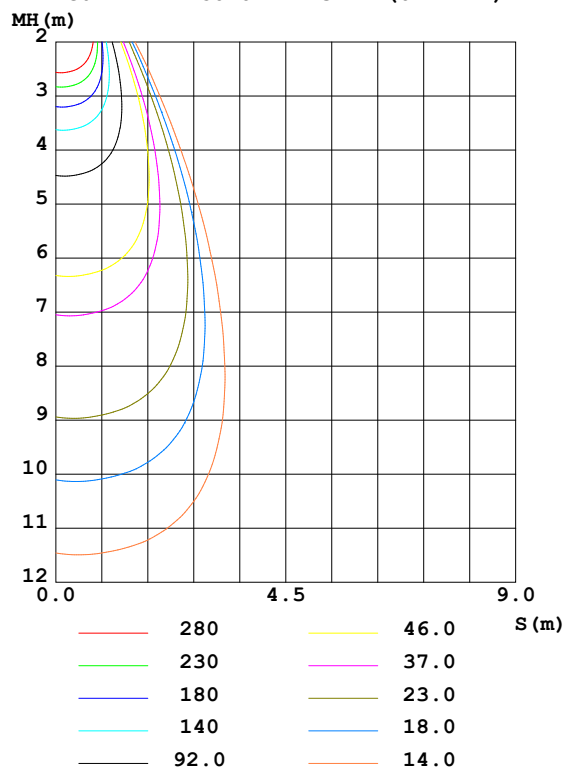
Test:U:220.7V I:0.0607A P:12.46W PF:0.9307 Freq:59.98Hz Lamp Flux:921.169x1 lm					
NAME: 2161LED		TYPE:		WEIGHT:	
SPEC.:P-2161LED-12W3040-CI35031R90-OS700		DIM.:		SERIAL No.:	
MFR.: CETTIGA		SUR.:		Shielding Angle:	

DATA OF LAMP		PHOTOMETRIC DATA				Eff: 73.92 lm/W
MODEL	CLU701 1002	I _{max} (cd)	1887	S/MH (C0/180)	0.51	
NOMINAL POWER (W)	12W	LOR (%)	100.0	S/MH (C90/270)	0.60	
RATED VOLTAGE (V)	220.0	TOTAL FLUX (lm)	921.17	η UP, DN (C0-180)	0.2, 61.0	
NOMINAL FLUX (lm)	921.169	CIE CLASS	DIRECT	η UP, DN (C180-360)	0.1, 38.7	
LAMPS INSIDE	1	η up (%)	0.3	CIBSE SHR NOM	0.50	
TEST VOLTAGE (V)	220.2	η down (%)	99.7	CIBSE SHR MAX	0.65	

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: 2020-07-02

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.362
 Humidity: 65.0%
 Test Distance: 6.900m [K=1.0000]
 Remarks:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

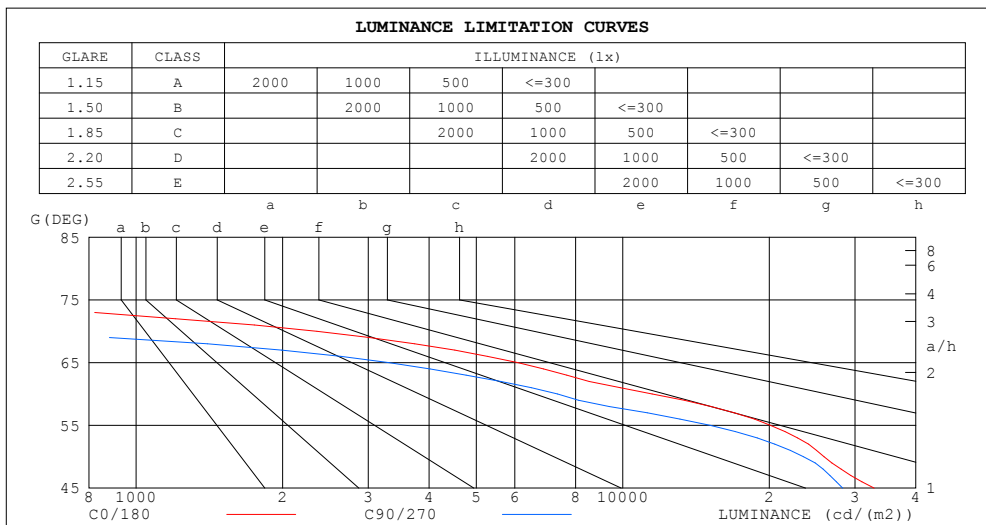
γ	C0	C90	C180	C270					γ	Φ zone	Φ total	%lum, lamp
10	1817	1835	1436	1654					0- 10	169.4	169.4	18.4,18.4
20	1358	1119	550.6	858.3					10- 20	377.6	547.1	59.4,59.4
30	459.7	264.1	95.90	187.6					20- 30	253.9	801.0	86.9,86.9
40	79.82	53.96	33.64	41.37					30- 40	73.33	874.3	94.9,94.9
50	32.69	29.66	15.68	22.39					40- 50	27.83	902.1	97.9,97.9
60	11.27	7.207	3.027	5.088					50- 60	13.34	915.5	99.4,99.4
70	1.580	0.3179	0.0521	0.1509					60- 70	2.747	918.2	99.7,99.7
80	0.0929	0.0058	0.0116	0.0581					70- 80	0.1527	918.4	99.7,99.7
90	0.0059	0.0058	0.0116	0.0174					80- 90	0.0237	918.4	99.7,99.7
100	0.0058	0.0058	0.0174	0.0116					90-100	0.0104	918.4	99.7,99.7
110	0.0058	0.0232	0.0406	0.0174					100-110	0.0164	918.4	99.7,99.7
120	0.0174	0.0522	0.0755	0.0174					110-120	0.0298	918.4	99.7,99.7
130	0.0347	0.1451	0.1684	0.0870					120-130	0.0560	918.5	99.7,99.7
140	0.3016	0.5866	0.5752	0.3481					130-140	0.1808	918.7	99.7,99.7
150	1.142	1.625	1.480	1.125					140-150	0.5255	919.2	99.8,99.8
160	2.309	2.757	2.409	2.078					150-160	0.8563	920.1	99.9,99.9
170	3.203	3.587	3.239	2.831					160-170	0.7829	920.8	100,100
180	3.813	3.923	3.830	3.894					170-180	0.3328	921.2	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:2020-07-02

