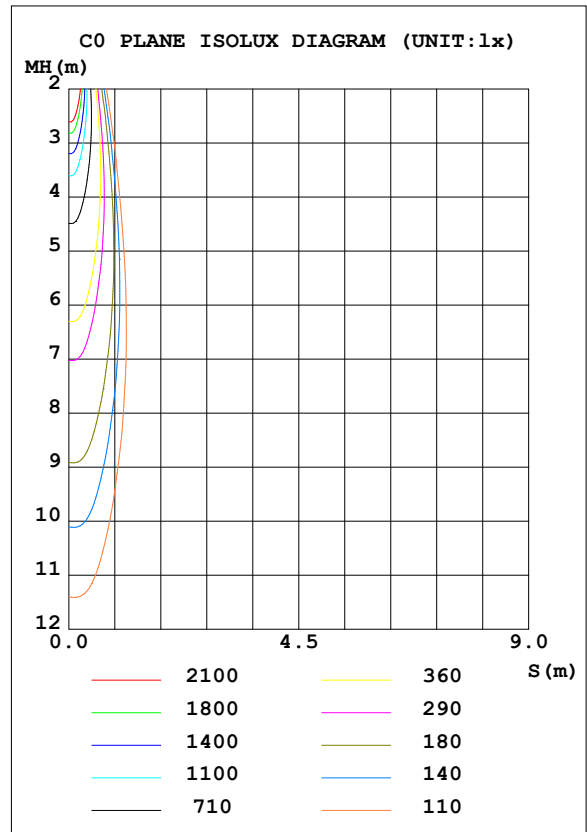
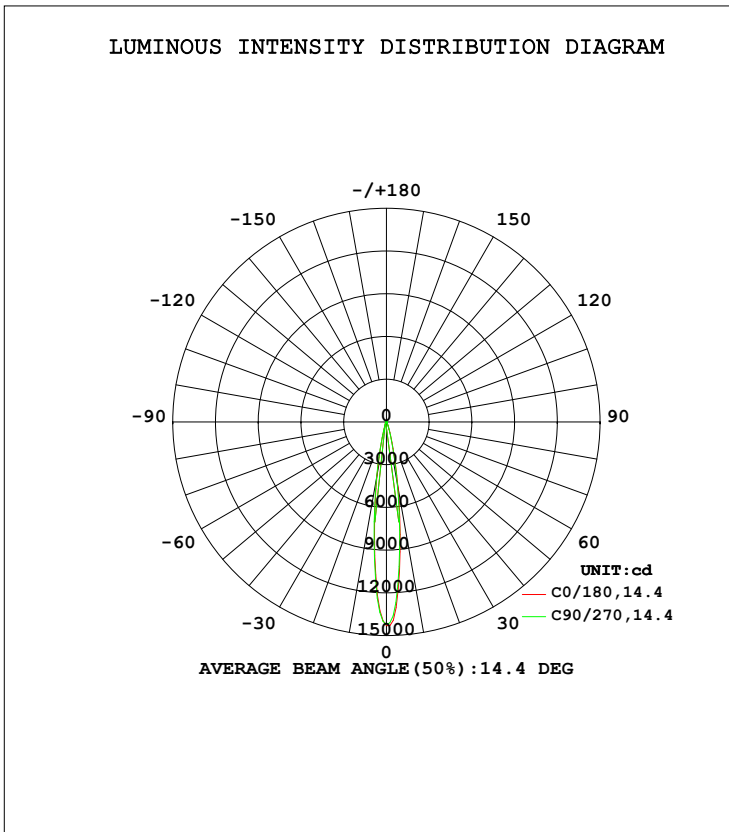


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:220.8V I:0.0994A P:20.87W PF:0.9511 Freq:59.98Hz Lamp Flux:1967x1 lm		
NAME: 11163LED	TYPE:	WEIGHT:
SPEC.:P-11163LED-20W3015-CI50037R90-LDK700	DIM.:	SERIAL No.:
MFR.: CETTIGA	SUR.:0.0007	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 63.08 lm/W			
MODEL	CLU711	I _{max} (cd)	14298	S/MH (C0/180)	0.23
NOMINAL POWER (W)	20	LOR (%)	66.9	S/MH (C90/270)	0.24
RATED VOLTAGE (V)	220.0	TOTAL FLUX (lm)	1316.6	η UP, DN (C0-180)	0.0,35.6
NOMINAL FLUX (lm)	1967	CIE CLASS	DIRECT	η UP, DN (C180-360)	0.0,31.4
LAMPS INSIDE	1	η up (%)	0.0	CIBSE SHR NOM	0.00
TEST VOLTAGE (V)	220.2	η down (%)	66.9	CIBSE SHR MAX	1.00



C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:XIE BI
 Test Date:2018-09-02

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.362
 Humidity:65.0%
 Test Distance:6.800m [K=1.0000]
 Remarks:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

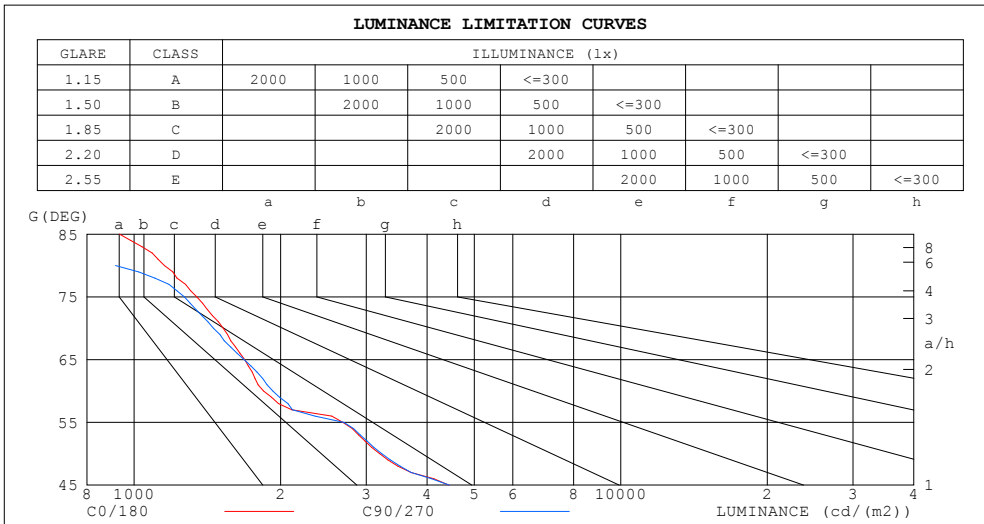
γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum, lamp
10	468.2	489.8	442.6	409.2	382.0	360.4	399.6	435.9	0- 10	757.5	757.5	57.5,38.5
20	55.05	59.25	53.54	45.43	40.26	37.82	41.59	46.89	10- 20	423.0	1181	89.7,60
30	9.480	9.943	9.047	8.161	7.732	7.418	7.961	8.712	20- 30	98.55	1279	97.2,65
40	1.586	1.632	1.543	1.533	1.536	1.429	1.519	1.565	30- 40	25.11	1304	99.1,66.3
50	0.4933	0.5233	0.4981	0.5398	0.5565	0.5028	0.4713	0.5015	40- 50	6.394	1311	99.5,66.6
60	0.2214	0.2217	0.2313	0.2347	0.2429	0.2304	0.2173	0.2196	50- 60	3.251	1314	99.8,66.8
70	0.1252	0.1216	0.1195	0.1216	0.1294	0.1269	0.1203	0.1225	60- 70	1.716	1316	99.9,66.9
80	0.0481	0.0407	0.0382	0.0389	0.0463	0.0468	0.0394	0.0446	70- 80	0.8542	1316	100,66.9
90	0	0	0	0	0	0	0	0	80- 90	0.1475	1317	100,66.9
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:×10cd									UNIT:lm		

C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:XIE BI
 Test Date:2018-09-02

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.362
 Humidity:65.0%
 Test Distance:6.800m [K=1.0000]
 Remarks:

LUMINANCE LIMITATION CURVES

Test:U:220.8V I:0.0994A P:20.87W PF:0.9511 Freq:59.98Hz Lamp Flux:1967x1 lm		
NAME: 11163LED	TYPE:	WEIGHT:
SPEC.:P-11163LED-20W3015-CI50037R90-LDK700	DIM.:	SERIAL No.:
MFR.: CETTIGA	SUR.:0.0007	Shielding Angle:



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	934	65
80	1155	916
75	1346	1269
70	1525	1456
65	1687	1683
60	1845	1928
55	2684	2697
50	3198	3229
45	4431	4441

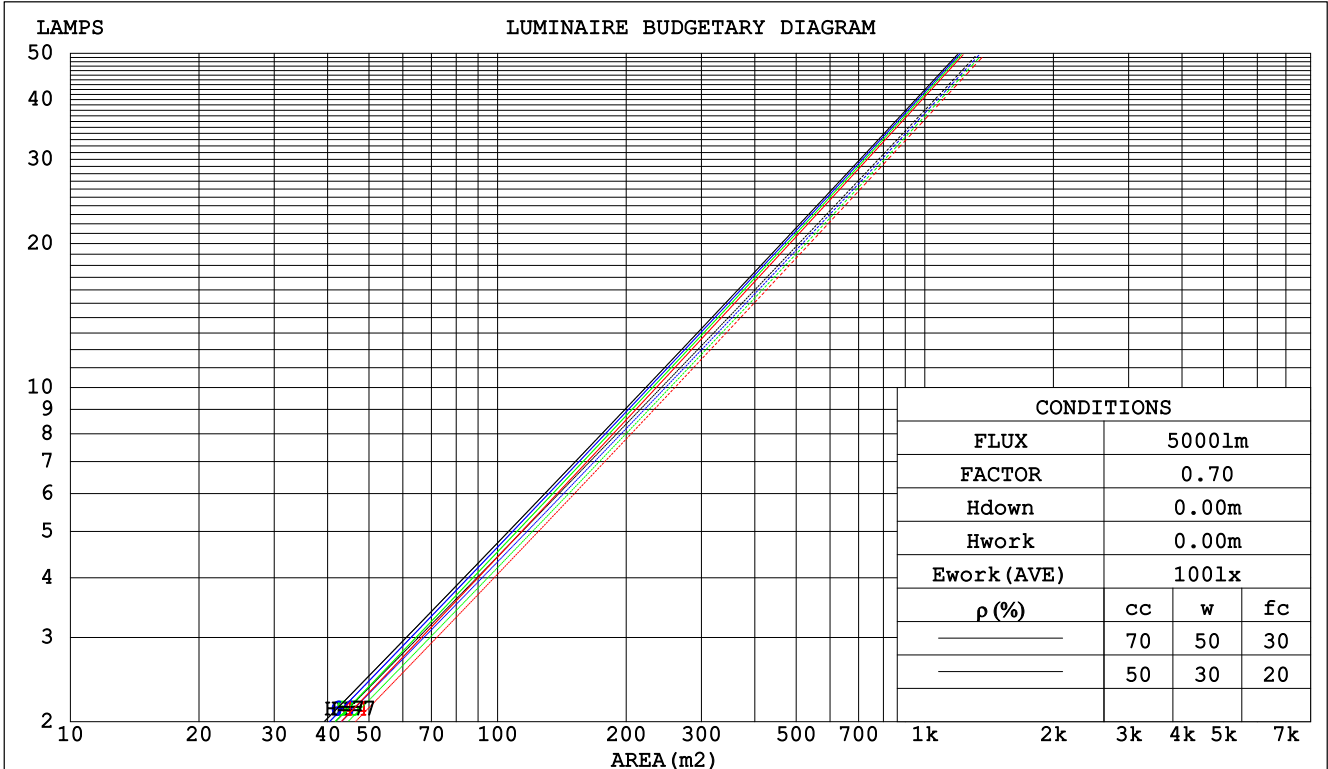
C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:XIE BI
 Test Date:2018-09-02

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.362
 Humidity:65.0%
 Test Distance:6.800m [K=1.0000]
 Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:220.8V I:0.0994A P:20.87W PF:0.9511 Freq:59.98Hz Lamp Flux:1967x1 lm		
NAME: 11163LED	TYPE:	WEIGHT:
SPEC.:P-11163LED-20W3015-CI50037R90-LDK700	DIM.:	SERIAL No.:
MFR.: CETTIGA	SUR.:0.0007	Shielding Angle:

ρcc	80%			70%			50%			30%			10%			0
	ρw	ρfc	RCR	ρw	ρfc	RCR	ρw	ρfc	RCR	ρw	ρfc	RCR	ρw	ρfc	RCR	ρ
	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
	20%			20%			20%			20%			20%			0
	RCR:Room Cavity Ratio			Coefficients of Utilization(CU)												
0.0	.80	.80	.80	.78	.78	.78	.74	.74	.74	.71	.71	.71	.68	.68	.68	.67
1.0	.76	.75	.74	.75	.74	.73	.72	.71	.71	.70	.69	.69	.67	.67	.67	.65
2.0	.73	.71	.70	.72	.71	.69	.70	.69	.68	.68	.67	.66	.66	.66	.65	.64
3.0	.71	.69	.67	.70	.68	.67	.68	.67	.66	.67	.66	.65	.65	.64	.64	.63
4.0	.69	.66	.65	.68	.66	.64	.67	.65	.64	.66	.64	.63	.64	.63	.62	.62
5.0	.67	.65	.63	.66	.64	.63	.65	.63	.62	.64	.63	.62	.63	.62	.61	.60
6.0	.65	.63	.61	.65	.63	.61	.64	.62	.61	.63	.62	.60	.62	.61	.60	.59
7.0	.64	.62	.60	.63	.61	.60	.63	.61	.59	.62	.60	.59	.61	.60	.59	.58
8.0	.62	.60	.59	.62	.60	.59	.62	.60	.58	.61	.59	.58	.61	.59	.58	.57
9.0	.61	.59	.58	.61	.59	.58	.61	.59	.57	.60	.58	.57	.60	.58	.57	.57
10.0	.60	.58	.57	.60	.58	.57	.60	.58	.56	.59	.58	.56	.59	.57	.56	.56



C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:XIE BI
 Test Date:2018-09-02

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.362
 Humidity:65.0%
 Test Distance:6.800m [K=1.0000]
 Remarks:

WEC AND CCEC

Test:U:220.8V I:0.0994A P:20.87W PF:0.9511 Freq:59.98Hz Lamp Flux:1967x1 lm		
NAME: 11163LED	TYPE:	WEIGHT:
SPEC.:P-11163LED-20W3015-CI50037R90-LDK700	DIM.:	SERIAL No.:
MFR.: CETTIGA	SUR.:0.0007	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	RCR:Room Cavity Ratio						Wall Exitance Coefficients(WEC)									
0.0																
1.0	.081	.046	.015	.076	.043	.014	.068	.039	.012	.060	.035	.011	.053	.031	.010	
2.0	.074	.040	.012	.070	.039	.012	.063	.035	.011	.057	.032	.010	.051	.029	.009	
3.0	.068	.036	.011	.065	.035	.010	.059	.032	.010	.054	.030	.009	.049	.027	.008	
4.0	.063	.033	.010	.060	.031	.009	.056	.029	.009	.051	.027	.008	.047	.026	.008	
5.0	.058	.030	.009	.056	.029	.008	.052	.027	.008	.049	.026	.008	.045	.024	.007	
6.0	.055	.027	.008	.053	.027	.008	.050	.025	.007	.046	.024	.007	.044	.023	.007	
7.0	.051	.025	.007	.050	.025	.007	.047	.024	.007	.044	.023	.007	.042	.022	.006	
8.0	.049	.024	.007	.047	.023	.007	.045	.022	.006	.043	.022	.006	.040	.021	.006	
9.0	.046	.022	.006	.045	.022	.006	.043	.021	.006	.041	.020	.006	.039	.020	.006	
10.0	.044	.021	.006	.043	.021	.006	.041	.020	.006	.039	.019	.006	.038	.019	.005	

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	RCR:Room Cavity Ratio						Ceiling Cavity Exitance Coefficients(CCEC)									
0.0	.127	.127	.127	.109	.109	.109	.074	.074	.074	.043	.043	.043	.014	.014	.014	
1.0	.112	.106	.100	.096	.091	.086	.065	.062	.059	.038	.036	.035	.012	.012	.011	
2.0	.099	.089	.080	.085	.077	.069	.058	.053	.048	.034	.031	.028	.011	.010	.009	
3.0	.088	.076	.066	.076	.065	.057	.052	.045	.040	.030	.027	.024	.010	.009	.008	
4.0	.079	.065	.055	.068	.056	.047	.047	.039	.033	.027	.023	.020	.009	.007	.006	
5.0	.072	.057	.046	.062	.049	.040	.042	.034	.028	.025	.020	.017	.008	.007	.006	
6.0	.065	.050	.039	.056	.043	.034	.039	.030	.024	.022	.018	.014	.007	.006	.005	
7.0	.060	.044	.033	.051	.038	.029	.036	.027	.021	.021	.016	.012	.007	.005	.004	
8.0	.055	.040	.029	.047	.034	.025	.033	.024	.018	.019	.014	.011	.006	.005	.004	
9.0	.051	.036	.025	.044	.031	.022	.030	.022	.016	.018	.013	.009	.006	.004	.003	
10.0	.048	.032	.022	.041	.028	.019	.028	.020	.014	.017	.012	.008	.005	.004	.003	

C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:XIE BI
 Test Date:2018-09-02

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.362
 Humidity:65.0%
 Test Distance:6.800m [K=1.0000]
 Remarks:

UGR(Unified Glare Rating) Table

Test:U:220.8V I:0.0994A P:20.87W PF:0.9511 Freq:59.98Hz Lamp Flux:1967x1 lm										
NAME: 11163LED					TYPE:			WEIGHT:		
SPEC.:P-11163LED-20W3015-CI50037R90-LDK700					DIM.:			SERIAL No.:		
MFR.: CETTIGA					SUR.:0.0007			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	4.4	4.9	4.5	5.0	5.2	4.2	4.8	4.4	4.9	5.0
3H	4.5	5.0	4.7	5.1	5.3	4.3	4.8	4.5	5.0	5.2
4H	4.5	5.0	4.7	5.2	5.4	4.4	4.8	4.6	5.0	5.2
6H	4.5	5.0	4.8	5.2	5.4	4.3	4.8	4.6	5.0	5.3
8H	4.5	4.9	4.8	5.2	5.4	4.3	4.8	4.6	5.0	5.2
12H	4.5	4.9	4.8	5.2	5.4	4.3	4.7	4.6	5.0	5.2
4H 2H	4.3	4.8	4.5	5.0	5.2	4.2	4.6	4.4	4.8	5.0
3H	4.4	4.9	4.7	5.1	5.4	4.3	4.7	4.6	5.0	5.2
4H	4.5	4.9	4.8	5.2	5.5	4.4	4.8	4.7	5.1	5.4
6H	4.5	4.9	4.9	5.2	5.6	4.4	4.7	4.8	5.1	5.4
8H	4.5	4.9	4.9	5.2	5.6	4.4	4.7	4.7	5.0	5.4
12H	4.5	4.8	4.9	5.2	5.6	4.3	4.6	4.7	5.0	5.4
8H 4H	4.4	4.8	4.8	5.1	5.5	4.3	4.6	4.7	5.0	5.3
6H	4.5	4.8	4.9	5.2	5.6	4.3	4.6	4.8	5.0	5.4
8H	4.5	4.8	5.0	5.2	5.6	4.3	4.6	4.8	5.0	5.4
12H	4.5	4.7	5.0	5.1	5.6	4.3	4.5	4.7	4.9	5.4
12H 4H	4.4	4.7	4.8	5.1	5.4	4.3	4.6	4.7	4.9	5.3
6H	4.5	4.7	4.9	5.1	5.6	4.3	4.5	4.7	5.0	5.4
8H	4.5	4.7	4.9	5.1	5.6	4.3	4.5	4.7	4.9	5.4
Variations with the observer position at spacings:										
S = 1.0H	+ 2.4 / - 2.6					+ 2.4 / - 2.8				
1.5H	+ 4.0 / - 2.0					+ 4.0 / - 2.0				
2.0H	+ 1.9 / - 1.3					+ 1.9 / - 1.3				

CIE Pub.117, 1967 lm Total Lamp Luminous Flux Correct (8log(F/F0) = 2.4)

C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:XIE BI
 Test Date:2018-09-02

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.362
 Humidity:65.0%
 Test Distance:6.800m [K=1.0000]
 Remarks:

UTILIZATION FACTORS TABLE

Test:U:220.8V I:0.0994A P:20.87W PF:0.9511 Freq:59.98Hz Lamp Flux:1967x1 lm		
NAME: 11163LED	TYPE:	WEIGHT:
SPEC.:P-11163LED-20W3015-CI50037R90-LDK700	DIM.:	SERIAL No.:
MFR.: CETTIGA	SUR.:0.0007	Shielding Angle:

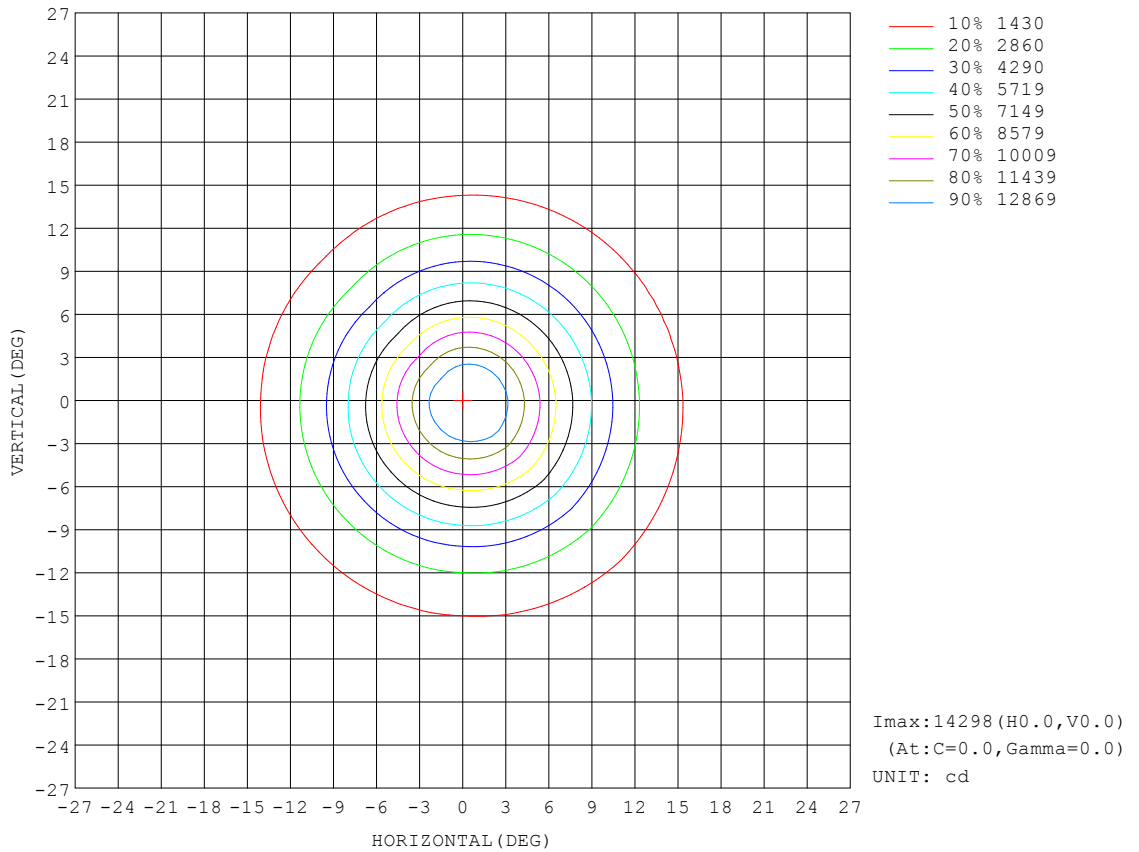
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	61	57	55	61	57	55	60	57	55	53
0.80	66	62	60	65	62	60	64	61	60	57
1.00	68	65	63	68	64	62	67	64	62	60
1.25	70	67	65	70	67	65	68	66	64	62
1.50	72	69	67	71	69	67	70	68	66	63
2.00	73	71	69	73	70	69	71	69	68	64
2.50	74	72	70	73	71	70	71	70	69	65
3.00	75	73	72	74	72	71	72	71	69	65
4.00	77	75	74	75	74	73	73	72	71	66
5.00	77	76	75	76	75	74	73	73	72	67
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004			Suspended				SHRNM = 1.25			

C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:XIE BI
 Test Date:2018-09-02

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.362
 Humidity:65.0%
 Test Distance:6.800m [K=1.0000]
 Remarks:

ISOCANDELA DIAGRAM

Test:U:220.8V I:0.0994A P:20.87W PF:0.9511 Freq:59.98Hz Lamp Flux:1967x1 lm		
NAME: 11163LED	TYPE:	WEIGHT:
SPEC.:P-11163LED-20W3015-CI50037R90-LDK700	DIM.:	SERIAL No.:
MFR.: CETTIGA	SUR.:0.0007	Shielding Angle:

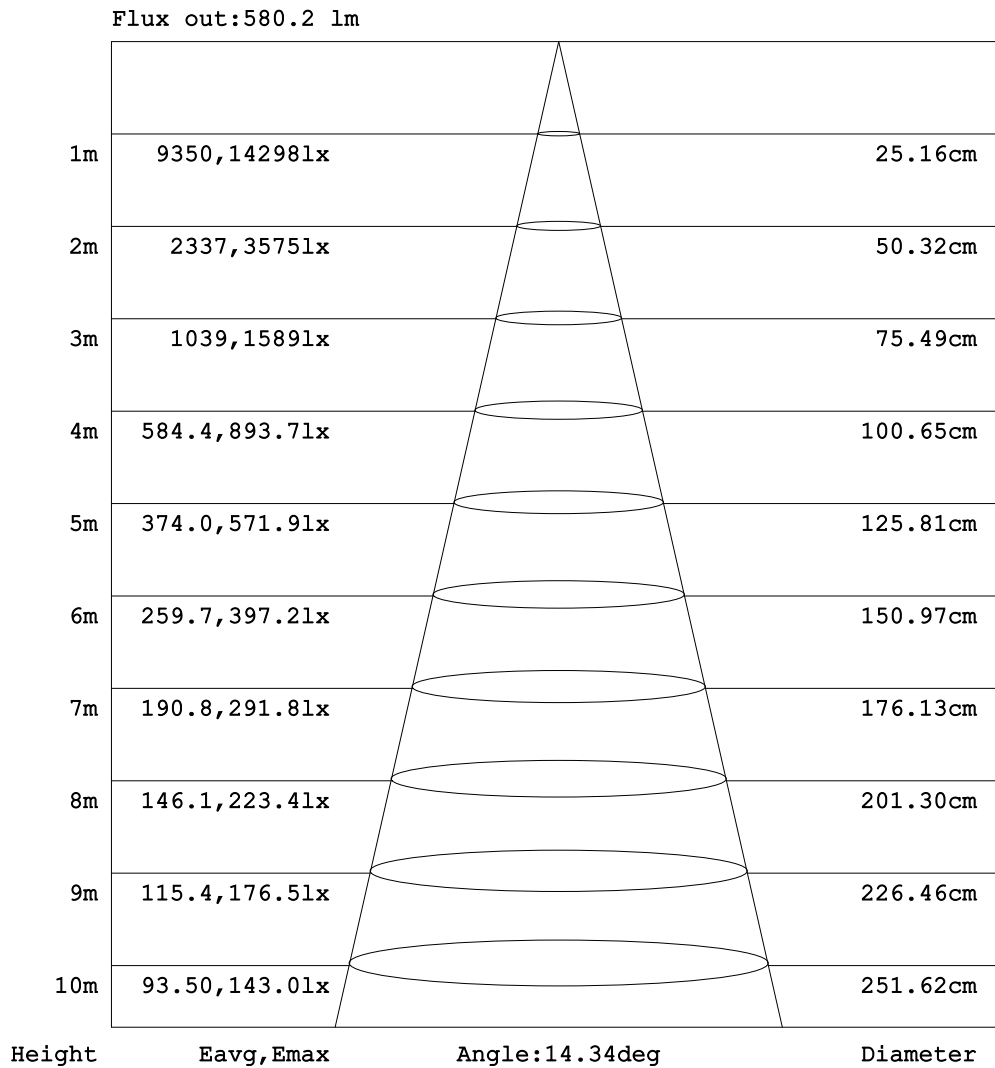


C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:XIE BI
 Test Date:2018-09-02

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.362
 Humidity:65.0%
 Test Distance:6.800m [K=1.0000]
 Remarks:

AAI Figure

Test:U:220.8V I:0.0994A P:20.87W PF:0.9511 Freq:59.98Hz Lamp Flux:1967x1 lm		
NAME: 11163LED	TYPE:	WEIGHT:
SPEC.:P-11163LED-20W3015-CI50037R90-LDK700	DIM.:	SERIAL No.:
MFR.: CETTIGA	SUR.:0.0007	Shielding Angle:



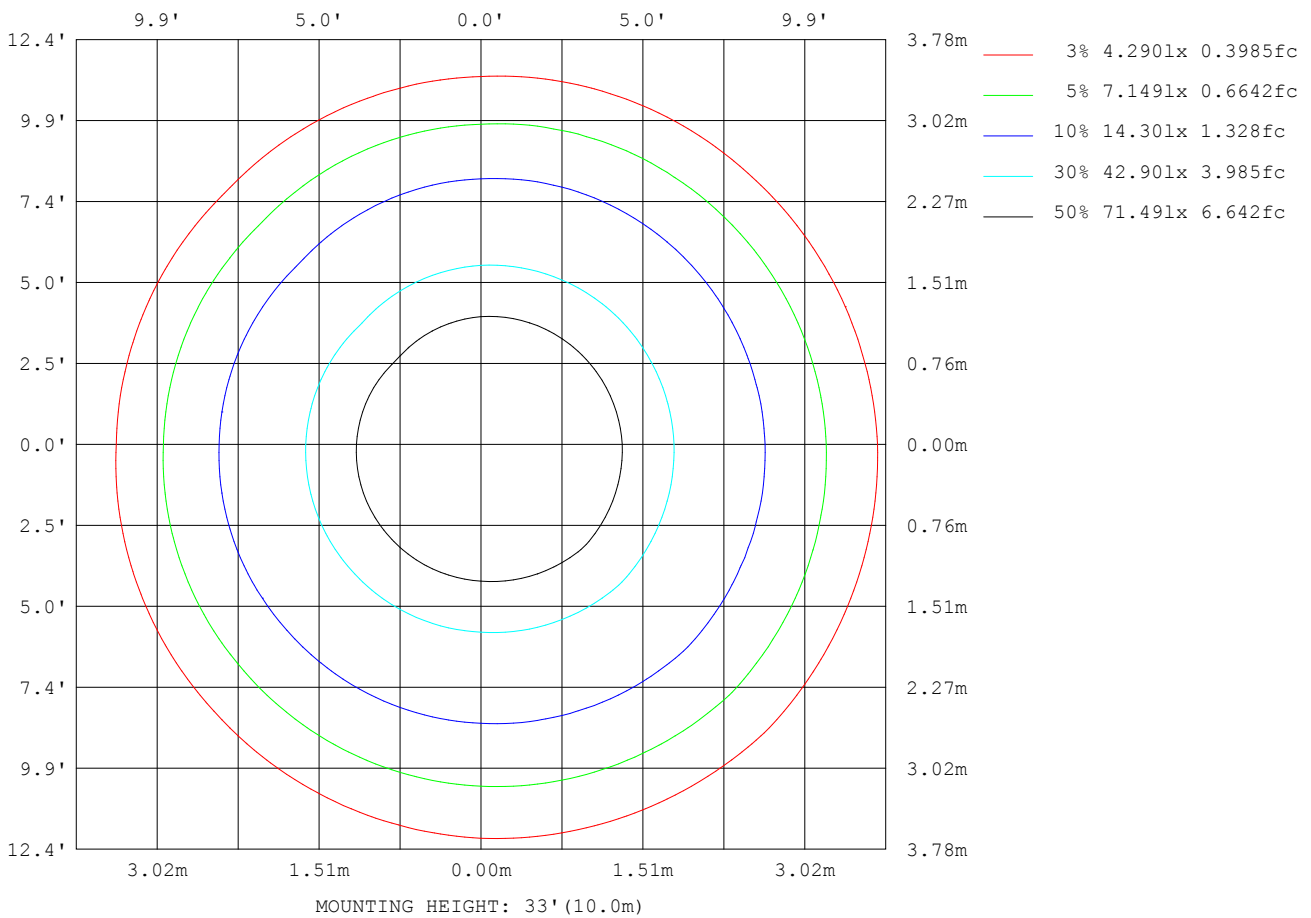
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:XIE BI
 Test Date:2018-09-02

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.362
 Humidity:65.0%
 Test Distance:6.800m [K=1.0000]
 Remarks:

ISOLUX DIAGRAM

Test:U:220.8V I:0.0994A P:20.87W PF:0.9511 Freq:59.98Hz Lamp Flux:1967x1 lm		
NAME: 11163LED	TYPE:	WEIGHT:
SPEC.:P-11163LED-20W3015-CI50037R90-LDK700	DIM.:	SERIAL No.:
MFR.: CETTIGA	SUR.:0.0007	Shielding Angle:



C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:XIE BI
 Test Date:2018-09-02

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.362
 Humidity:65.0%
 Test Distance:6.800m [K=1.0000]
 Remarks:

LED Avg.L Report

Test:U:220.8V I:0.0994A P:20.87W PF:0.9511 Freq:59.98Hz Lamp Flux:1967x1 lm		
NAME: 11163LED	TYPE:	WEIGHT:
SPEC.:P-11163LED-20W3015-CI50037R90-LDK700	DIM.:	SERIAL No.:
MFR.: CETTIGA	SUR.:0.0007	Shielding Angle:

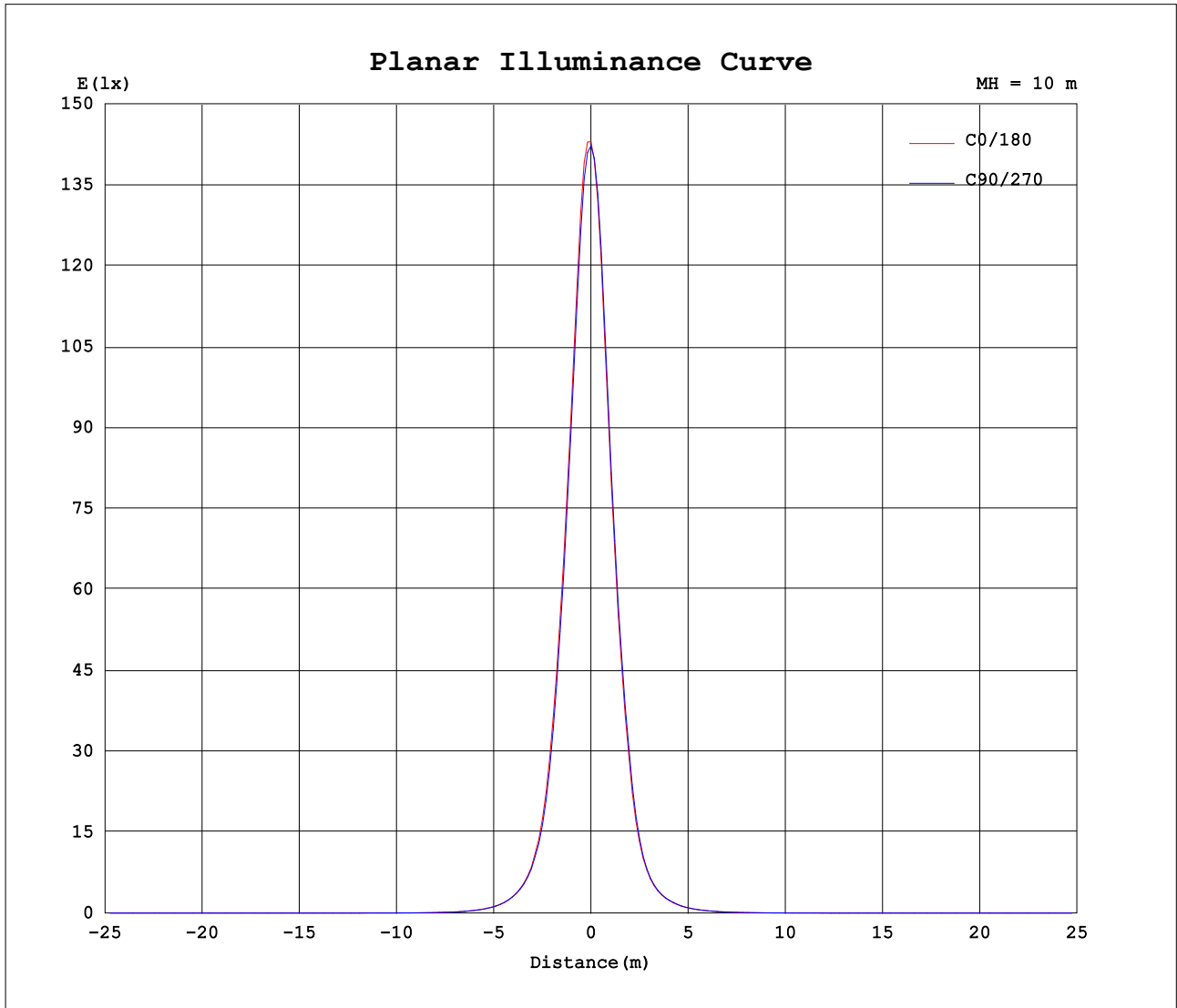
AvgL	cd/m2
L_0~180 (65) av	1753
L_0~180 (75) av	1328
L_0~180 (85) av	839
L_90~270 (65) av	1666
L_90~270 (75) av	1254
L_90~270 (85) av	125
L_45 (65) av	1707
L_45 (75) av	1286
L_45 (85) av	296

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:XIE BI
 Test Date:2018-09-02

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.362
 Humidity:65.0%
 Test Distance:6.800m [K=1.0000]
 Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: XIE BI
 Test Date: 2018-09-02

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.362
 Humidity: 65.0%
 Test Distance: 6.800m [K=1.0000]
 Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:220.8V I:0.0994A P:20.87W PF:0.9511 Freq:59.98Hz Lamp Flux:1967x1 lm		
NAME: 11163LED	TYPE:	WEIGHT:
SPEC.:P-11163LED-20W3015-CI50037R90-LDK700	DIM.:	SERIAL No.:
MFR.: CETTIGA	SUR.:0.0007	Shielding Angle:

Table--1

UNIT: x10cd

C (DEG) \ γ (DEG)	0	45	90	135	180	225	270	315											
0	1430	1424	1422	1421	1430	1424	1422	1421											
5	1053	1077	1019	977	944	909	967	1012											
10	468	490	443	409	382	360	400	436											
15	152	162	143	126	113	110	118	135											
20	55.1	59.2	53.5	45.4	40.3	37.8	41.6	46.9											
25	22.0	23.8	21.4	18.6	17.0	16.2	17.6	19.6											
30	9.48	9.94	9.05	8.16	7.73	7.42	7.96	8.71											
35	3.96	4.11	3.81	3.56	3.46	3.32	3.51	3.76											
40	1.59	1.63	1.54	1.53	1.54	1.43	1.52	1.57											
45	0.75	0.79	0.75	0.80	0.82	0.73	0.73	0.73											
50	0.49	0.52	0.50	0.54	0.56	0.50	0.47	0.50											
55	0.37	0.39	0.37	0.39	0.41	0.39	0.36	0.38											
60	0.22	0.22	0.23	0.23	0.24	0.23	0.22	0.22											
65	0.17	0.17	0.17	0.17	0.18	0.18	0.17	0.17											
70	0.13	0.12	0.12	0.12	0.13	0.13	0.12	0.12											
75	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08											
80	0.05	0.04	0.04	0.04	0.05	0.05	0.04	0.04											
85	0.02	0.00	0.00	0.00	0.02	0.01	0.00	0.01											
90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00											

C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:XIE BI
 Test Date:2018-09-02

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.362
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