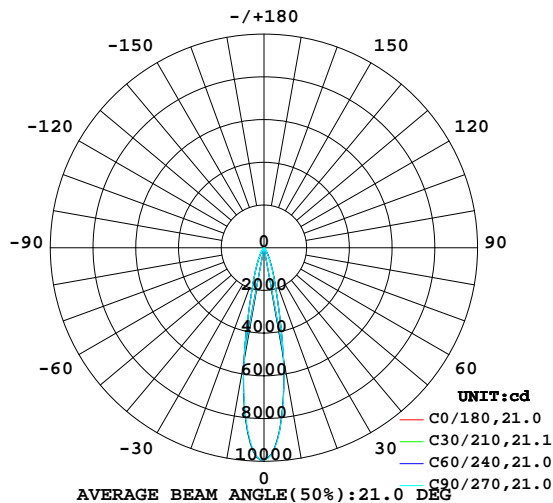


## LUMINAIRE PHOTOMETRIC TEST REPORT

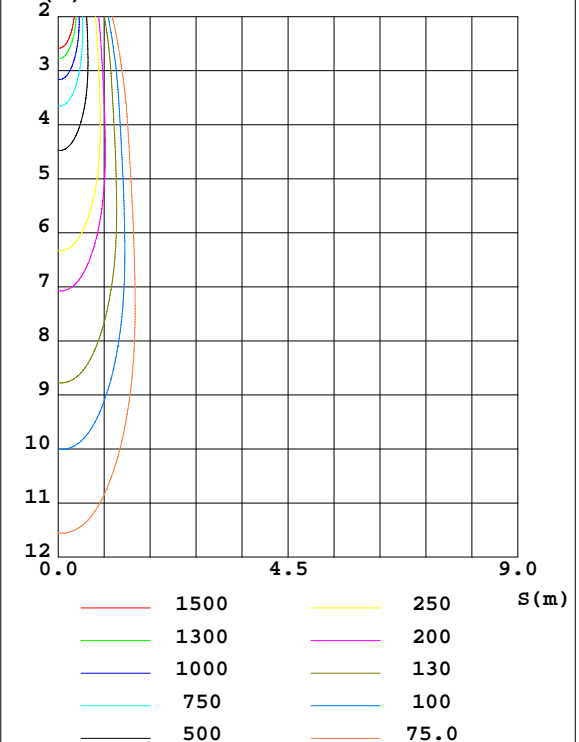
Test:U:225.1V I:0.1130A P:23.80W PF:0.9330 Freq:50.00Hz Lamp Flux:1913.96x1 lm					
NAME:		TYPE:		WEIGHT:	
SPEC.:		DIM.:		SERIAL No.:	
MFR.:		SUR.:60		Shielding Angle:	

DATA OF LAMP		PHOTOMETRIC DATA				Eff: 80.42 lm/W
MODEL	ALR70-24G30-24	I <sub>max</sub> (cd)	9960	S/MH(C0/180)	0.36	
NOMINAL POWER(W)	24	LOR(%)	100.0	S/MH(C90/270)	0.36	
RATED VOLTAGE(V)	226	TOTAL FLUX(lm)	1914.0	η UP,DN(C0-180)	0.0,50.5	
NOMINAL FLUX(lm)	1913.96	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,49.5	
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	0.00	
TEST VOLTAGE(V)	225.1	η down(%)	100.0	CIBSE SHR MAX	1.00	

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:AE  
 Test Date:2020-06-16

γ Range: 0 - 90DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.362  
 Humidity:65.0%  
 Test Distance:7.240m [K=1.0000]  
 Remarks:

## ZONAL FLUX DIAGRAM

## ZONAL FLUX DIAGRAM:

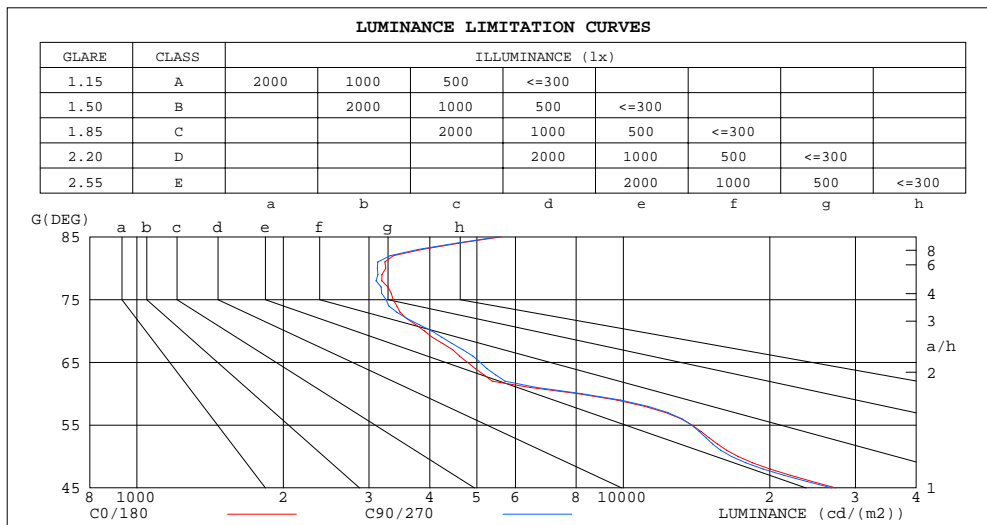
$\gamma$	C0	C45	C90	C135	C180	C225	C270	C315	$\gamma$	$\Phi$ zone	$\Phi$ total	%lum, lamp
10	5445	5590	5377	5353	5247	5095	5309	5305	0- 10	714.9	714.9	37.4, 37.4
20	1202	1238	1223	1229	1241	1207	1209	1182	10- 20	707.7	1423	74.3, 74.3
30	325.0	338.0	326.4	335.6	333.4	324.7	321.8	316.7	20- 30	304.5	1727	90.2, 90.2
40	94.76	97.14	95.05	95.36	95.11	95.26	95.88	93.60	30- 40	113.3	1840	96.2, 96.2
50	31.04	31.33	30.32	30.46	31.27	32.36	32.50	31.79	40- 50	43.65	1884	98.4, 98.4
60	11.32	12.01	11.60	11.89	11.64	10.65	11.21	10.79	50- 60	19.68	1904	99.5, 99.5
70	3.743	3.985	3.906	3.971	4.317	4.074	4.089	3.872	60- 70	6.262	1910	99.8, 99.8
80	1.583	1.590	1.533	1.431	1.393	1.382	1.411	1.449	70- 80	2.701	1913	99.9, 99.9
90	1.586	1.576	1.563	1.569	0.8707	0.8642	0.8579	0.8710	80- 90	1.333	1914	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: 15.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators: AE  
 Test Date: 2020-06-16

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 1.0DEG  
 Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.362  
 Humidity: 65.0%  
 Test Distance: 7.240m [K=1.0000]  
 Remarks:

## LUMINANCE LIMITATION CURVES

Test:U:225.1V I:0.1130A P:23.80W PF:0.9330 Freq:50.00Hz Lamp Flux:1913.96x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:60	Shielding Angle:



LUMINANCE cd/(m2)		
G(DEG)	C0/180	C90/270
85	5607	5528
80	3248	3121
75	3363	3251
70	3898	4037
65	4781	5076
60	8065	8203
55	13841	13814
50	17200	16676
45	27326	26835

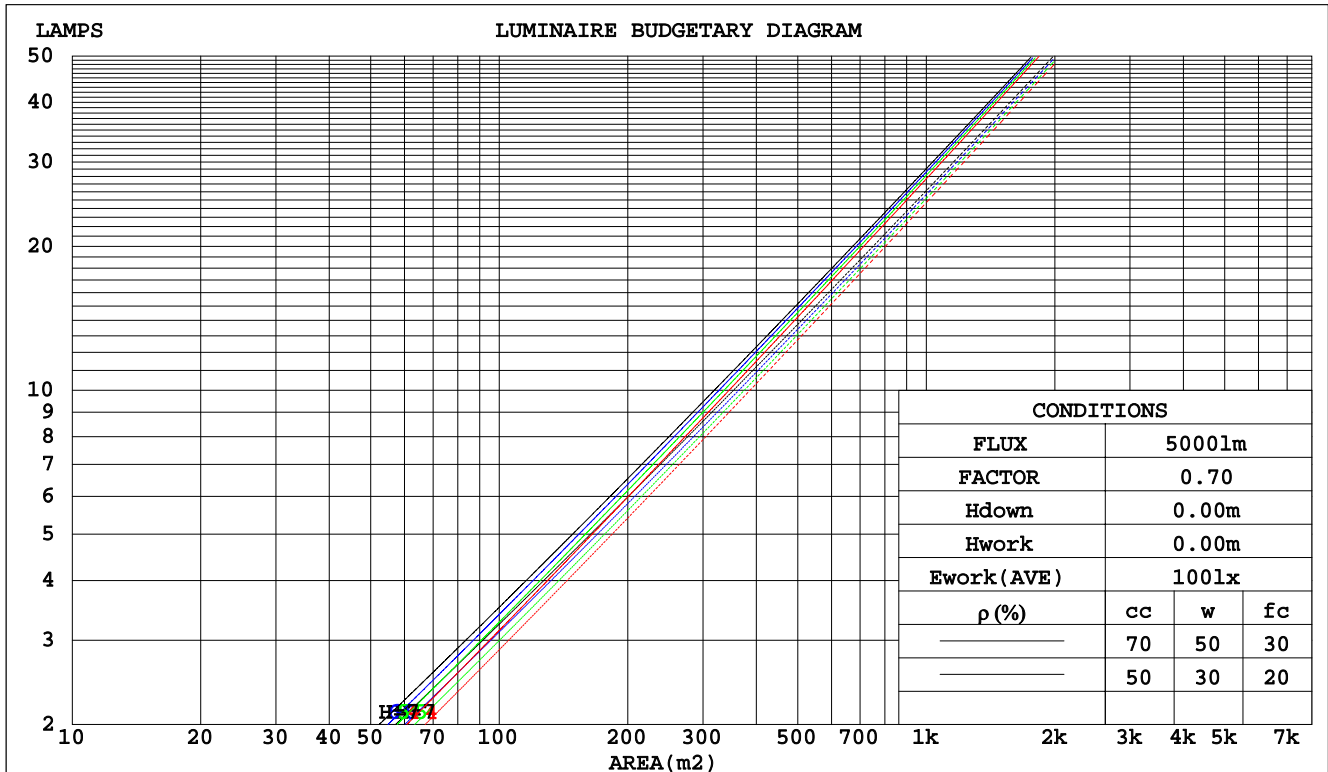
C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:AE  
Test Date:2020-06-16

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 1.0DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.362  
Humidity:65.0%  
Test Distance:7.240m [K=1.0000]  
Remarks:

## CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:225.1V I:0.1130A P:23.80W PF:0.9330 Freq:50.00Hz Lamp Flux:1913.96x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:60	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	1.00
1.0	1.13	1.11	1.09	1.10	1.09	1.07	1.06	1.05	1.04	1.03	1.02	1.01	.99	.99	.98	.96
2.0	1.07	1.04	1.01	1.05	1.03	1.00	1.02	.00	.98	.99	.98	.96	.97	.95	.94	.93
3.0	1.02	.98	.95	1.01	.97	.95	.98	.96	.93	.96	.94	.92	.94	.92	.90	.89
4.0	.98	.94	.91	.97	.93	.90	.95	.92	.89	.93	.90	.88	.91	.89	.87	.86
5.0	.94	.90	.87	.93	.89	.86	.92	.88	.86	.90	.87	.85	.89	.86	.84	.83
6.0	.91	.86	.83	.90	.86	.83	.89	.85	.82	.87	.84	.82	.86	.84	.81	.80
7.0	.88	.83	.80	.87	.83	.80	.86	.82	.80	.85	.82	.79	.84	.81	.79	.78
8.0	.85	.81	.78	.84	.80	.77	.83	.80	.77	.83	.79	.77	.82	.79	.77	.76
9.0	.82	.78	.75	.82	.78	.75	.81	.77	.75	.80	.77	.75	.80	.77	.74	.73
10.0	.80	.76	.73	.80	.76	.73	.79	.75	.73	.78	.75	.73	.78	.75	.72	.72



C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:AE  
 Test Date:2020-06-16

γ Range: 0 - 90DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.362  
 Humidity:65.0%  
 Test Distance:7.240m [K=1.0000]  
 Remarks:

## WEC AND CCEC

Test:U:225.1V I:0.1130A P:23.80W PF:0.9330 Freq:50.00Hz Lamp Flux:1913.96x1 lm									
NAME:				TYPE:			WEIGHT:		
SPEC.:				DIM.:			SERIAL No.:		
MFR.:				SUR.:60			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	.142	.081	.026	.136	.077	.025	.123	.071	.023	.112	.065	.021	.101	.059	.019	
2.0	.133	.073	.022	.127	.070	.022	.117	.065	.020	.107	.060	.019	.099	.056	.018	
3.0	.124	.066	.020	.119	.064	.019	.111	.060	.018	.103	.056	.017	.095	.053	.016	
4.0	.116	.060	.018	.112	.059	.017	.105	.056	.017	.098	.053	.016	.092	.050	.015	
5.0	.109	.056	.016	.106	.054	.016	.100	.052	.015	.094	.050	.015	.089	.047	.014	
6.0	.103	.052	.015	.101	.051	.015	.095	.049	.014	.090	.047	.014	.085	.045	.013	
7.0	.098	.048	.014	.096	.048	.014	.091	.046	.013	.087	.044	.013	.082	.043	.013	
8.0	.093	.046	.013	.091	.045	.013	.087	.043	.012	.083	.042	.012	.080	.041	.012	
9.0	.089	.043	.012	.087	.042	.012	.083	.041	.012	.080	.040	.011	.077	.039	.011	
10.0	.085	.041	.011	.083	.040	.011	.080	.039	.011	.077	.038	.011	.074	.037	.011	

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	.169	.158	.148	.144	.135	.127	.099	.093	.088	.057	.054	.051	.018	.017	.017	
2.0	.151	.133	.117	.129	.114	.101	.089	.079	.071	.051	.046	.041	.016	.015	.014	
3.0	.136	.113	.095	.117	.098	.082	.080	.068	.058	.046	.040	.034	.015	.013	.011	
4.0	.124	.098	.078	.106	.085	.068	.073	.059	.048	.042	.035	.028	.014	.011	.009	
5.0	.114	.086	.065	.098	.074	.057	.067	.052	.040	.039	.030	.024	.013	.010	.008	
6.0	.105	.076	.055	.090	.066	.048	.062	.046	.034	.036	.027	.020	.012	.009	.007	
7.0	.097	.068	.047	.084	.059	.041	.058	.041	.029	.034	.024	.017	.011	.008	.006	
8.0	.091	.061	.040	.078	.053	.035	.054	.037	.025	.031	.022	.015	.010	.007	.005	
9.0	.085	.055	.035	.073	.048	.031	.051	.034	.022	.030	.020	.013	.010	.007	.004	
10.0	.080	.051	.031	.069	.044	.027	.048	.031	.019	.028	.018	.011	.009	.006	.004	

C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:AE  
Test Date:2020-06-16

γ Range: 0 - 90DEG  
γ Interval: 1.0DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.362  
Humidity:65.0%  
Test Distance:7.240m [K=1.0000]  
Remarks:

## UGR(Unified Glare Rating) Table

Test:U:225.1V I:0.1130A P:23.80W PF:0.9330 Freq:50.00Hz Lamp Flux:1913.96x1 lm										
NAME:			TYPE:			WEIGHT:				
SPEC.:			DIM.:			SERIAL No.:				
MFR.:			SUR.:60			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	13.5	14.2	13.7	14.3	14.5	13.5	14.2	13.7	14.3	14.5
3H	13.5	14.1	13.7	14.3	14.5	13.4	14.1	13.7	14.3	14.5
4H	13.4	14.0	13.7	14.3	14.5	13.4	14.0	13.7	14.2	14.4
6H	13.4	14.0	13.7	14.2	14.4	13.4	13.9	13.6	14.2	14.4
8H	13.4	13.9	13.7	14.2	14.4	13.3	13.9	13.6	14.1	14.4
12H	13.4	13.9	13.7	14.2	14.4	13.3	13.9	13.6	14.1	14.4
4H 2H	13.4	14.0	13.7	14.2	14.4	13.4	14.0	13.6	14.2	14.4
3H	13.4	13.9	13.7	14.2	14.4	13.4	13.9	13.7	14.1	14.4
4H	13.4	13.8	13.7	14.1	14.4	13.3	13.8	13.7	14.1	14.4
6H	13.3	13.8	13.7	14.1	14.4	13.3	13.7	13.7	14.1	14.4
8H	13.3	13.7	13.7	14.1	14.4	13.3	13.7	13.7	14.0	14.4
12H	13.3	13.7	13.7	14.1	14.4	13.3	13.7	13.7	14.0	14.4
8H 4H	13.2	13.7	13.6	14.0	14.4	13.2	13.6	13.6	14.0	14.3
6H	13.2	13.6	13.7	14.0	14.4	13.2	13.5	13.6	13.9	14.3
8H	13.2	13.5	13.7	13.9	14.4	13.2	13.5	13.6	13.9	14.3
12H	13.3	13.5	13.7	14.0	14.4	13.2	13.5	13.7	13.9	14.4
12H 4H	13.2	13.6	13.6	13.9	14.3	13.2	13.5	13.6	13.9	14.3
6H	13.2	13.5	13.6	13.9	14.3	13.2	13.5	13.6	13.9	14.3
8H	13.2	13.5	13.7	13.9	14.4	13.2	13.4	13.6	13.9	14.3
Variations with the observer position at spacings:										
S = 1.0H	+ 2.0 / - 3.4					+ 2.0 / - 3.5				
1.5H	+ 3.3 / - 2.4					+ 3.4 / - 2.5				
2.0H	+ 3.3 / - 3.9					+ 3.3 / - 3.9				

CIE Pub.117, 1914 lm Total Lamp Luminous Flux Correct ( $8\log(F/F_0) = 2.3$ )

C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:AE  
Test Date:2020-06-16

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 1.0DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.362  
Humidity:65.0%  
Test Distance:7.240m [K=1.0000]  
Remarks:

## UTILIZATION FACTORS TABLE

Test:U:225.1V I:0.1130A P:23.80W PF:0.9330 Freq:50.00Hz Lamp Flux:1913.96x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:60	Shielding Angle:

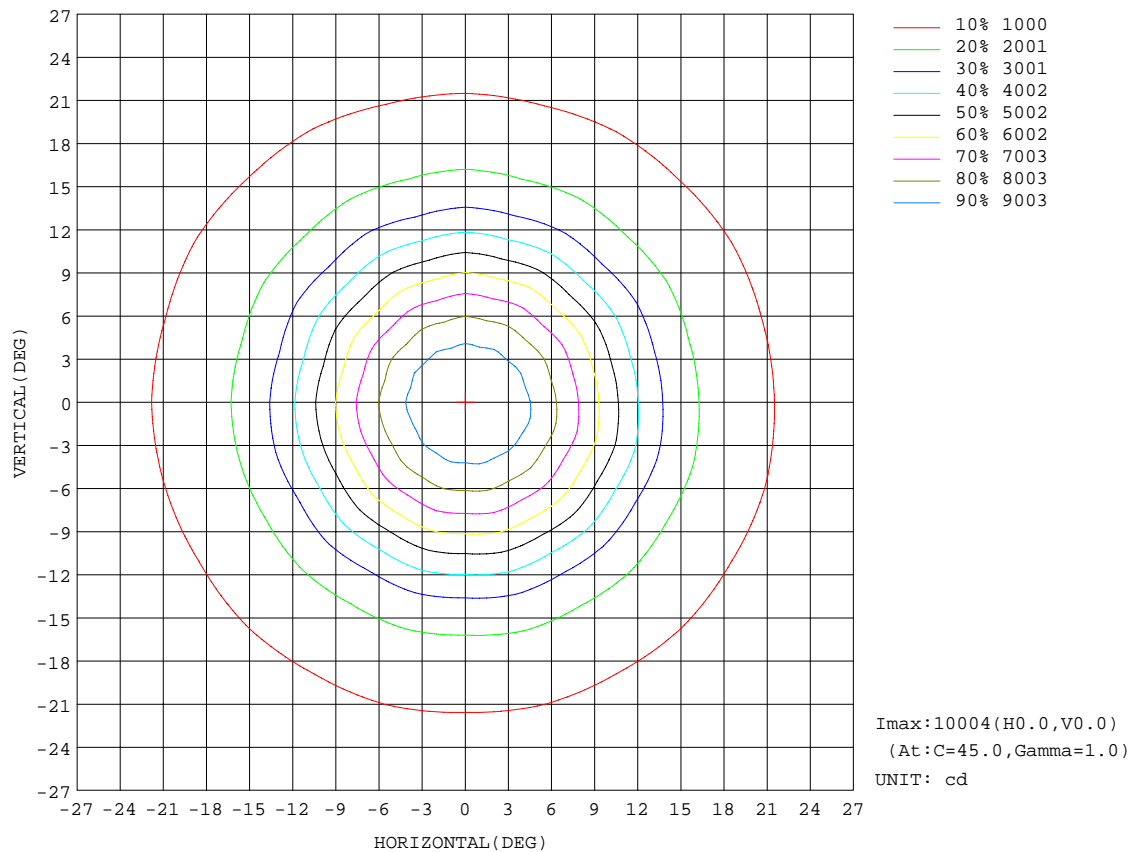
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	89	83	80	89	83	79	88	83	79	76
0.80	96	91	87	96	90	87	95	90	87	83
1.00	100	95	92	100	95	91	98	94	91	87
1.25	104	99	96	103	99	96	101	98	95	91
1.50	107	102	99	106	102	99	103	100	98	93
2.00	109	105	102	108	104	101	105	102	100	95
2.50	111	107	104	109	106	103	106	104	102	96
3.00	112	109	106	110	108	105	107	105	103	97
4.00	114	112	109	112	110	108	109	107	105	98
5.00	115	113	112	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: 15.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators: AE  
 Test Date: 2020-06-16

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 1.0DEG  
 Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.362  
 Humidity: 65.0%  
 Test Distance: 7.240m [K=1.0000]  
 Remarks:

## ISOCANDELA DIAGRAM

Test:U:225.1V I:0.1130A P:23.80W PF:0.9330 Freq:50.00Hz Lamp Flux:1913.96x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:60	Shielding Angle:



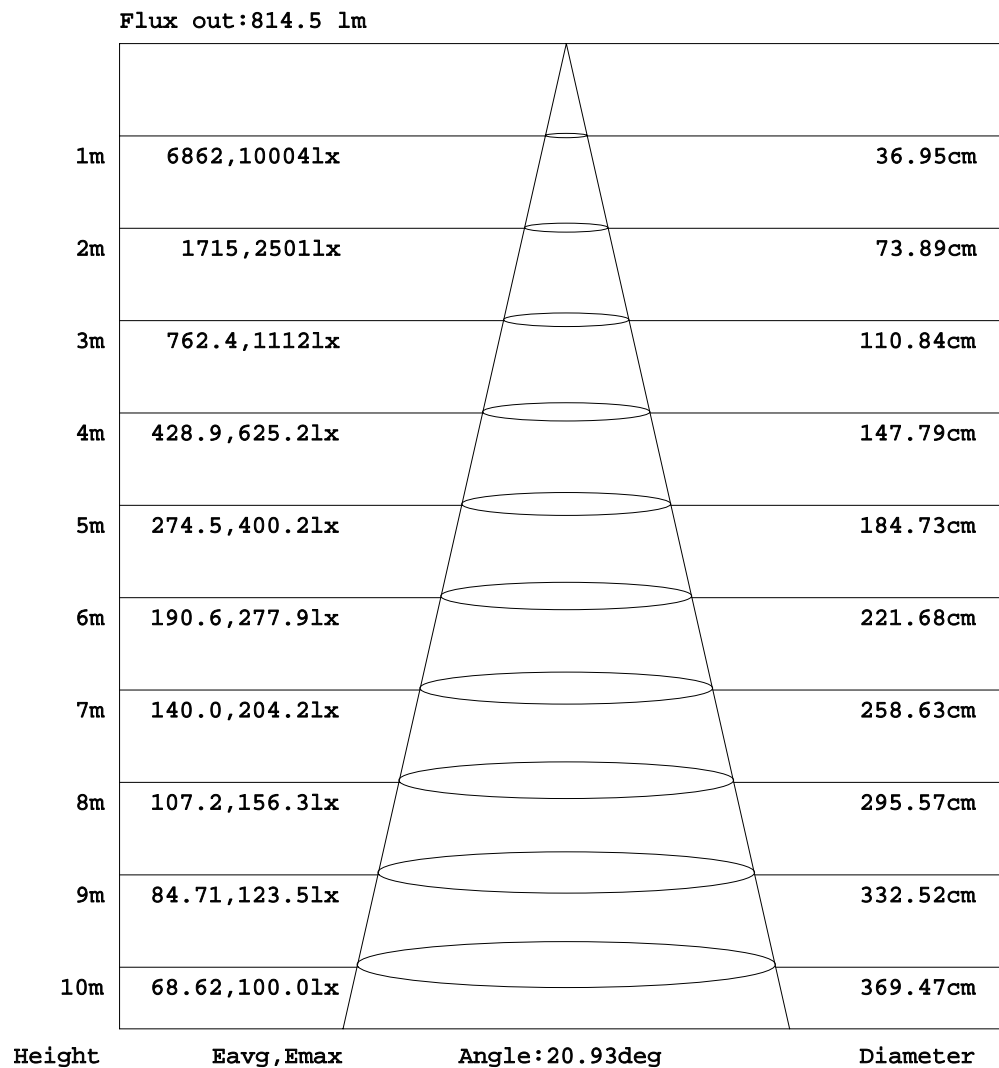
C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:AE  
Test Date:2020-06-16

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 1.0DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.362  
Humidity:65.0%  
Test Distance:7.240m [K=1.0000]  
Remarks:



## AAI Figure

Test:U:225.1V I:0.1130A P:23.80W PF:0.9330 Freq:50.00Hz Lamp Flux:1913.96x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:60	Shielding Angle:



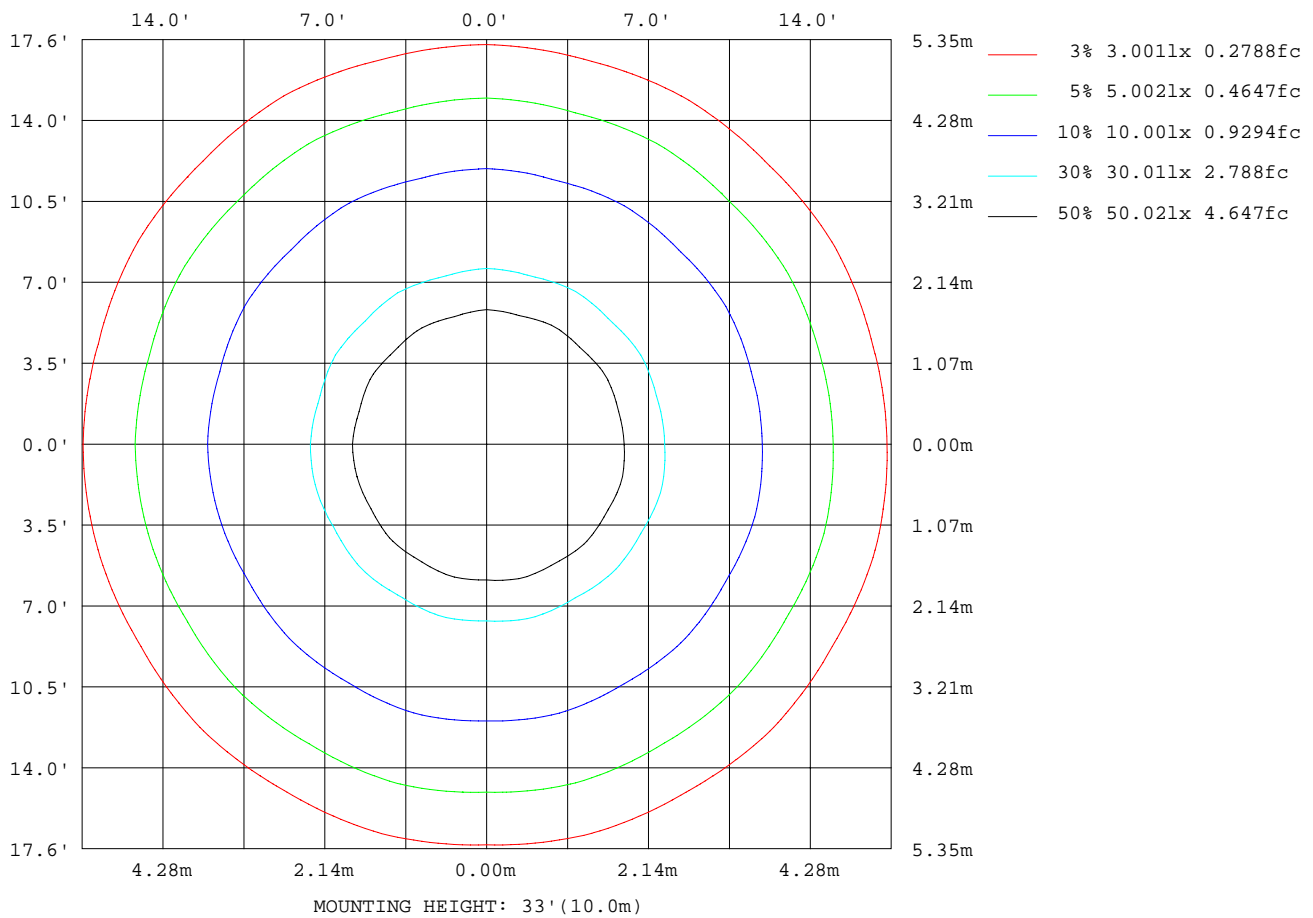
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators: AE  
 Test Date: 2020-06-16

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 1.0DEG  
 Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.362  
 Humidity: 65.0%  
 Test Distance: 7.240m [K=1.0000]  
 Remarks:

### ISOLUX DIAGRAM

Test:U:225.1V I:0.1130A P:23.80W PF:0.9330 Freq:50.00Hz Lamp Flux:1913.96x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:60	Shielding Angle:



C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators: AE  
 Test Date: 2020-06-16

γ Range: 0 - 90DEG  
 γ Interval: 1.0DEG  
 Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.362  
 Humidity: 65.0%  
 Test Distance: 7.240m [K=1.0000]  
 Remarks:

## LED Avg.L Report

Test:U:225.1V I:0.1130A P:23.80W PF:0.9330 Freq:50.00Hz Lamp Flux:1913.96x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:60	Shielding Angle:

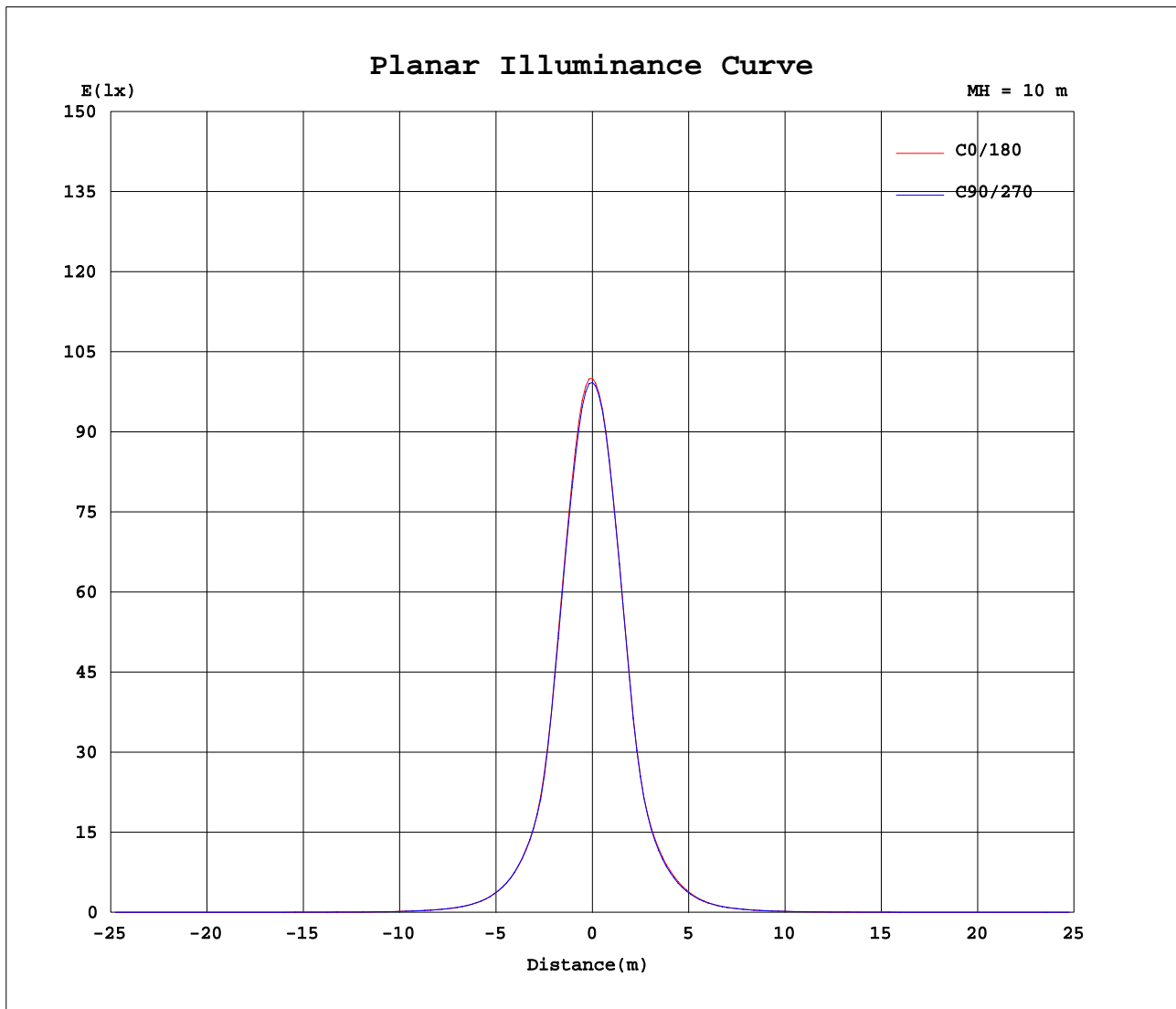
AvgL	cd/m2
L_0~180(65)av	5069
L_0~180(75)av	3412
L_0~180(85)av	4756
L_90~270(65)av	5089
L_90~270(75)av	3401
L_90~270(85)av	4762
L_45(65)av	5023
L_45(75)av	3372
L_45(85)av	4892

Standard: GB/T 29293-2012

C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:AE  
 Test Date:2020-06-16

γ Range: 0 - 90DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.362  
 Humidity:65.0%  
 Test Distance:7.240m [K=1.0000]  
 Remarks:

## Planar Illuminance Curve



C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: HIGH  
Temperature: 25.3DEG  
Operators: AE  
Test Date: 2020-06-16

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 1.0DEG  
Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.362  
Humidity: 65.0%  
Test Distance: 7.240m [K=1.0000]  
Remarks:

```

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γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.362
Humidity:65.0%
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Remarks:

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