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.362
Humidity:65.0%
Test Distance:6.900m [K=1.0000]
Remarks:

LUMINANCE LIMITATION CURVES

Test:U:220.7V I:0.0607A P:12.46W PF:0.9307 Freq:59.98Hz Lamp Flux:921.169x1 lm		
NAME: 2161LED	TYPE:	WEIGHT:
SPEC.:P-2161LED-12W3040-CI35031R90-OS700	DIM.:	SERIAL No.:
MFR.: CETTIGA	SUR.:	Shielding Angle:



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	238	34
80	273	17
75	321	68
70	2353	474
65	6085	3303
60	11490	7344
55	20107	15124
50	25911	23513
45	32847	28309

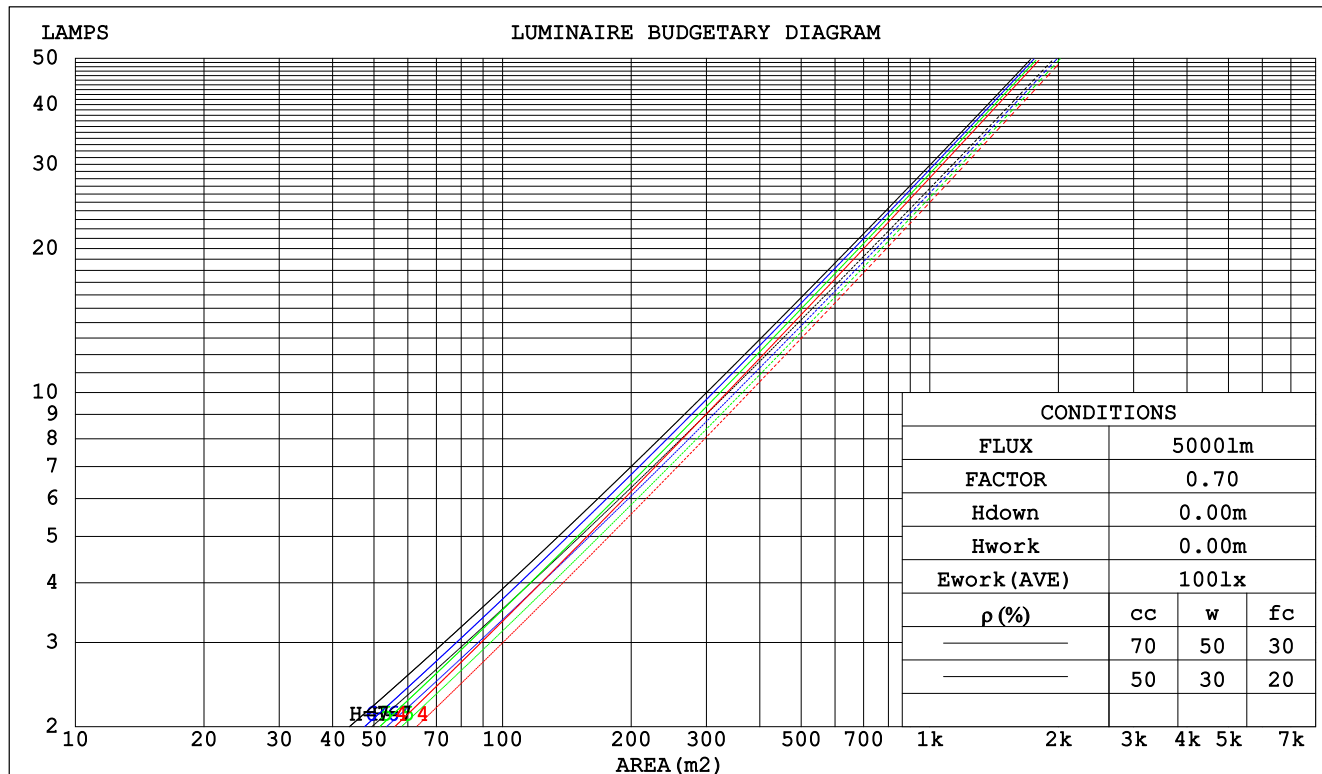
C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Xie Bi
Test Date:2020-07-02

