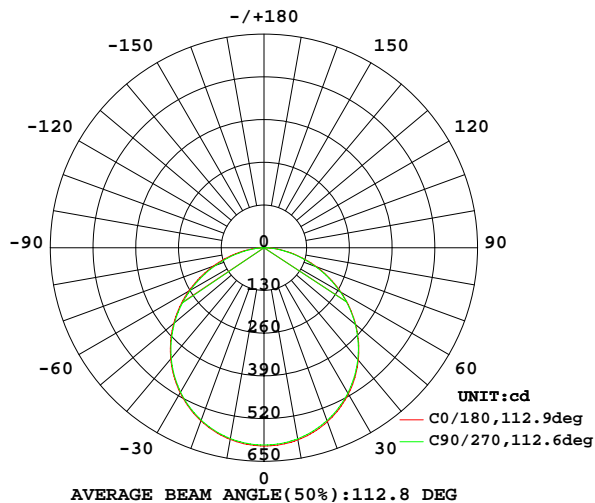


## LUMINAIRE PHOTOMETRIC TEST REPORT

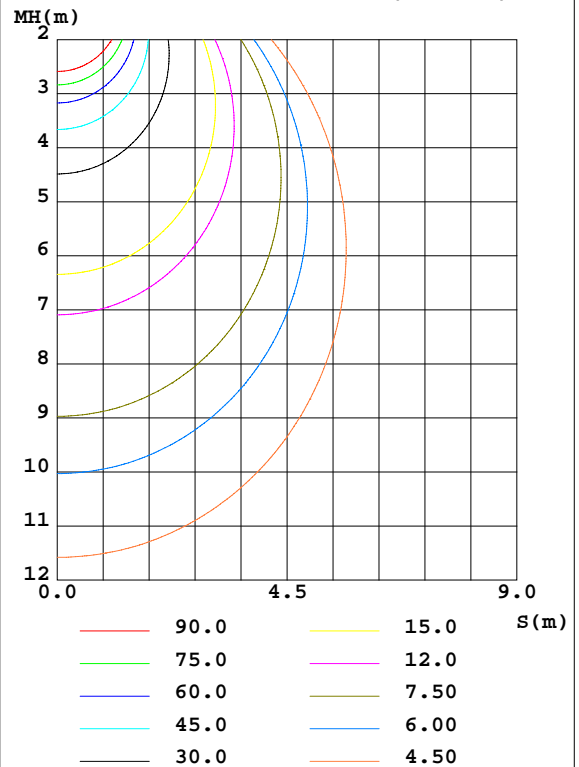
Test:U:120.1V I:0.2230A P:24.70W PF:0.9220 Lamp Flux:1732.75x1 lm		
NAME:	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 70.15 lm/W			
MODEL	PS12-24W120-3CCT02	Imax(cd)	603.3	S/MH(C0/180)	1.26
NOMINAL POWER(W)	24	LOR(%)	100.0	S/MH(C90/270)	1.26
RATED VOLTAGE(V)	120	TOTAL FLUX(lm)	1732.7	$\eta$ UP,DN(C0-180)	0.2,50.4
NOMINAL FLUX(lm)	1732.75	CIE CLASS	DIRECT	$\eta$ UP,DN(C180-360)	0.2,49.3
LAMPS INSIDE	1	$\eta$ up(%)	0.3	CIBSE SHR NOM	1.25
TEST VOLTAGE(V)	120	$\eta$ down(%)	99.7	CIBSE SHR MAX	1.35

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:  
 Test Date:2020-05-26

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 1.0DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.295  
 Humidity:65.0%  
 Test Distance:8.100m [K=1.0000]  
 Remarks:

## ZONAL FLUX DIAGRAM

## ZONAL FLUX DIAGRAM:

$\gamma$	C0	C90	C180	C270					$\gamma$	$\Phi$ zone	$\Phi$ total	$\%lum, lamp$
10	593.8	590.3	592.2	589.8					0- 10	56.96	56.96	3.29,3.29
20	563.4	559.9	560.7	558.3					10- 20	163.3	220.3	12.7,12.7
30	513.7	510.5	509.8	507.4					20- 30	247.9	468.1	27,27
40	446.4	443.9	441.8	439.0					30- 40	299.4	767.5	44.3,44.3
50	364.1	362.5	358.9	355.5					40- 50	310.9	1078	62.2,62.2
60	270.3	267.7	264.7	258.9					50- 60	280.6	1359	78.4,78.4
70	170.5	166.3	164.8	155.9					60- 70	212.7	1572	90.7,90.7
80	74.63	71.18	69.90	60.57					70- 80	121.8	1694	97.7,97.7
90	0.4448	2.505	0.2140	0.2248					80- 90	33.39	1727	99.7,99.7
100	0.2539	0.3522	0.4014	0.3429					90-100	0.3129	1727	99.7,99.7
110	0.4679	0.6021	0.6777	0.6818					100-110	0.4921	1728	99.7,99.7
120	0.7352	0.9092	0.9674	1.012					110-120	0.7540	1728	99.8,99.8
130	0.9804	1.105	1.244	1.248					120-130	0.9196	1729	99.8,99.8
140	1.221	1.315	1.480	1.404					130-140	0.9653	1730	99.9,99.9
150	1.444	1.524	1.680	1.604					140-150	0.9151	1731	99.9,99.9
160	1.711	1.752	1.854	1.765					150-160	0.7685	1732	100,100
170	1.921	1.921	2.001	1.885					160-170	0.5251	1733	100,100
180	1.988	1.965	2.001	1.934					170-180	0.1865	1733	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

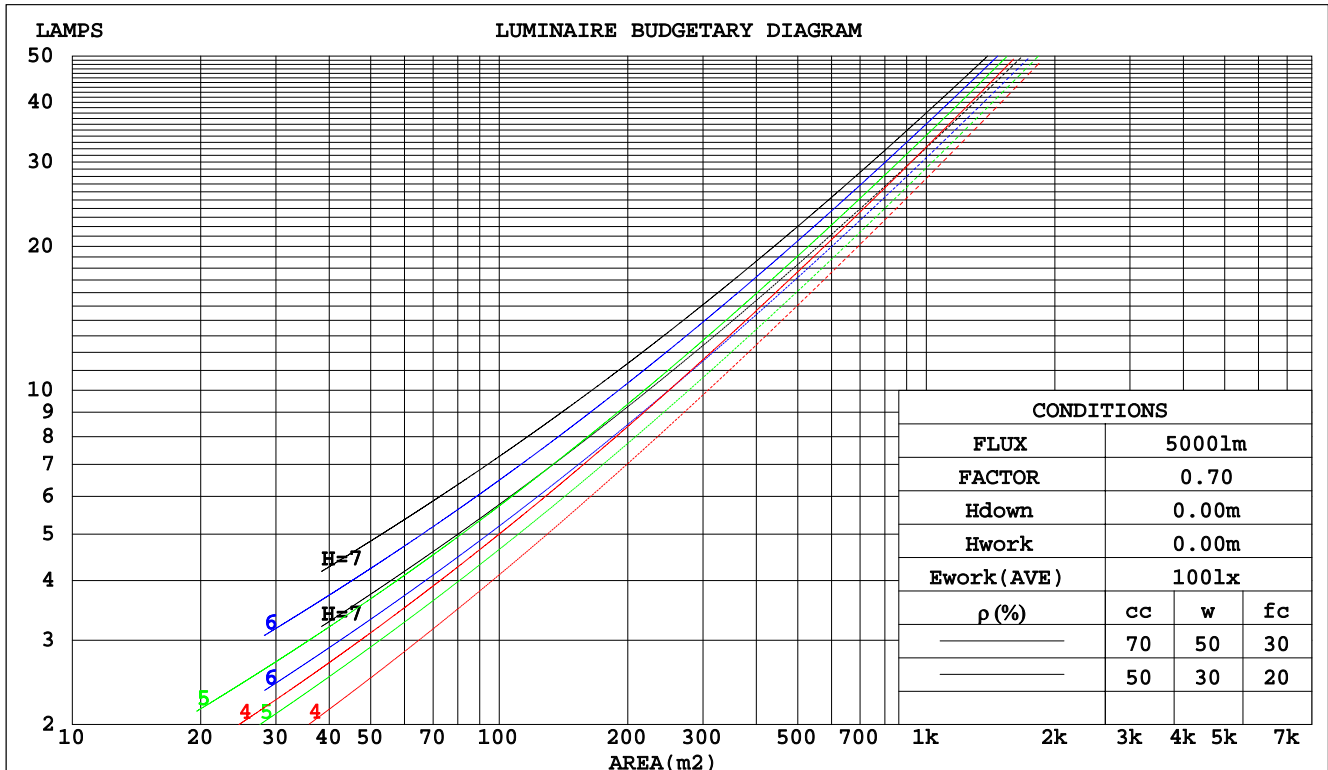
C Range: 0 - 360DEG  
 C Interval: 90.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:  
 Test Date:2020-05-26

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 1.0DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.295  
 Humidity:65.0%  
 Test Distance:8.100m [K=1.0000]  
 Remarks:

## CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:120.1V I:0.2230A P:24.70W PF:0.9220 Lamp Flux:1732.75x1 lm		
NAME:	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	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						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	1.04	.99	.96	1.01	.98	.94	.97	.94	.91	.93	.91	.88	.89	.87	.85	.83
2.0	.90	.83	.78	.88	.82	.77	.85	.79	.75	.81	.77	.73	.78	.75	.71	.69
3.0	.79	.71	.64	.78	.70	.64	.75	.68	.63	.72	.66	.61	.69	.64	.60	.58
4.0	.70	.61	.54	.69	.60	.54	.66	.59	.53	.64	.58	.53	.62	.56	.52	.50
5.0	.63	.54	.47	.61	.53	.47	.59	.52	.46	.57	.51	.45	.55	.50	.45	.43
6.0	.56	.47	.41	.55	.47	.41	.53	.46	.40	.52	.45	.40	.50	.44	.39	.37
7.0	.51	.42	.36	.50	.42	.36	.49	.41	.36	.47	.40	.35	.46	.40	.35	.33
8.0	.47	.38	.32	.46	.38	.32	.44	.37	.32	.43	.36	.32	.42	.36	.31	.29
9.0	.43	.34	.29	.42	.34	.29	.41	.34	.29	.40	.33	.28	.39	.33	.28	.26
10.0	.39	.31	.26	.39	.31	.26	.38	.31	.26	.37	.30	.26	.36	.30	.26	.24



C Range: 0 - 360DEG  
 C Interval: 90.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators:  
 Test Date: 2020-05-26

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 1.0DEG  
 Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.0.295  
 Humidity: 65.0%  
 Test Distance: 8.100m [K=1.0000]  
 Remarks:

## WEC AND CCEC

Test:U:120.1V I:0.2230A P:24.70W PF:0.9220 Lamp Flux:1732.75x1 lm									
NAME:				TYPE:LED			WEIGHT:		
SPEC.:				DIM.:			SERIAL No.:		
MFR.:				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	.311	.177	.056	.303	.173	.055	.290	.166	.053	.278	.160	.051	.266	.154	.050	
2.0	.292	.160	.049	.286	.157	.049	.274	.152	.047	.263	.148	.046	.253	.143	.045	
3.0	.270	.144	.043	.265	.142	.043	.254	.138	.042	.244	.134	.041	.235	.130	.040	
4.0	.249	.130	.038	.245	.128	.038	.235	.125	.037	.227	.122	.037	.218	.119	.036	
5.0	.231	.117	.034	.226	.116	.034	.218	.113	.033	.210	.111	.033	.203	.108	.033	
6.0	.214	.107	.031	.210	.106	.031	.203	.104	.030	.196	.102	.030	.189	.100	.030	
7.0	.199	.098	.028	.196	.097	.028	.189	.096	.028	.183	.094	.027	.177	.092	.027	
8.0	.186	.091	.026	.183	.090	.025	.177	.088	.025	.171	.087	.025	.166	.085	.025	
9.0	.174	.084	.024	.171	.084	.023	.166	.082	.023	.161	.081	.023	.156	.079	.023	
10.0	.164	.079	.022	.161	.078	.022	.156	.077	.022	.152	.075	.021	.148	.074	.021	

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	.183	.159	.137	.157	.136	.118	.107	.094	.081	.062	.054	.047	.020	.017	.015		
2.0	.175	.135	.101	.150	.116	.087	.103	.080	.061	.059	.047	.036	.019	.015	.012		
3.0	.167	.117	.077	.143	.101	.067	.098	.070	.047	.057	.041	.028	.018	.013	.009		
4.0	.160	.104	.061	.137	.090	.053	.094	.062	.037	.054	.037	.022	.018	.012	.007		
5.0	.152	.093	.050	.131	.081	.043	.090	.056	.031	.052	.033	.018	.017	.011	.006		
6.0	.145	.085	.042	.125	.074	.036	.086	.051	.026	.050	.030	.015	.016	.010	.005		
7.0	.138	.078	.036	.119	.068	.031	.082	.047	.022	.048	.028	.013	.015	.009	.004		
8.0	.132	.072	.031	.113	.063	.027	.078	.044	.019	.046	.026	.012	.015	.009	.004		
9.0	.126	.067	.028	.108	.058	.024	.075	.041	.017	.044	.024	.010	.014	.008	.003		
10.0	.120	.063	.025	.103	.055	.022	.072	.038	.016	.042	.023	.009	.014	.007	.003		

C Range: 0 - 360DEG  
 C Interval: 90.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:  
 Test Date:2020-05-26

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.295  
 Humidity:65.0%  
 Test Distance:8.100m [K=1.0000]  
 Remarks:

## UGR(Unified Glare Rating) Table

Test:U:120.1V I:0.2230A P:24.70W PF:0.9220 Lamp Flux:1732.75x1 lm											
NAME:					TYPE:LED			WEIGHT:			
SPEC.:					DIM.:			SERIAL No.:			
MFR.:					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	2H	18.9	20.4	19.1	20.6	20.8	18.8	20.3	19.1	20.6	20.8
	3H	20.4	21.8	20.7	22.1	22.3	20.3	21.7	20.6	22.0	22.2
	4H	21.0	22.4	21.4	22.6	22.9	20.9	22.3	21.3	22.5	22.8
	6H	21.5	22.8	21.8	23.0	23.3	21.4	22.6	21.7	22.9	23.2
	8H	21.7	22.9	22.0	23.2	23.5	21.5	22.7	21.9	23.0	23.3
	12H	21.7	22.9	22.1	23.2	23.5	21.6	22.8	22.0	23.1	23.4
4H	2H	19.5	20.8	19.8	21.1	21.3	19.4	20.8	19.8	21.0	21.3
	3H	21.2	22.4	21.6	22.7	23.0	21.1	22.3	21.5	22.6	22.9
	4H	22.0	23.0	22.3	23.4	23.7	21.9	22.9	22.3	23.3	23.6
	6H	22.5	23.5	23.0	23.9	24.2	22.4	23.4	22.8	23.7	24.1
	8H	22.8	23.6	23.2	24.0	24.4	22.6	23.5	23.1	23.9	24.3
	12H	22.9	23.7	23.3	24.1	24.5	22.8	23.6	23.2	24.0	24.4
8H	4H	22.2	23.1	22.6	23.5	23.9	22.2	23.0	22.6	23.4	23.8
	6H	23.0	23.7	23.4	24.1	24.6	22.9	23.6	23.3	24.0	24.5
	8H	23.3	23.9	23.7	24.4	24.8	23.2	23.8	23.6	24.2	24.7
	12H	23.5	24.1	24.0	24.5	25.0	23.4	23.9	23.9	24.4	24.9
12H	4H	22.2	23.1	22.7	23.4	23.9	22.2	23.0	22.6	23.4	23.8
	6H	23.0	23.7	23.5	24.1	24.6	22.9	23.6	23.4	24.0	24.5
	8H	23.4	23.9	23.9	24.4	24.9	23.3	23.8	23.7	24.3	24.8
Variations with the observer position at spacings:											
S = 1.0H	+ 0.1 / - 0.2					+ 0.1 / - 0.2					
1.5H	+ 0.2 / - 0.3					+ 0.2 / - 0.3					
2.0H	+ 0.2 / - 0.3					+ 0.2 / - 0.3					

CIE Pub.117 Corrected 1733 lm Total Lamp Luminous Flux.(8log(F/F0) = 1.9)

C Range: 0 - 360DEG  
 C Interval: 90.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:  
 Test Date:2020-05-26

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.295  
 Humidity:65.0%  
 Test Distance:8.100m [K=1.0000]  
 Remarks:

## UTILIZATION FACTORS TABLE

Test:U:120.1V I:0.2230A P:24.70W PF:0.9220 Lamp Flux:1732.75x1 lm		
NAME:	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

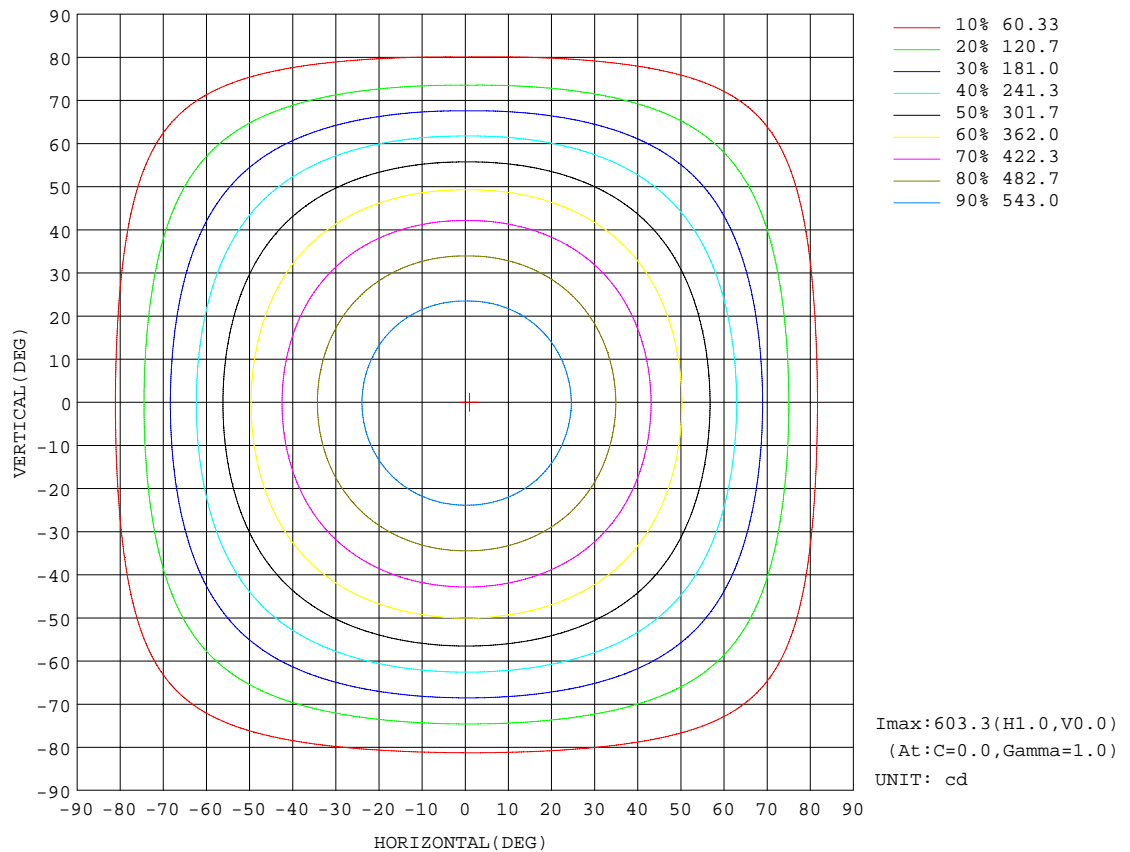
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	57	46	39	57	45	39	55	45	38	32
0.80	67	56	48	66	55	48	64	54	48	41
1.00	76	65	57	75	64	57	72	65	56	49
1.25	83	72	65	81	72	65	79	70	64	57
1.50	88	78	71	86	77	70	83	75	69	62
2.00	95	86	80	93	85	79	89	83	77	69
2.50	99	91	85	97	90	84	93	87	82	74
3.00	102	95	90	100	94	89	96	91	86	78
4.00	106	100	96	104	99	94	99	95	92	83
5.00	109	104	100	106	102	98	101	98	95	86
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:  
 Test Date:2020-05-26

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.295  
 Humidity:65.0%  
 Test Distance:8.100m [K=1.0000]  
 Remarks:

## ISOCANDELA DIAGRAM

Test:U:120.1V I:0.2230A P:24.70W PF:0.9220 Lamp Flux:1732.75x1 lm		
NAME:	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

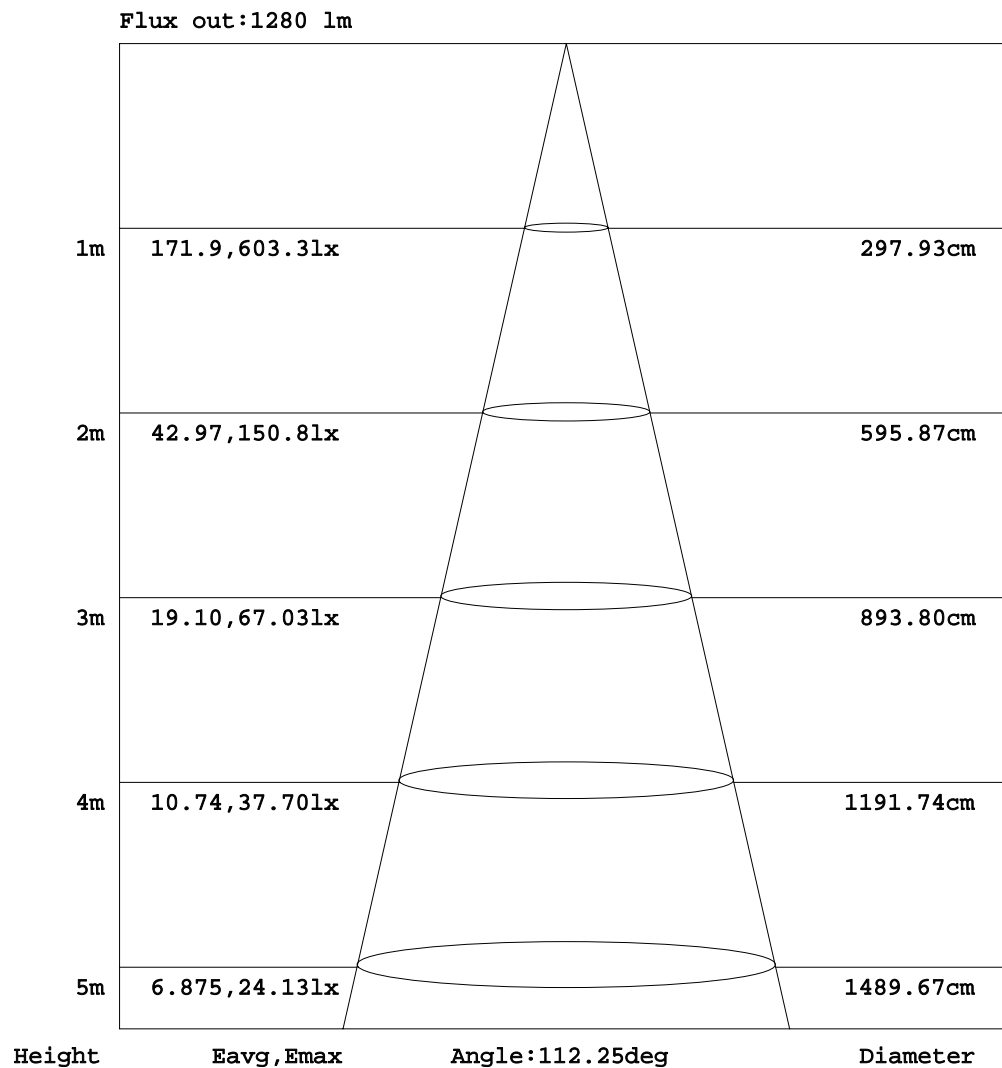


C Range: 0 - 360DEG  
 C Interval: 90.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:  
 Test Date:2020-05-26

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.295  
 Humidity:65.0%  
 Test Distance:8.100m [K=1.0000]  
 Remarks:

## AAI Figure

Test:U:120.1V I:0.2230A P:24.70W PF:0.9220 Lamp Flux:1732.75x1 lm		
NAME:	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:



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

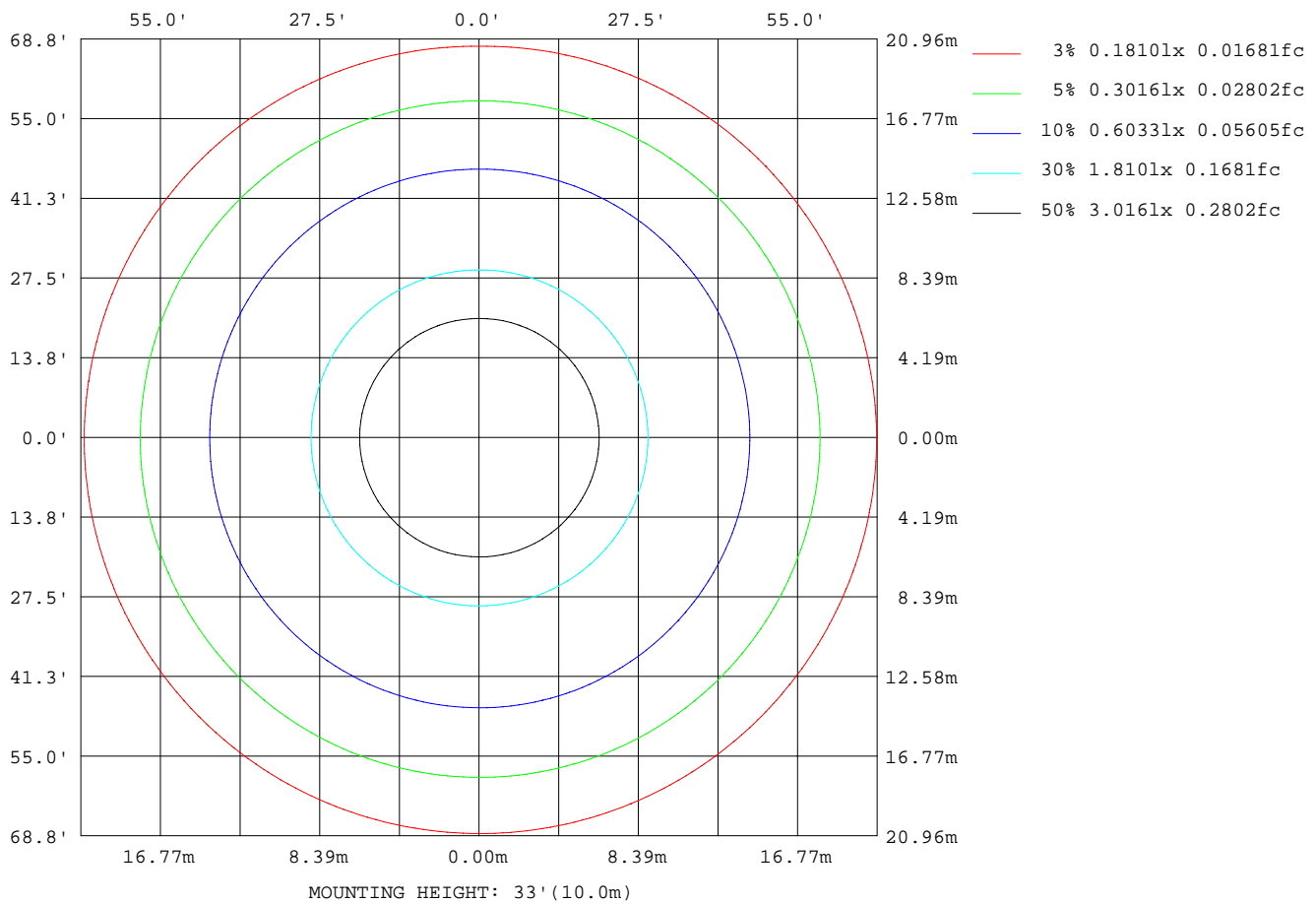
C Range: 0 - 360DEG  
 C Interval: 90.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:  
 Test Date:2020-05-26

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 1.0DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.295  
 Humidity:65.0%  
 Test Distance:8.100m [K=1.0000]  
 Remarks:



## ISOLUX DIAGRAM

Test:U:120.1V I:0.2230A P:24.70W PF:0.9220 Lamp Flux:1732.75x1 lm		
NAME:	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:



C Range: 0 - 360DEG  
 C Interval: 90.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators:  
 Test Date: 2020-05-26

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 1.0DEG  
 Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.0.295  
 Humidity: 65.0%  
 Test Distance: 8.100m [K=1.0000]  
 Remarks:

## LED Avg.L Report

Test:U:120.1V I:0.2230A P:24.70W PF:0.9220 Lamp Flux:1732.75x1 lm		
NAME:	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

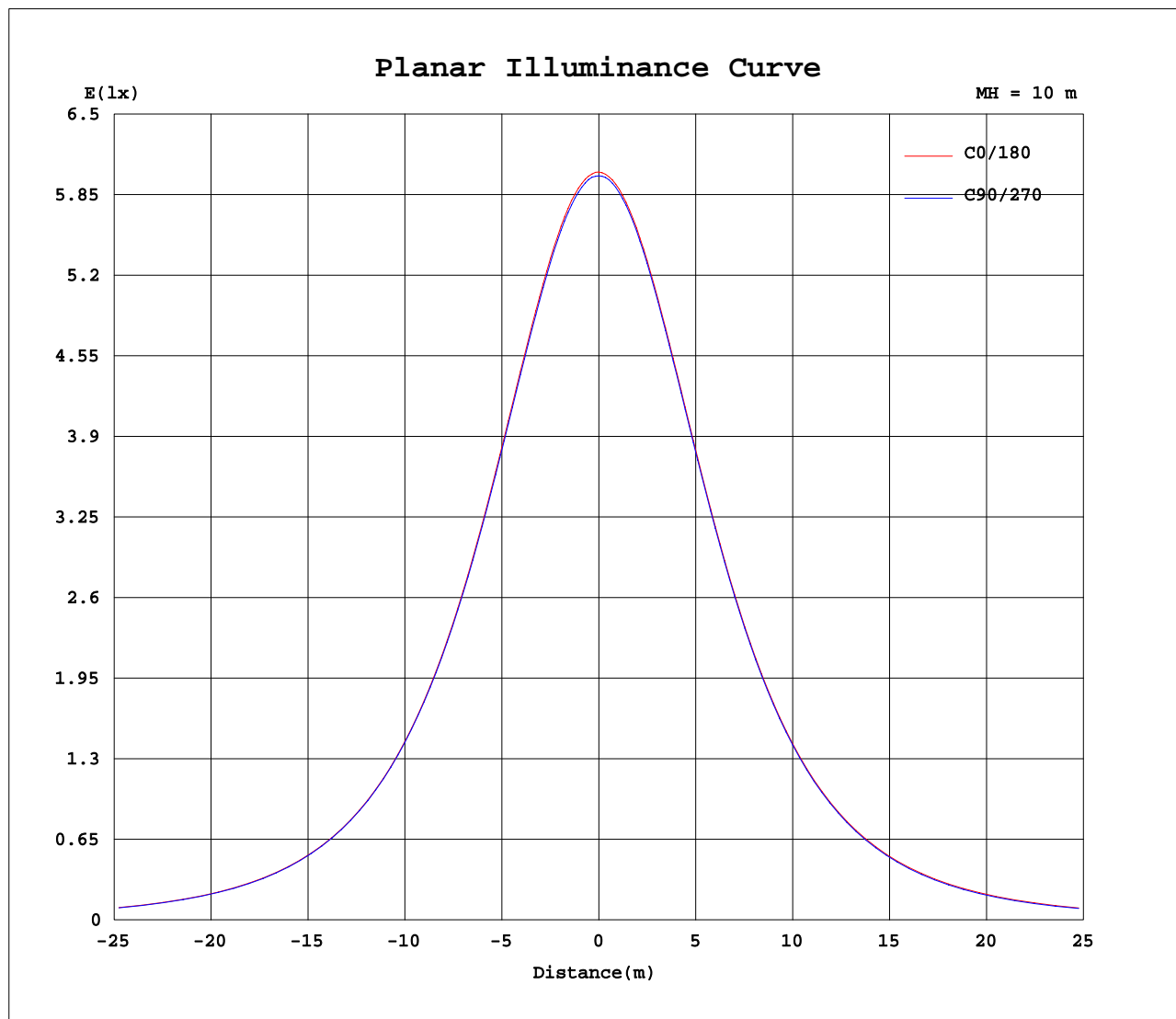
AvgL	cd/m2
L_0~180(65)av	5154
L_0~180(75)av	4571
L_0~180(85)av	3580
L_90~270(65)av	5025
L_90~270(75)av	4302
L_90~270(85)av	3061
L_45(65)av	5069
L_45(75)av	4396
L_45(85)av	3241

Standard: GB/T 29293-2012

C Range: 0 - 360DEG  
 C Interval: 90.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:  
 Test Date:2020-05-26

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.295  
 Humidity:65.0%  
 Test Distance:8.100m [K=1.0000]  
 Remarks:

## Planar Illuminance Curve



C Range: 0 - 360DEG  
C Interval: 90.0DEG  
Test Speed: HIGH  
Temperature: 25.3DEG  
Operators:  
Test Date: 2020-05-26

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 1.0DEG  
Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.0.295  
Humidity: 65.0%  
Test Distance: 8.100m [K=1.0000]  
Remarks:

## LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:120.1V I:0.2230A P:24.70W PF:0.9220 Lamp Flux:1732.75x1 lm		
NAME:	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

Table--1

UNIT: cd

C(DEG) γ (DEG)	0	90	180	270														
0	603	600	603	600														
5	601	598	600	598														
10	594	590	592	590														
15	581	578	579	577														
20	563	560	561	558														
25	541	538	538	535														
30	514	511	510	507														
35	482	479	478	475														
40	446	444	442	439														
45	407	405	402	399														
50	364	363	359	355														
55	318	316	313	309														
60	270	268	265	259														
65	221	217	215	207														
70	171	166	165	156														
75	121	117	116	106														
80	74.6	71.2	69.9	60.6														
85	33.3	31.3	29.1	22.0														
90	0.44	2.50	0.21	0.22														
95	0.17	0.26	0.29	0.24														
100	0.25	0.35	0.40	0.34														
105	0.36	0.47	0.53	0.49														
110	0.47	0.60	0.68	0.68														
115	0.60	0.76	0.82	0.87														
120	0.74	0.91	0.97	1.01														
125	0.86	1.02	1.11	1.13														
130	0.98	1.11	1.24	1.25														
135	1.10	1.21	1.37	1.31														
140	1.22	1.31	1.48	1.40														
145	1.34	1.43	1.58	1.51														
150	1.44	1.52	1.68	1.60														
155	1.56	1.64	1.77	1.70														
160	1.71	1.75	1.85	1.76														
165	1.84	1.85	1.94	1.84														
170	1.92	1.92	2.00	1.89														
175	1.97	1.96	2.00	1.93														
180	1.99	1.97	2.00	1.93														

C Range: 0 - 360DEG  
 C Interval: 90.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:  
 Test Date:2020-05-26

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.295  
 Humidity:65.0%  
 Test Distance:8.100m [K=1.0000]  
 Remarks: