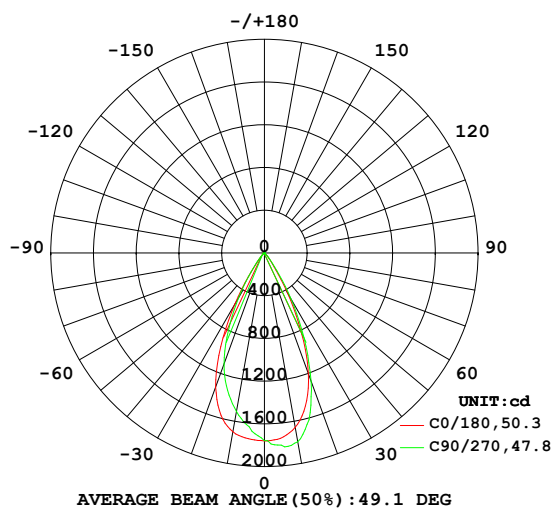


LUMINAIRE PHOTOMETRIC TEST REPORT

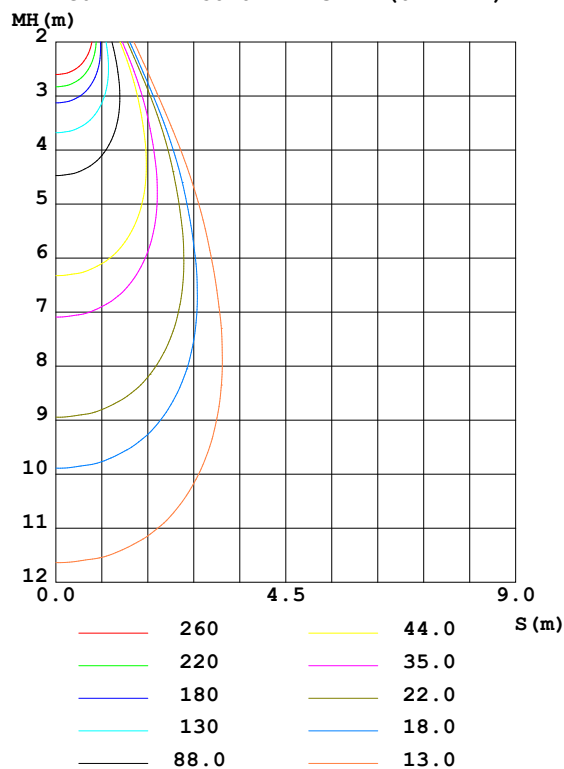
Test:U:231.2V I:0.0845A P:18.57W PF:0.9505 Freq:49.99Hz Lamp Flux:1131.74x1 lm					
NAME: W12091LED		TYPE:		WEIGHT:	
SPEC.: P-W12091LED-20W2750-RY70024R90-LDY700		DIM.:		SERIAL No.:	
MFR.: CETTIGA		SUR.:		Shielding Angle:	

DATA OF LAMP		PHOTOMETRIC DATA Eff: 60.94 lm/W			
MODEL	RY 3535	I _{max} (cd)	1826	S/MH (C0/180)	0.78
NOMINAL POWER (W)	20W	LOR (%)	100.0	S/MH (C90/270)	0.74
RATED VOLTAGE (V)	220.0	TOTAL FLUX (lm)	1131.7	η UP, DN (C0-180)	0.0, 49.7
NOMINAL FLUX (lm)	1131.74	CIE CLASS	DIRECT	η UP, DN (C180-360)	0.0, 50.3
LAMPS INSIDE	1	η up (%)	0.0	CIBSE SHR NOM	0.75
TEST VOLTAGE (V)	220.2	η down (%)	100.0	CIBSE SHR MAX	0.75

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: 2022-01-13

γ Range: 0 - 90DEG
 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:

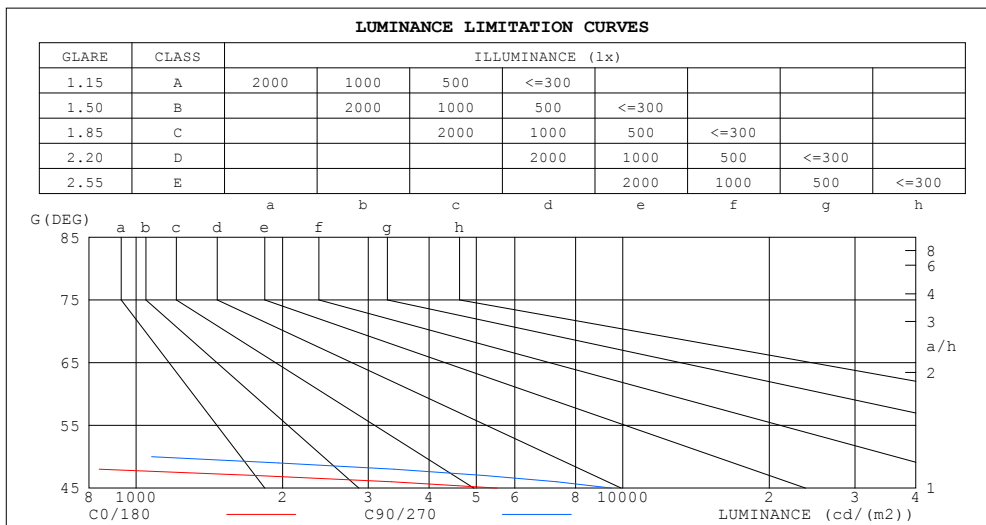
γ	C0	C90	C180	C270					γ	Φ zone	Φ total	%lum, lamp
10	1657	1795	1699	1507					0- 10	163.5	163.5	14.4,14.4
20	1204	1279	1336	1104					10- 20	413.3	576.8	51,51
30	433.1	501.7	553.3	483.4					20- 30	389.1	965.8	85.3,85.3
40	66.36	78.40	82.65	91.33					30- 40	140.4	1106	97.7,97.7
50	0.7789	3.252	1.924	4.805					40- 50	24.82	1131	99.9,99.9
60	0.1606	0.1726	0.1295	0.2244					50- 60	0.4918	1132	100,100
70	0.0846	0.0880	0.0656	0.1415					60- 70	0.1298	1132	100,100
80	0.0277	0.0293	0.0259	0.0777					70- 80	0.0704	1132	100,100
90	0	0	0.0121	0.0121					80- 90	0.0239	1132	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		

C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:Xie Bi
 Test Date:2022-01-13

γ Range: 0 - 90DEG
 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:231.2V I:0.0845A P:18.57W PF:0.9505 Freq:49.99Hz Lamp Flux:1131.74x1 lm		
NAME: W12091LED	TYPE:	WEIGHT:
SPEC.: P-W12091LED-20W2750-RY70024R90-LDY700	DIM.:	SERIAL No.:
MFR.: CETTIGA	SUR.:	Shielding Angle:



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	25	25
80	34	36
75	44	48
70	53	55
65	59	65
60	68	73
55	72	108
50	258	1076
45	5517	9478

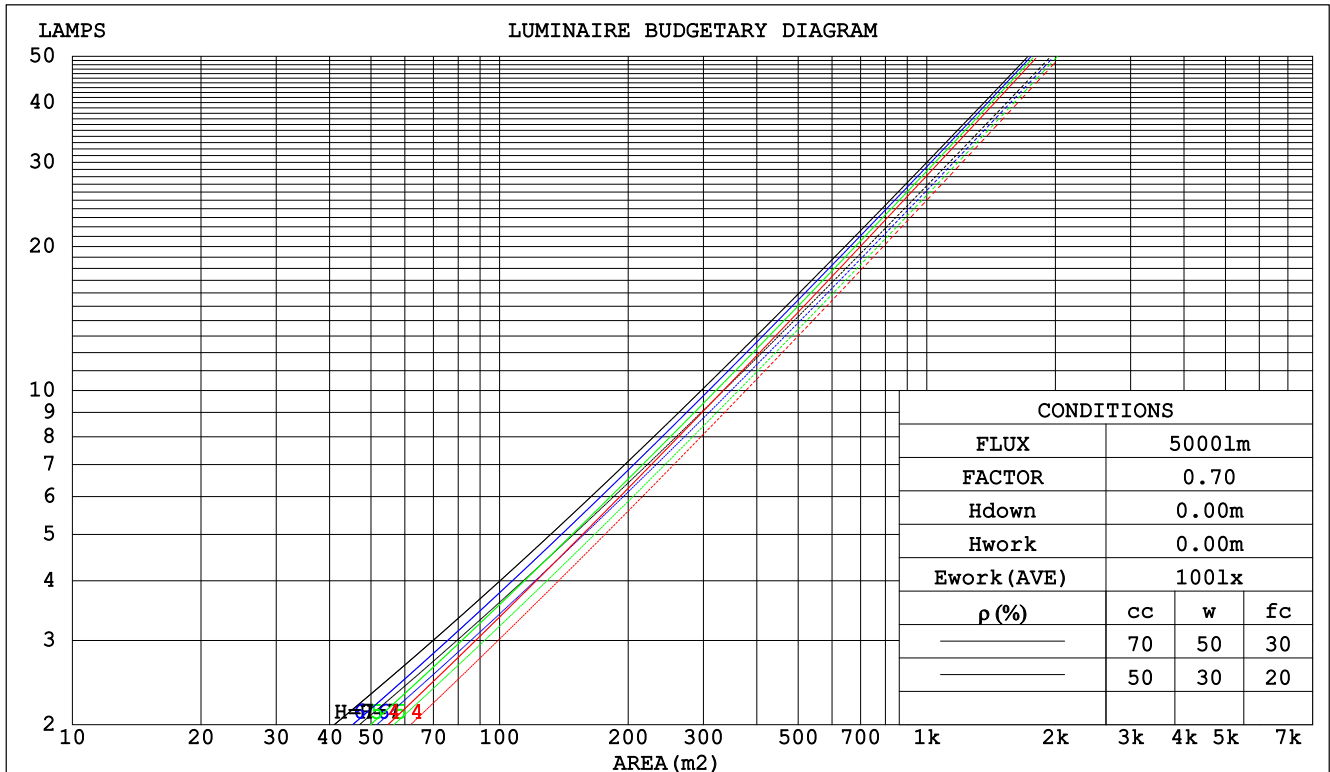
C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: Xie Bi
Test Date: 2022-01-13

γ Range: 0 - 90DEG
 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:231.2V I:0.0845A P:18.57W PF:0.9505 Freq:49.99Hz Lamp Flux:1131.74x1 lm		
NAME: W12091LED	TYPE:	WEIGHT:
SPEC.:P-W12091LED-20W2750-RY70024R90-LDY700	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	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	1.12	1.09	1.07	1.09	1.07	1.06	1.05	1.04	1.02	1.02	1.00	.99	.98	.97	.96	.95
2.0	1.05	1.01	.98	1.03	.99	.97	.99	.97	.95	.97	.95	.93	.94	.93	.91	.89
3.0	.99	.94	.91	.97	.93	.90	.95	.91	.89	.93	.90	.87	.90	.88	.86	.85
4.0	.93	.88	.85	.92	.88	.84	.90	.86	.83	.88	.85	.82	.86	.84	.81	.80
5.0	.88	.83	.79	.87	.83	.79	.86	.81	.78	.84	.80	.78	.83	.79	.77	.76
6.0	.84	.78	.75	.83	.78	.74	.82	.77	.74	.80	.76	.73	.79	.76	.73	.72
7.0	.80	.74	.70	.79	.74	.70	.78	.73	.70	.77	.73	.70	.75	.72	.69	.68
8.0	.76	.70	.67	.75	.70	.67	.74	.70	.66	.73	.69	.66	.72	.68	.66	.64
9.0	.72	.67	.63	.72	.67	.63	.71	.66	.63	.70	.66	.63	.69	.65	.63	.61
10.0	.69	.64	.60	.68	.63	.60	.68	.63	.60	.67	.63	.60	.66	.62	.60	.58



C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:Xie Bi
 Test Date:2022-01-13

γ Range: 0 - 90DEG
 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:231.2V I:0.0845A P:18.57W PF:0.9505 Freq:49.99Hz Lamp Flux:1131.74x1 lm		
NAME: W12091LED	TYPE:	WEIGHT:
SPEC.:P-W12091LED-20W2750-RY70024R90-LDY700	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	.162	.092	.029	.155	.088	.028	.143	.082	.026	.131	.076	.024	.120	.070	.023		
2.0	.153	.084	.026	.148	.081	.025	.137	.076	.024	.128	.072	.022	.119	.067	.021		
3.0	.145	.077	.023	.141	.075	.023	.132	.071	.022	.124	.068	.021	.116	.064	.020		
4.0	.138	.072	.021	.134	.070	.021	.127	.067	.020	.120	.064	.019	.113	.061	.019		
5.0	.132	.067	.019	.128	.066	.019	.122	.063	.019	.116	.061	.018	.110	.059	.018		
6.0	.126	.063	.018	.123	.062	.018	.117	.060	.017	.112	.058	.017	.107	.056	.017		
7.0	.121	.060	.017	.118	.059	.017	.113	.057	.016	.108	.055	.016	.104	.054	.016		
8.0	.116	.056	.016	.113	.056	.016	.109	.054	.016	.104	.053	.015	.101	.052	.015		
9.0	.111	.054	.015	.109	.053	.015	.105	.052	.015	.101	.051	.015	.098	.050	.014		
10.0	.107	.051	.014	.105	.051	.014	.101	.050	.014	.098	.049	.014	.095	.048	.014		

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	.170	.157	.146	.146	.135	.126	.100	.093	.087	.057	.054	.051	.018	.017	.016	
2.0	.154	.133	.115	.132	.114	.099	.090	.079	.069	.052	.046	.041	.017	.015	.013	
3.0	.140	.113	.092	.120	.098	.080	.083	.068	.056	.048	.040	.033	.015	.013	.011	
4.0	.130	.099	.075	.111	.085	.065	.076	.059	.046	.044	.035	.027	.014	.011	.009	
5.0	.120	.087	.062	.103	.075	.054	.071	.052	.038	.041	.031	.023	.013	.010	.007	
6.0	.113	.077	.052	.097	.067	.045	.067	.047	.032	.039	.028	.019	.012	.009	.006	
7.0	.106	.069	.044	.091	.060	.038	.063	.042	.027	.037	.025	.016	.012	.008	.005	
8.0	.100	.063	.038	.086	.055	.033	.060	.038	.023	.035	.023	.014	.011	.007	.005	
9.0	.095	.058	.033	.082	.050	.028	.057	.035	.020	.033	.021	.012	.011	.007	.004	
10.0	.090	.053	.029	.078	.046	.025	.054	.033	.018	.032	.019	.011	.010	.006	.004	

C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:Xie Bi
 Test Date:2022-01-13

γ Range: 0 - 90DEG
 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:231.2V I:0.0845A P:18.57W PF:0.9505 Freq:49.99Hz Lamp Flux:1131.74x1 lm											
NAME: W12091LED					TYPE:			WEIGHT:			
SPEC.:P-W12091LED-20W2750-RY70024R90-LDY700					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		13.9	14.7	14.1	14.9	15.0	15.0	15.8	15.2	16.0	16.2
	3H	13.7	14.5	14.0	14.7	14.9	14.8	15.6	15.1	15.8	16.0
	4H	13.6	14.4	13.9	14.6	14.8	14.7	15.5	15.0	15.7	15.9
	6H	13.5	14.2	13.8	14.5	14.7	14.7	15.3	14.9	15.6	15.8
	8H	13.5	14.2	13.8	14.4	14.7	14.6	15.3	14.9	15.5	15.8
	12H	13.5	14.1	13.8	14.4	14.6	14.6	15.2	14.9	15.5	15.7
4H	2H	13.6	14.4	13.9	14.6	14.8	14.7	15.5	15.0	15.7	15.9
	3H	13.5	14.1	13.8	14.4	14.6	14.6	15.2	14.9	15.5	15.7
	4H	13.4	13.9	13.7	14.2	14.5	14.5	15.0	14.8	15.3	15.6
	6H	13.3	13.8	13.6	14.1	14.4	14.4	14.9	14.7	15.2	15.6
	8H	13.2	13.7	13.6	14.0	14.4	14.3	14.8	14.7	15.1	15.5
	12H	13.2	13.6	13.6	14.0	14.3	14.3	14.7	14.7	15.1	15.5
8H	4H	13.2	13.7	13.6	14.0	14.4	14.3	14.8	14.7	15.1	15.5
	6H	13.1	13.5	13.5	13.9	14.3	14.2	14.6	14.6	15.0	15.4
	8H	13.0	13.4	13.5	13.8	14.2	14.2	14.5	14.6	14.9	15.4
	12H	13.0	13.3	13.5	13.7	14.2	14.1	14.4	14.6	14.8	15.3
12H	4H	13.2	13.6	13.6	14.0	14.3	14.3	14.7	14.7	15.1	15.5
	6H	13.0	13.4	13.5	13.8	14.2	14.2	14.5	14.6	14.9	15.4
	8H	13.0	13.3	13.5	13.7	14.2	14.1	14.4	14.6	14.8	15.3
Variations with the observer position at spacings:											
S = 1.0H	+ 3.5 / -29.0					+ 3.9 / -29.4					
1.5H	+ 6.1 / -28.3					+ 6.4 / -28.9					
2.0H	+ 9.0 / -17.9					+ 9.1 / -21.2					

CIE Pub.117, 1132 lm Total Lamp Luminous Flux Correct (8log(F/F0) = 0.4)

C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Xie Bi
Test Date:2022-01-13

γ Range: 0 - 90DEG
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:231.2V I:0.0845A P:18.57W PF:0.9505 Freq:49.99Hz Lamp Flux:1131.74x1 lm		
NAME: W12091LED	TYPE:	WEIGHT:
SPEC.:P-W12091LED-20W2750-RY70024R90-LDY700	DIM.:	SERIAL No.:
MFR.: CETTIGA	SUR.:	Shielding Angle:

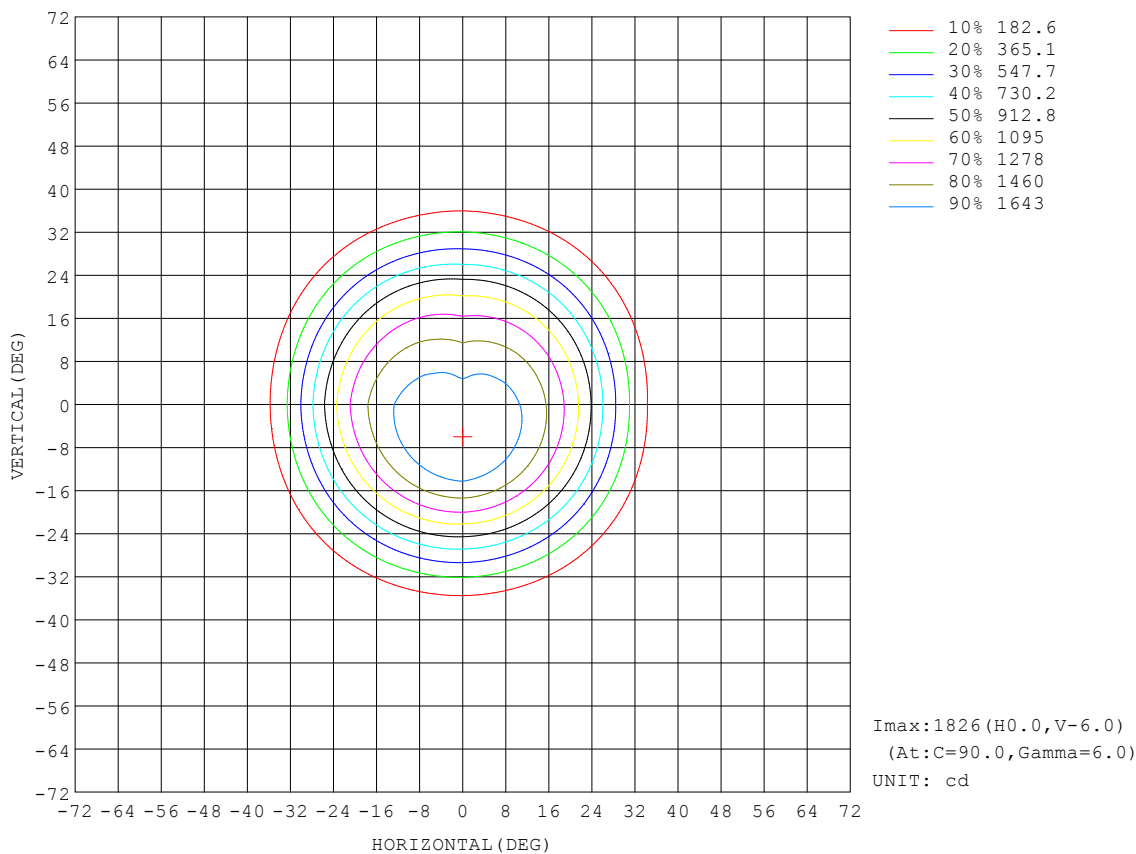
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	90	84	81	90	84	81	89	84	81	77
0.80	97	92	89	97	92	88	95	91	88	85
1.00	101	96	93	100	96	93	99	95	92	88
1.25	105	100	97	104	100	97	102	98	96	92
1.50	107	103	100	106	102	100	104	101	98	94
2.00	110	106	103	108	105	102	106	103	101	96
2.50	111	108	105	110	106	104	107	104	102	96
3.00	112	109	107	111	108	106	107	105	104	97
4.00	114	112	110	112	110	108	109	107	106	99
5.00	116	114	112	113	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:2022-01-13

γ Range: 0 - 90DEG
 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:231.2V I:0.0845A P:18.57W PF:0.9505 Freq:49.99Hz Lamp Flux:1131.74x1 lm		
NAME: W12091LED	TYPE:	WEIGHT:
SPEC.: P-W12091LED-20W2750-RY70024R90-LDY700	DIM.:	SERIAL No.:
MFR.: CETTIGA	SUR.:	Shielding Angle:

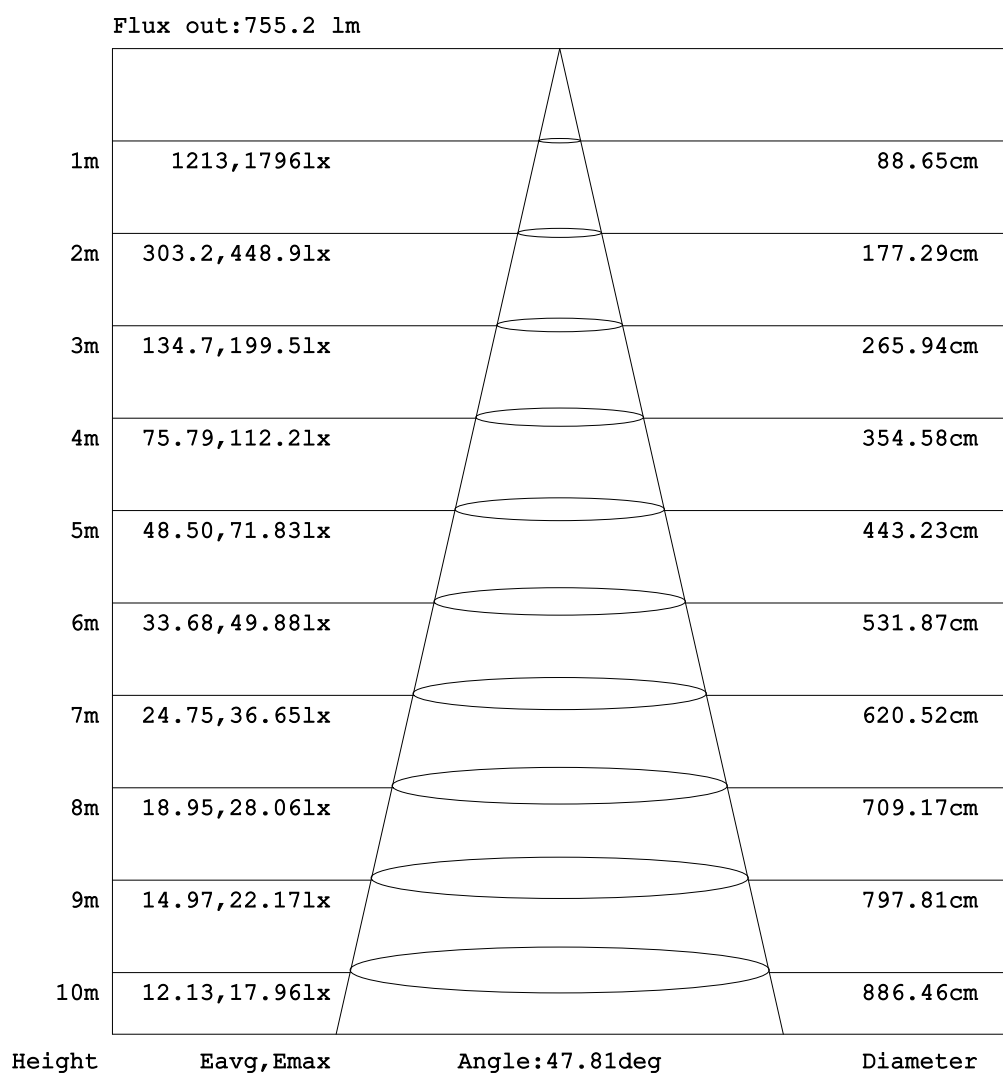


C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Xie Bi
Test Date:2022-01-13

γ Range: 0 - 90DEG
 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:231.2V I:0.0845A P:18.57W PF:0.9505 Freq:49.99Hz Lamp Flux:1131.74x1 lm		
NAME: W12091LED	TYPE:	WEIGHT:
SPEC.:P-W12091LED-20W2750-RY70024R90-LDY700	DIM.:	SERIAL No.:
MFR.: CETTIGA	SUR.:	Shielding Angle:



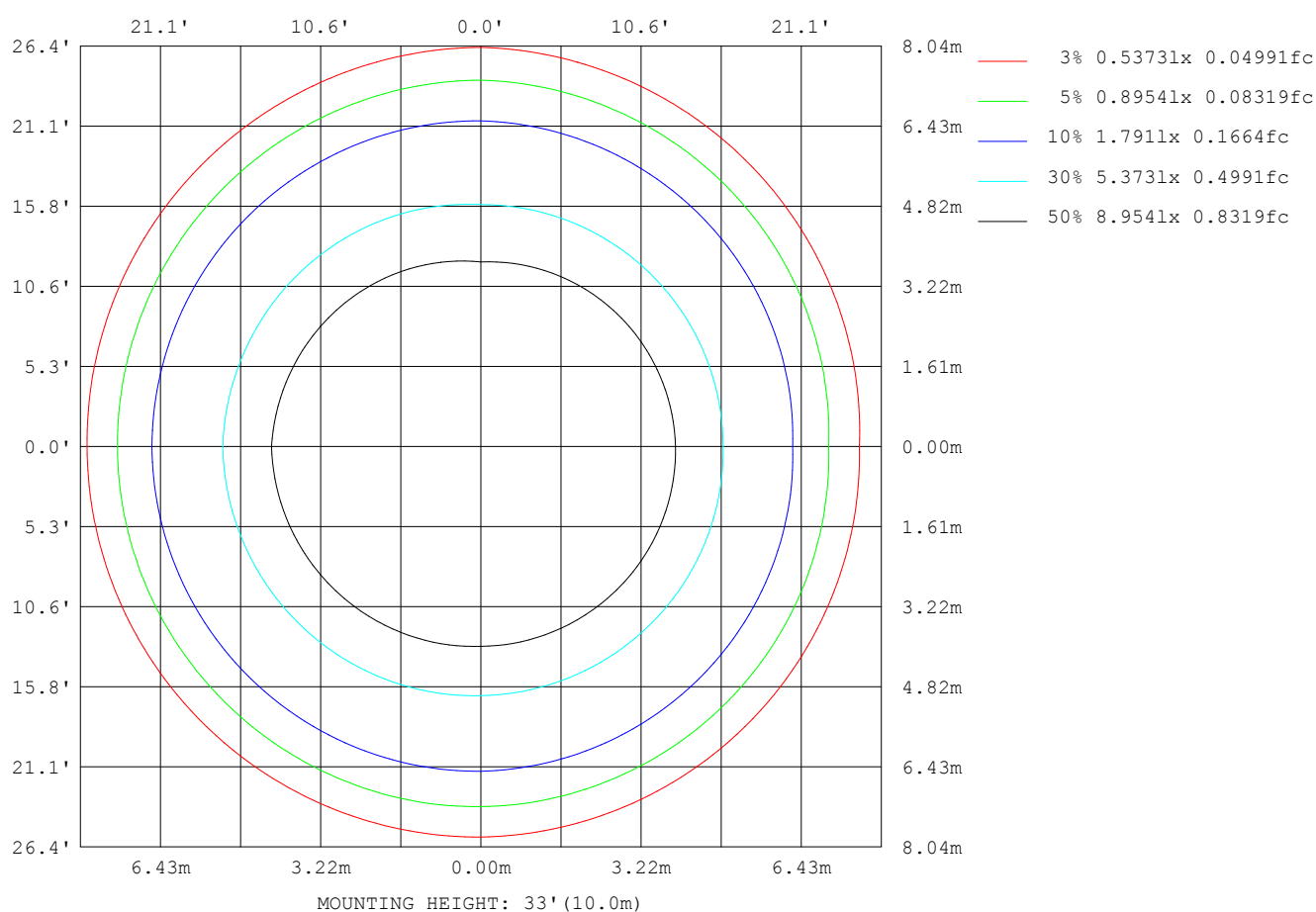
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: Xie Bi
 Test Date: 2022-01-13

γ Range: 0 - 90DEG
 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:231.2V I:0.0845A P:18.57W PF:0.9505 Freq:49.99Hz Lamp Flux:1131.74x1 lm		
NAME: W12091LED	TYPE:	WEIGHT:
SPEC.: P-W12091LED-20W2750-RY70024R90-LDY700	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: 2022-01-13

γ Range: 0 - 90DEG
 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:231.2V I:0.0845A P:18.57W PF:0.9505 Freq:49.99Hz Lamp Flux:1131.74x1 lm		
NAME: W12091LED	TYPE:	WEIGHT:
SPEC.:P-W12091LED-20W2750-RY70024R90-LDY700	DIM.:	SERIAL No.:
MFR.: CETTIGA	SUR.:	Shielding Angle:

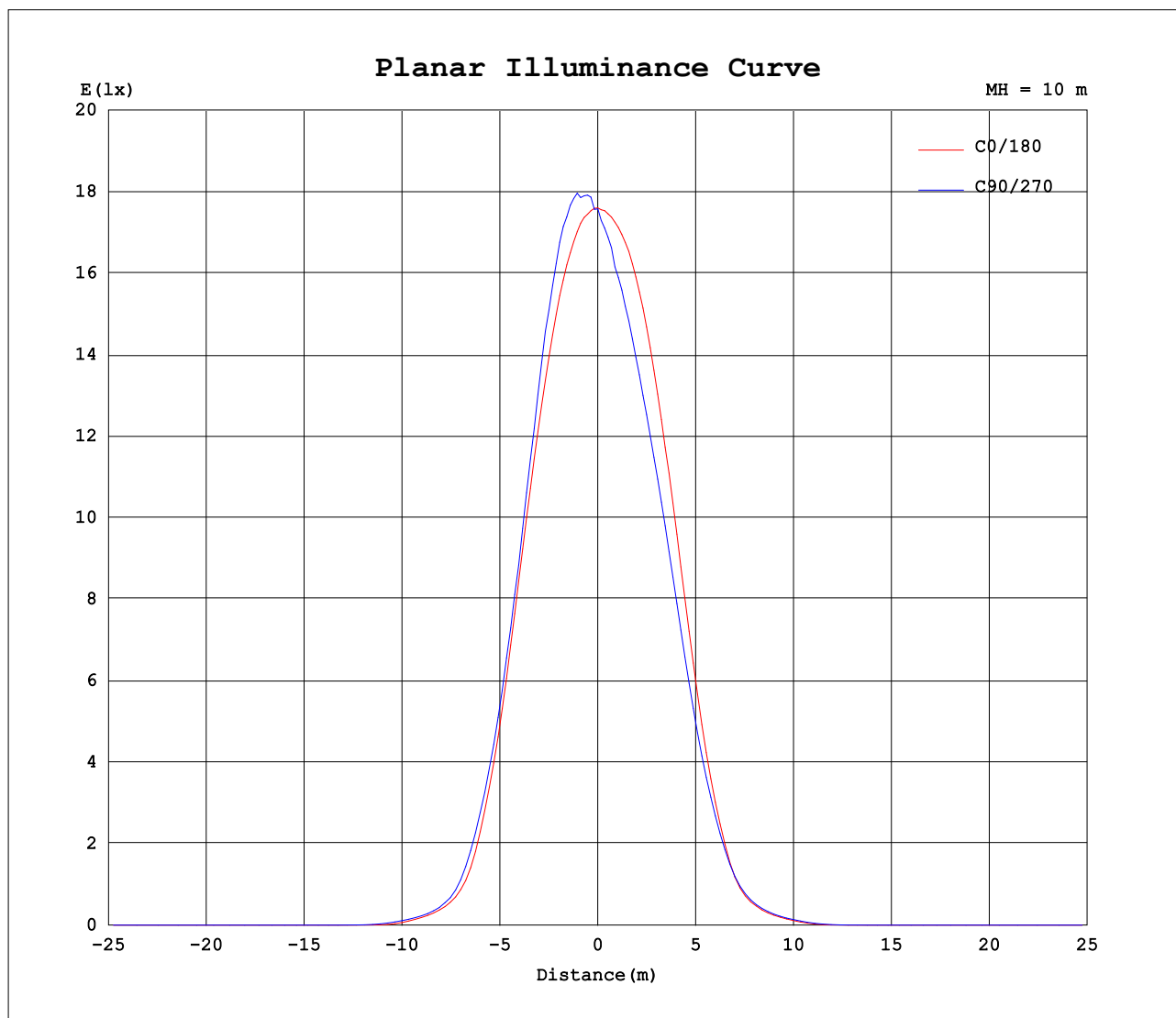
AvgL	cd/m2
L_0~180 (65) av	53
L_0~180 (75) av	41
L_0~180 (85) av	27
L_90~270 (65) av	78
L_90~270 (75) av	68
L_90~270 (85) av	84
L_45 (65) av	68
L_45 (75) av	58
L_45 (85) av	63

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Xie Bi
Test Date:2022-01-13

γ Range: 0 - 90DEG
 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: 2022-01-13

γ Range: 0 - 90DEG
 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:

```

γ Range: 0 - 90DEG
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:

```