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.362
Humidity:65.0%
Test Distance:6.900m [K=1.0000]
Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:220.7V I:0.0607A P:12.46W PF:0.9307 Freq:59.98Hz Lamp Flux:921.169x1 lm		
NAME: 2161LED	TYPE:	WEIGHT:
SPEC.:P-2161LED-12W3040-CI35031R90-OS700	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	1.09	1.07	1.10	1.08	1.06	1.05	1.04	1.02	1.02	1.00	.99	.98	.97	.96	.95
2.0	1.05	1.02	.99	1.03	1.00	.98	1.00	.98	.95	.97	.95	.93	.94	.93	.91	.90
3.0	.99	.95	.92	.98	.94	.91	.95	.92	.89	.93	.90	.88	.91	.88	.87	.85
4.0	.94	.89	.86	.93	.89	.85	.91	.87	.84	.89	.86	.83	.87	.84	.82	.81
5.0	.89	.84	.81	.88	.84	.80	.87	.83	.80	.85	.82	.79	.84	.81	.78	.77
6.0	.85	.80	.76	.84	.79	.76	.83	.79	.75	.81	.78	.75	.80	.77	.74	.73
7.0	.81	.76	.72	.80	.76	.72	.79	.75	.72	.78	.74	.71	.77	.74	.71	.70
8.0	.78	.72	.69	.77	.72	.69	.76	.72	.69	.75	.71	.68	.74	.71	.68	.67
9.0	.74	.69	.66	.74	.69	.66	.73	.69	.65	.72	.68	.65	.71	.68	.65	.64
10.0	.71	.66	.63	.71	.66	.63	.70	.66	.63	.69	.65	.63	.69	.65	.62	.61



C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:Xie Bi
 Test Date:2020-07-02

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.362
 Humidity:65.0%
 Test Distance:6.900m [K=1.0000]
 Remarks:

WEC AND CCEC

Test:U:220.7V I:0.0607A P:12.46W PF:0.9307 Freq:59.98Hz Lamp Flux:921.169x1 lm		
NAME: 2161LED	TYPE:	WEIGHT:
SPEC.:P-2161LED-12W3040-CI35031R90-OS700	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 Coeffcients (WEC)										
0.0																	
1.0	.159	.090	.029	.152	.087	.028	.139	.080	.026	.128	.074	.024	.117	.068	.022		
2.0	.150	.082	.025	.144	.080	.024	.134	.074	.023	.124	.070	.022	.115	.065	.021		
3.0	.142	.075	.023	.137	.073	.022	.128	.069	.021	.120	.066	.020	.112	.062	.019		
4.0	.134	.070	.021	.130	.068	.020	.123	.065	.019	.115	.062	.019	.109	.059	.018		
5.0	.127	.065	.019	.124	.064	.019	.117	.061	.018	.111	.059	.017	.105	.056	.017		
6.0	.121	.061	.017	.118	.060	.017	.113	.058	.017	.107	.056	.016	.102	.054	.016		
7.0	.116	.057	.016	.113	.056	.016	.108	.055	.016	.103	.053	.015	.099	.051	.015		
8.0	.111	.054	.015	.108	.053	.015	.104	.052	.015	.100	.050	.015	.096	.049	.014		
9.0	.106	.051	.014	.104	.051	.014	.100	.049	.014	.096	.048	.014	.093	.047	.014		
10.0	.102	.049	.014	.100	.048	.013	.096	.047	.013	.093	.046	.013	.090	.045	.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	.088	.058	.055	.051	.019	.018	.017	
2.0	.156	.135	.118	.133	.116	.102	.091	.080	.071	.053	.047	.042	.017	.015	.014	
3.0	.142	.116	.095	.122	.100	.082	.084	.069	.058	.048	.041	.034	.016	.013	.011	
4.0	.131	.101	.078	.112	.087	.068	.077	.061	.048	.045	.036	.028	.014	.012	.009	
5.0	.121	.089	.065	.104	.077	.056	.072	.054	.040	.042	.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	.092	.062	.041	.063	.043	.029	.037	.026	.017	.012	.008	.006	
8.0	.100	.065	.041	.086	.056	.035	.060	.040	.025	.035	.023	.015	.011	.008	.005	
9.0	.095	.060	.036	.082	.052	.031	.057	.036	.022	.033	.021	.013	.011	.007	.004	
10.0	.091	.055	.032	.078	.048	.027	.054	.034	.020	.032	.020	.012	.010	.007	.004	

C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Xie Bi
Test Date:2020-07-02

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.362
Humidity:65.0%
Test Distance:6.900m [K=1.0000]
Remarks:

UGR(Unified Glare Rating) Table

Test:U:220.7V I:0.0607A P:12.46W PF:0.9307 Freq:59.98Hz Lamp Flux:921.169x1 lm											
NAME.: 2161LED						TYPE.:			WEIGHT.:		
SPEC.:P-2161LED-12W3040-CI35031R90-OS700						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	3H	19.7	20.5	19.9	20.7	20.9	17.9	18.7	18.1	18.8	19.0
	4H	19.6	20.4	19.9	20.5	20.7	17.7	18.5	18.0	18.7	18.9
	6H	19.5	20.2	19.8	20.4	20.7	17.6	18.3	17.9	18.6	18.8
	8H	19.4	20.1	19.7	20.3	20.6	17.5	18.2	17.8	18.4	18.7
	8H	19.4	20.0	19.7	20.3	20.5	17.5	18.1	17.8	18.4	18.6
	12H	19.3	20.0	19.7	20.2	20.5	17.4	18.1	17.8	18.3	18.6
4H	2H	19.6	20.3	19.8	20.5	20.7	17.7	18.4	18.0	18.7	18.9
	3H	19.4	20.0	19.7	20.3	20.6	17.6	18.2	17.9	18.5	18.7
	4H	19.3	19.9	19.7	20.2	20.5	17.5	18.0	17.8	18.3	18.7
	6H	19.2	19.7	19.6	20.1	20.4	17.4	17.9	17.8	18.2	18.6
	8H	19.2	19.6	19.6	20.0	20.4	17.3	17.8	17.7	18.1	18.5
	12H	19.1	19.5	19.5	19.9	20.3	17.3	17.7	17.7	18.1	18.5
8H	4H	19.2	19.6	19.6	20.0	20.4	17.3	17.8	17.7	18.2	18.5
	6H	19.1	19.4	19.5	19.8	20.3	17.2	17.6	17.7	18.0	18.4
	8H	19.0	19.3	19.5	19.8	20.2	17.2	17.5	17.6	17.9	18.4
	12H	19.0	19.2	19.4	19.7	20.2	17.1	17.4	17.6	17.8	18.3
12H	4H	19.1	19.5	19.5	19.9	20.3	17.3	17.7	17.7	18.1	18.5
	6H	19.0	19.3	19.5	19.8	20.2	17.2	17.5	17.6	17.9	18.4
	8H	19.0	19.2	19.4	19.7	20.2	17.1	17.4	17.6	17.8	18.3
Variations with the observer position at spacings:											
S = 1.0H		+ 3.2 / - 3.9					+ 2.0 / - 4.1				
1.5H		+ 4.3 / - 2.3					+ 1.9 / - 1.8				
2.0H		+ 3.0 / - 6.0					+ 3.2 / - 6.3				

CIE Pub.117, 921.2 lm Total Lamp Luminous Flux Correct (8log(F/F0) = -0.3)

C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Xie Bi
Test Date:2020-07-02

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.362
Humidity:65.0%
Test Distance:6.900m [K=1.0000]
Remarks:

UTILIZATION FACTORS TABLE

Test:U:220.7V I:0.0607A P:12.46W PF:0.9307 Freq:59.98Hz Lamp Flux:921.169x1 lm		
NAME: 2161LED	TYPE:	WEIGHT:
SPEC.:P-2161LED-12W3040-CI35031R90-OS700	DIM.:	SERIAL No.:
MFR.: CETTIGA	SUR.:	Shielding Angle:

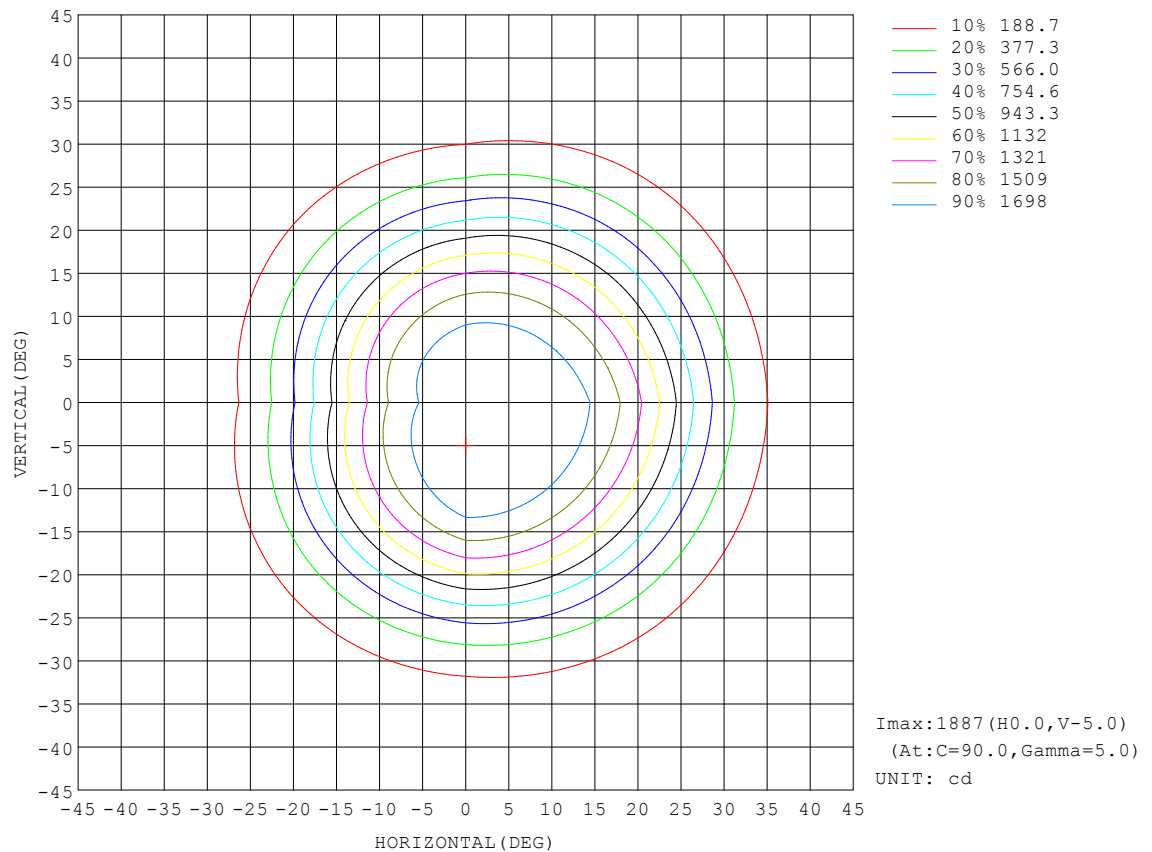
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	88	82	78	88	82	78	87	82	78	75
0.80	96	90	86	95	90	86	94	89	86	82
1.00	100	95	91	99	94	91	97	94	90	86
1.25	104	99	95	103	98	95	101	97	94	90
1.50	106	102	99	105	101	98	103	100	97	93
2.00	109	105	102	108	104	101	105	102	100	94
2.50	111	107	104	109	106	103	106	103	101	95
3.00	112	109	106	110	107	105	107	105	103	96
4.00	114	111	109	112	110	108	108	107	105	98
5.00	115	113	111	113	111	110	109	108	107	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:2020-07-02

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.362
Humidity:65.0%
Test Distance:6.900m [K=1.0000]
Remarks:

ISOCANDELA DIAGRAM

Test:U:220.7V I:0.0607A P:12.46W PF:0.9307 Freq:59.98Hz Lamp Flux:921.169x1 lm		
NAME: 2161LED	TYPE:	WEIGHT:
SPEC.:P-2161LED-12W3040-CI35031R90-OS700	DIM.:	SERIAL No.:
MFR.: CETTIGA	SUR.:	Shielding Angle:

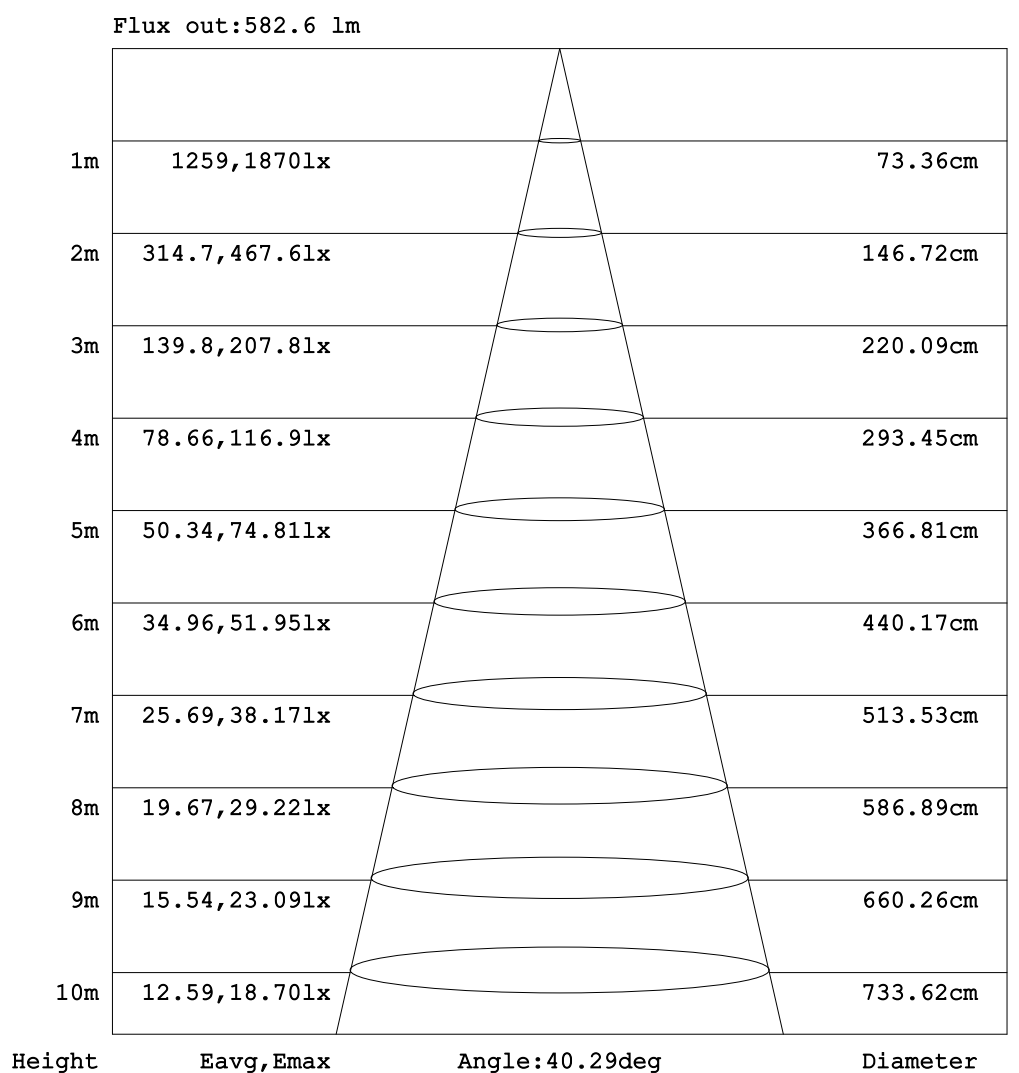


C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Xie Bi
Test Date:2020-07-02

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.362
Humidity:65.0%
Test Distance:6.900m [K=1.0000]
Remarks:

AAI Figure

Test:U:220.7V I:0.0607A P:12.46W PF:0.9307 Freq:59.98Hz Lamp Flux:921.169x1 lm		
NAME: 2161LED	TYPE:	WEIGHT:
SPEC.:P-2161LED-12W3040-CI35031R90-OS700	DIM.:	SERIAL No.:
MFR.: CETTIGA	SUR.:	Shielding Angle:



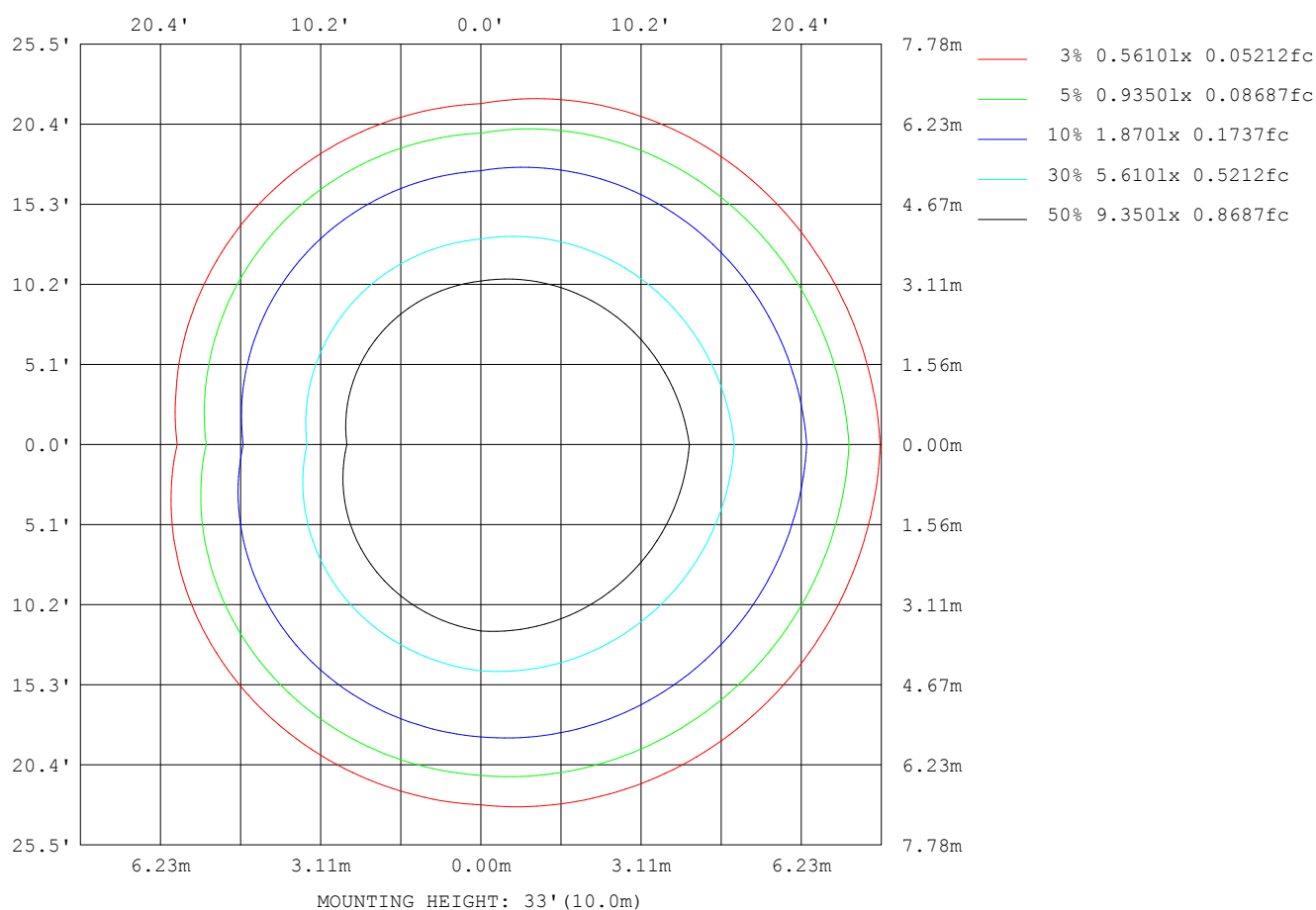
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Xie Bi
Test Date:2020-07-02

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.362
Humidity:65.0%
Test Distance:6.900m [K=1.0000]
Remarks:

ISOLUX DIAGRAM

Test:U:220.7V I:0.0607A P:12.46W PF:0.9307 Freq:59.98Hz Lamp Flux:921.169x1 lm		
NAME: 2161LED	TYPE:	WEIGHT:
SPEC.:P-2161LED-12W3040-CI35031R90-OS700	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:2020-07-02

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.362
Humidity:65.0%
Test Distance:6.900m [K=1.0000]
Remarks:

LED Avg.L Report

Test:U:220.7V I:0.0607A P:12.46W PF:0.9307 Freq:59.98Hz Lamp Flux:921.169x1 lm		
NAME: 2161LED	TYPE:	WEIGHT:
SPEC.:P-2161LED-12W3040-CI35031R90-OS700	DIM.:	SERIAL No.:
MFR.: CETTIGA	SUR.:	Shielding Angle:

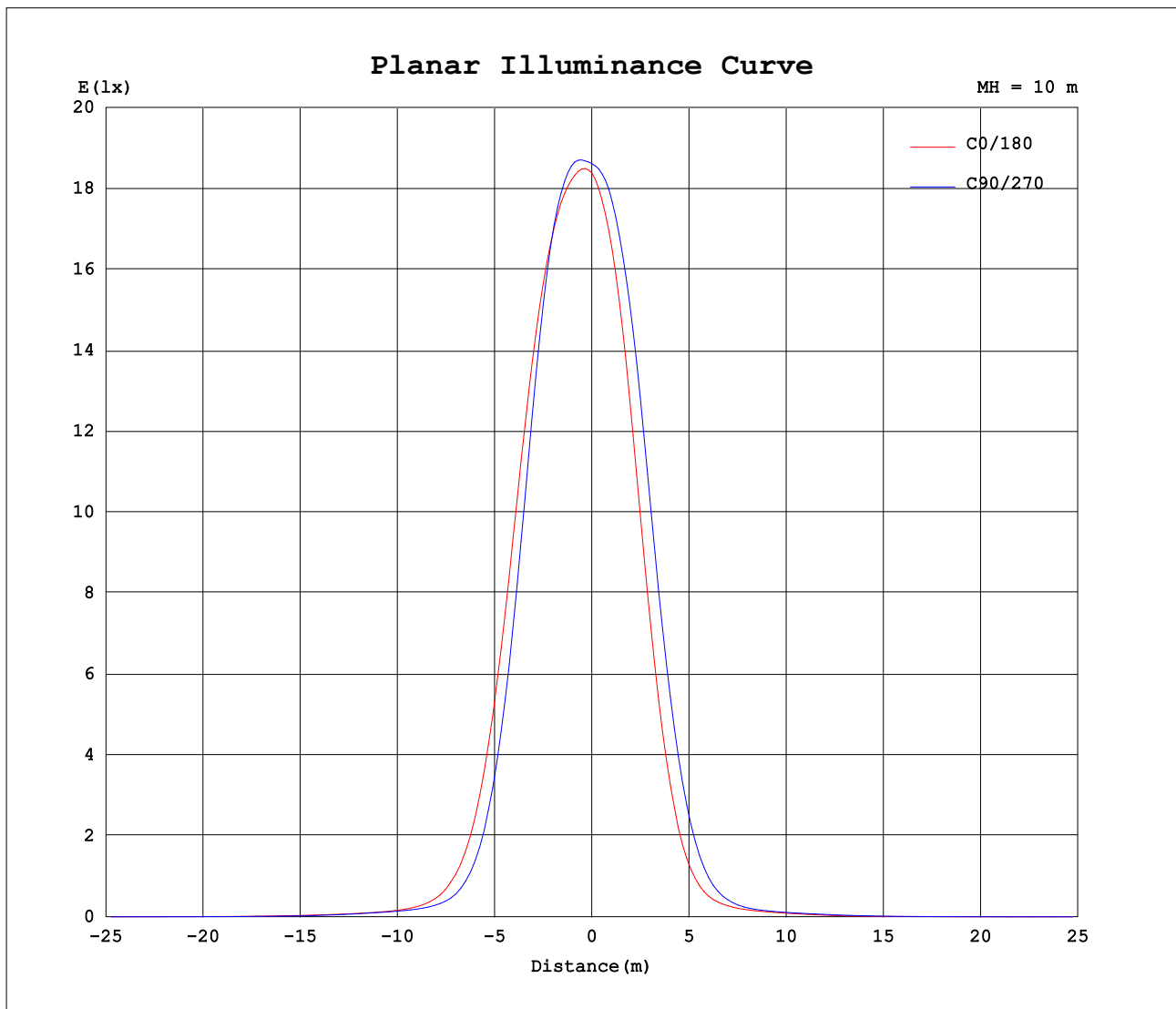
AvgL	cd/m2
L_0~180 (65) av	3256
L_0~180 (75) av	172
L_0~180 (85) av	153
L_90~270 (65) av	2606
L_90~270 (75) av	126
L_90~270 (85) av	102
L_45 (65) av	2673
L_45 (75) av	134
L_45 (85) av	116

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:Xie Bi
 Test Date:2020-07-02

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.362
 Humidity:65.0%
 Test Distance:6.900m [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: 2020-07-02

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.362
Humidity: 65.0%
Test Distance: 6.900m [K=1.0000]
Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:220.7V I:0.0607A P:12.46W PF:0.9307 Freq:59.98Hz Lamp Flux:921.169x1 lm		
NAME: 2161LED	TYPE:	WEIGHT:
SPEC.:P-2161LED-12W3040-CI35031R90-OS700	DIM.:	SERIAL No.:
MFR.: CETTIGA	SUR.:	Shielding Angle:

Table--1

UNIT: cd

C (DEG) γ (DEG)	0	90	180	270															
0	1838	1861	1838	1861															
5	1854	1887	1715	1818															
10	1817	1835	1436	1654															
15	1676	1590	993	1321															
20	1358	1119	551	858															
25	890	616	240	448															
30	460	264	95.9	188															
35	191	102	49.3	76.1															
40	79.8	54.0	33.6	41.4															
45	45.6	39.3	25.4	30.9															
50	32.7	29.7	15.7	22.4															
55	22.6	17.0	6.98	11.7															
60	11.3	7.21	3.03	5.09															
65	5.05	2.74	0.35	1.58															
70	1.58	0.32	0.05	0.15															
75	0.16	0.03	0.01	0.09															
80	0.09	0.01	0.01	0.06															
85	0.04	0.01	0.01	0.03															
90	0.01	0.01	0.01	0.02															
95	0.01	0.01	0.01	0.01															
100	0.01	0.01	0.02	0.01															
105	0.01	0.01	0.03	0.02															
110	0.01	0.02	0.04	0.02															
115	0.01	0.04	0.05	0.02															
120	0.02	0.05	0.08	0.02															
125	0.02	0.09	0.10	0.03															
130	0.03	0.15	0.17	0.09															
135	0.12	0.29	0.31	0.15															
140	0.30	0.59	0.58	0.35															
145	0.64	1.05	0.99	0.67															
150	1.14	1.62	1.48	1.13															
155	1.75	2.22	1.97	1.64															
160	2.31	2.76	2.41	2.08															
165	2.79	3.20	2.80	2.42															
170	3.20	3.59	3.24	2.83															
175	3.60	3.88	3.66	3.38															
180	3.81	3.92	3.83	3.89															

C Range: 0 - 360DEG
 C Interval: 90.0DEG
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γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.362
 Humidity:65.0%
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 Remarks: