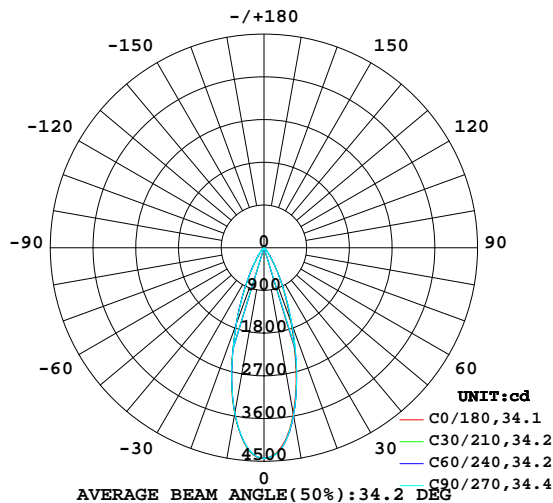


## LUMINAIRE PHOTOMETRIC TEST REPORT

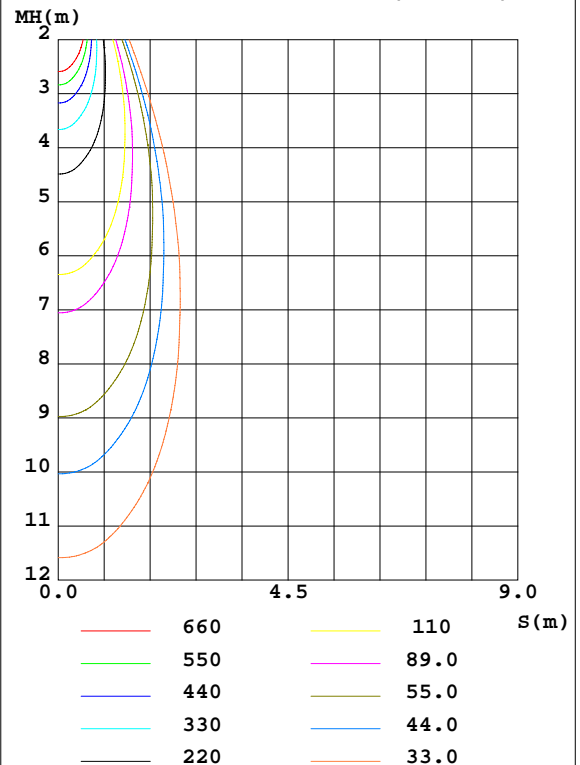
Test:U:225.1V I:0.1120A P:23.60W PF:0.9310 Freq:50.00Hz Lamp Flux:1802.53x1 lm					
NAME:		TYPE:		WEIGHT:	
SPEC.:		DIM.:		SERIAL No.:	
MFR.:		SUR.:60		Shielding Angle:	

DATA OF LAMP		PHOTOMETRIC DATA				Eff: 76.41 lm/W
MODEL	ALR70-24G30-36	Imax(cd)	4436	S/MH(C0/180)	0.56	
NOMINAL POWER(W)	24	LOR(%)	100.0	S/MH(C90/270)	0.57	
RATED VOLTAGE(V)	226	TOTAL FLUX(lm)	1803.2	$\eta$ UP,DN(C0-180)	0.0,50.1	
NOMINAL FLUX(lm)	1802.53	CIE CLASS	DIRECT	$\eta$ UP,DN(C180-360)	0.0,50.0	
LAMPS INSIDE	1	$\eta$ up(%)	0.0	CIBSE SHR NOM	0.50	
TEST VOLTAGE(V)	225.1	$\eta$ down(%)	100.0	CIBSE SHR MAX	0.60	

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

$\gamma$  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:

## ZONAL FLUX DIAGRAM

## ZONAL FLUX DIAGRAM:

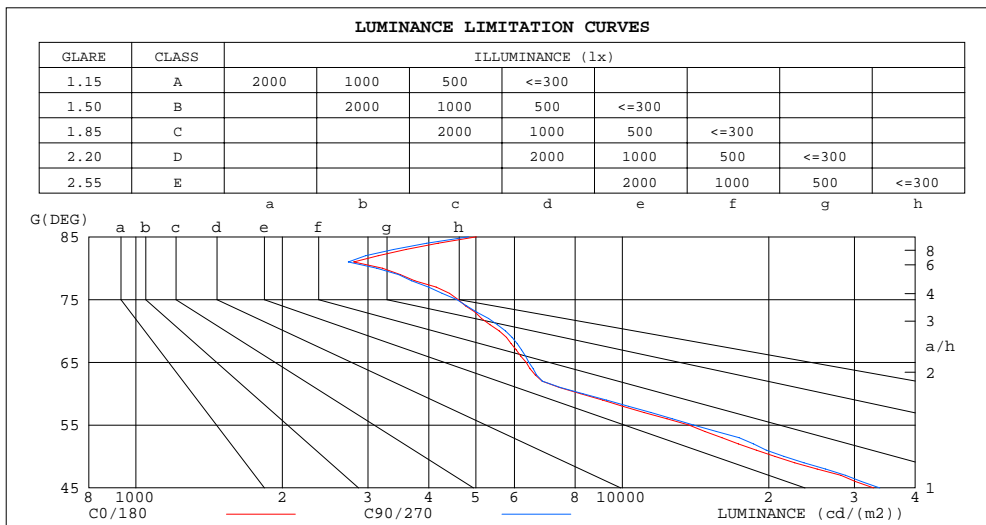
$\gamma$	C0	C45	C90	C135	C180	C225	C270	C315	$\gamma$	$\Phi$ zone	$\Phi$ total	%lum, lamp
10	3556	3574	3535	3536	3547	3558	3582	3538	0- 10	381.0	381.0	21.1,21.1
20	1714	1740	1709	1686	1666	1663	1728	1679	10- 20	715.3	1096	60.8,60.8
30	489.5	525.1	495.0	498.0	511.1	508.7	506.3	479.6	20- 30	457.6	1554	86.2,86.2
40	124.5	134.6	127.9	124.9	130.0	131.4	126.9	120.7	30- 40	161.3	1715	95.1,95.2
50	37.46	39.04	39.04	38.16	38.04	37.50	37.99	36.56	40- 50	55.13	1770	98.2,98.2
60	11.61	12.03	11.71	11.33	11.44	10.72	12.13	11.93	50- 60	20.35	1791	99.3,99.3
70	5.407	5.729	5.558	5.468	5.413	5.337	5.764	5.538	60- 70	7.728	1798	99.7,99.8
80	1.579	1.606	1.533	1.511	1.278	1.275	1.446	1.450	70- 80	3.608	1802	99.9,100
90	1.427	1.425	1.431	1.428	0.8781	0.8924	0.8996	0.8878	80- 90	1.201	1803	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:0.1120A P:23.60W PF:0.9310 Freq:50.00Hz Lamp Flux:1802.53x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:60	Shielding Angle:



LUMINANCE cd/(m2)		
G(DEG)	C0/180	C90/270
85	5009	4829
80	3212	3125
75	4596	4570
70	5584	5754
65	6341	6426
60	8201	8293
55	13704	14010
50	20582	21504
45	32868	33821

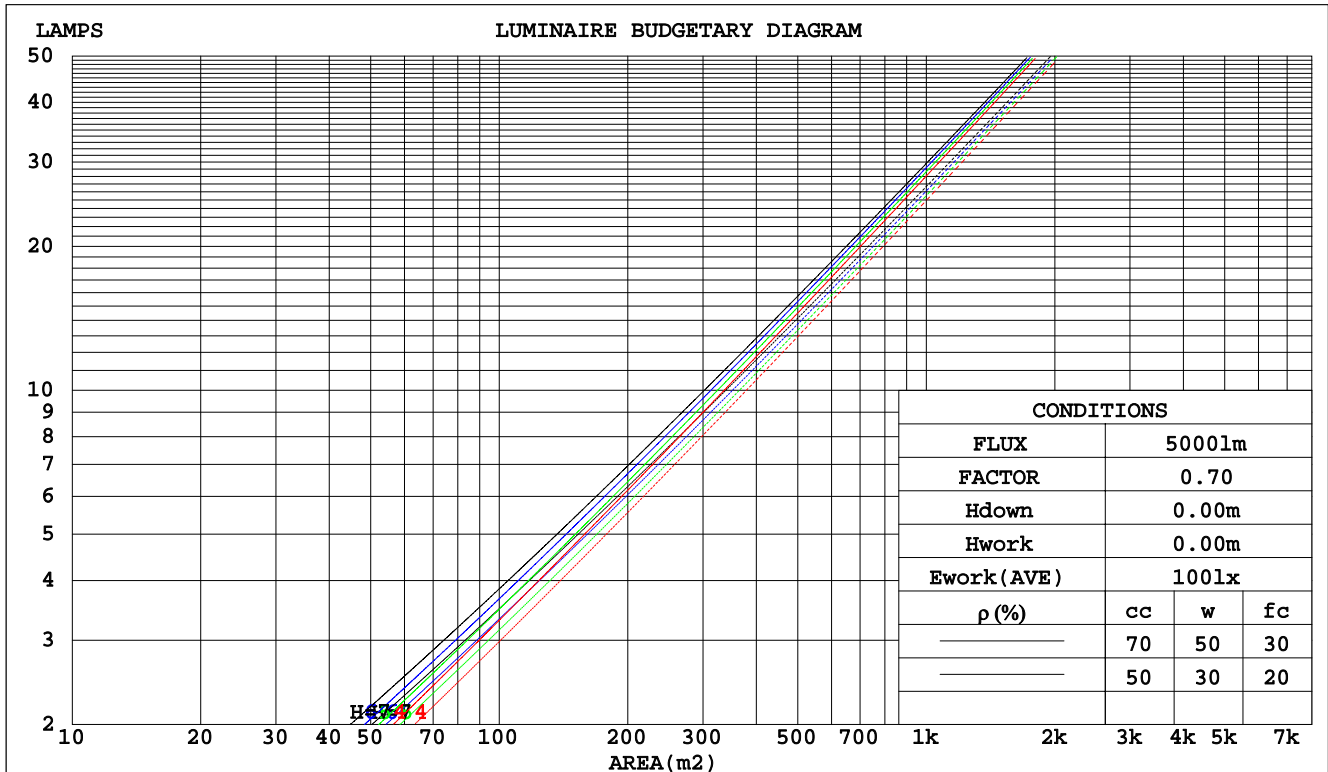
C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:AE  
Test Date:2020-06-16

$\gamma$  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:0.1120A P:23.60W PF:0.9310 Freq:50.00Hz Lamp Flux:1802.53x1 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	1.12	1.10	1.08	1.10	1.08	1.06	1.06	1.04	1.03	1.02	1.01	.00	.99	.98	.97	.95
2.0	1.05	1.02	.99	1.04	1.00	.98	1.00	.98	.96	.98	.95	.94	.95	.93	.92	.90
3.0	.00	.95	.92	.98	.94	.91	.96	.92	.90	.93	.91	.88	.91	.89	.87	.86
4.0	.94	.90	.86	.93	.89	.86	.91	.88	.85	.89	.86	.84	.88	.85	.83	.81
5.0	.90	.85	.81	.89	.84	.81	.87	.83	.80	.86	.82	.79	.84	.81	.79	.78
6.0	.86	.81	.77	.85	.80	.77	.83	.79	.76	.82	.78	.76	.81	.78	.75	.74
7.0	.82	.77	.73	.81	.76	.73	.80	.76	.73	.79	.75	.72	.78	.74	.72	.71
8.0	.78	.73	.70	.78	.73	.70	.77	.72	.69	.76	.72	.69	.75	.71	.69	.68
9.0	.75	.70	.67	.75	.70	.67	.74	.70	.66	.73	.69	.66	.72	.69	.66	.65
10.0	.72	.67	.64	.72	.67	.64	.71	.67	.64	.70	.66	.64	.70	.66	.63	.62



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:0.1120A P:23.60W PF:0.9310 Freq:50.00Hz Lamp Flux:1802.53x1 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	.158	.090	.029	.152	.087	.028	.139	.080	.026	.128	.074	.024	.117	.068	.022	
2.0	.149	.082	.025	.144	.079	.024	.133	.074	.023	.124	.069	.022	.115	.065	.020	
3.0	.141	.075	.022	.136	.073	.022	.127	.069	.021	.119	.065	.020	.112	.062	.019	
4.0	.133	.069	.020	.129	.068	.020	.122	.064	.019	.115	.062	.019	.108	.059	.018	
5.0	.126	.064	.019	.123	.063	.018	.116	.061	.018	.110	.058	.017	.105	.056	.017	
6.0	.120	.060	.017	.117	.059	.017	.111	.057	.017	.106	.055	.016	.101	.053	.016	
7.0	.114	.057	.016	.112	.056	.016	.107	.054	.016	.102	.052	.015	.098	.051	.015	
8.0	.109	.053	.015	.107	.053	.015	.103	.051	.015	.098	.050	.014	.095	.049	.014	
9.0	.105	.051	.014	.103	.050	.014	.099	.049	.014	.095	.048	.014	.091	.046	.013	
10.0	.100	.048	.013	.098	.048	.013	.095	.047	.013	.092	.046	.013	.089	.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	.191	.191	.191	.163	.163	.163	.111	.111	.111	.064	.064	.064	.020	.020	.020	
1.0	.170	.158	.146	.145	.135	.126	.099	.093	.087	.057	.054	.051	.018	.017	.016	
2.0	.153	.133	.115	.131	.114	.100	.090	.079	.070	.052	.046	.041	.017	.015	.013	
3.0	.140	.113	.093	.120	.098	.080	.082	.068	.056	.047	.040	.033	.015	.013	.011	
4.0	.128	.098	.076	.110	.085	.066	.076	.059	.046	.044	.035	.027	.014	.011	.009	
5.0	.119	.086	.063	.102	.075	.055	.070	.052	.039	.041	.031	.023	.013	.010	.008	
6.0	.111	.077	.053	.095	.067	.046	.066	.047	.032	.038	.027	.019	.012	.009	.006	
7.0	.104	.069	.045	.089	.060	.039	.062	.042	.028	.036	.025	.016	.012	.008	.005	
8.0	.097	.062	.038	.084	.054	.034	.058	.038	.024	.034	.022	.014	.011	.007	.005	
9.0	.092	.057	.033	.079	.050	.029	.055	.035	.021	.032	.021	.012	.010	.007	.004	
10.0	.087	.053	.029	.075	.046	.026	.052	.032	.018	.030	.019	.011	.010	.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:0.1120A P:23.60W PF:0.9310 Freq:50.00Hz Lamp Flux:1802.53x1 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	15.8	16.6	16.0	16.8	16.9	15.9	16.7	16.1	16.9	17.0
3H	15.8	16.5	16.0	16.7	16.9	15.9	16.6	16.1	16.8	17.0
4H	15.7	16.4	16.0	16.6	16.9	15.8	16.6	16.1	16.8	17.0
6H	15.7	16.3	16.0	16.6	16.8	15.8	16.5	16.1	16.7	16.9
8H	15.6	16.3	15.9	16.5	16.8	15.8	16.4	16.1	16.6	16.9
12H	15.6	16.2	15.9	16.5	16.8	15.7	16.3	16.0	16.6	16.9
4H 2H	15.7	16.4	15.9	16.6	16.8	15.8	16.5	16.0	16.7	16.9
3H	15.6	16.3	16.0	16.5	16.8	15.8	16.4	16.1	16.6	16.9
4H	15.6	16.2	16.0	16.5	16.8	15.7	16.3	16.1	16.6	16.9
6H	15.6	16.1	16.0	16.4	16.7	15.7	16.2	16.1	16.5	16.9
8H	15.5	16.0	15.9	16.4	16.7	15.7	16.1	16.0	16.5	16.8
12H	15.5	15.9	15.9	16.3	16.7	15.6	16.0	16.0	16.4	16.8
8H 4H	15.5	16.0	15.9	16.3	16.7	15.6	16.1	16.0	16.4	16.8
6H	15.5	15.9	15.9	16.3	16.7	15.6	16.0	16.0	16.4	16.8
8H	15.5	15.8	15.9	16.2	16.6	15.6	15.9	16.0	16.3	16.7
12H	15.4	15.7	15.9	16.2	16.6	15.5	15.8	16.0	16.3	16.7
12H 4H	15.5	15.9	15.9	16.3	16.6	15.6	16.0	16.0	16.4	16.8
6H	15.4	15.8	15.9	16.2	16.6	15.5	15.9	16.0	16.3	16.7
8H	15.4	15.7	15.9	16.1	16.6	15.5	15.8	16.0	16.2	16.7
Variations with the observer position at spacings:										
S = 1.0H	+ 2.2 / - 4.5					+ 2.2 / - 4.5				
1.5H	+ 3.6 / - 3.6					+ 3.6 / - 3.6				
2.0H	+ 3.8 / - 3.4					+ 3.9 / - 3.6				

CIE Pub.117, 1803 lm Total Lamp Luminous Flux Correct ( $8\log(F/F_0) = 2.0$ )

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:0.1120A P:23.60W PF:0.9310 Freq:50.00Hz Lamp Flux:1802.53x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:60	Shielding Angle:

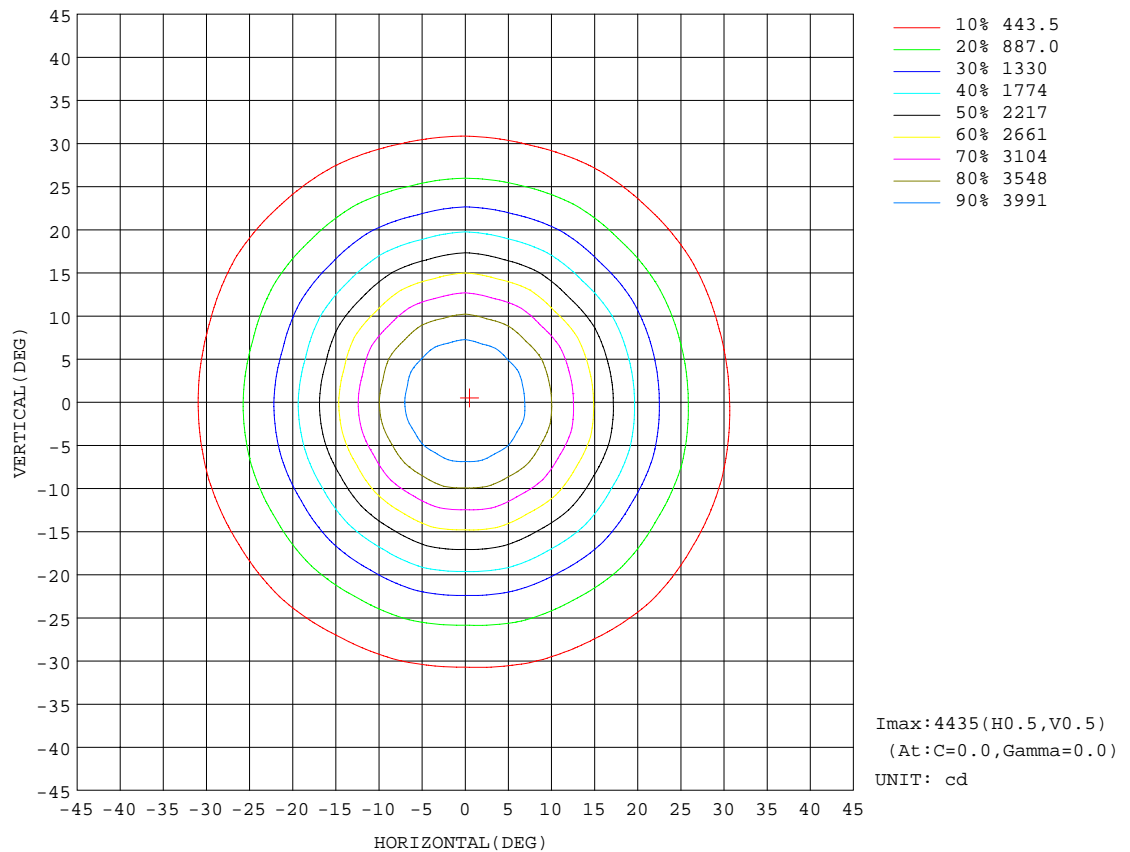
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	89	82	79	88	82	79	87	82	78	75
0.80	96	90	87	95	90	86	94	89	86	83
1.00	100	95	91	99	94	91	98	94	90	87
1.25	104	99	96	103	98	95	101	97	94	90
1.50	107	102	99	105	101	98	103	100	97	93
2.00	109	105	102	108	104	101	105	102	100	95
2.50	111	107	104	109	106	103	106	103	101	95
3.00	112	109	106	110	107	105	107	105	103	97
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: 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:0.1120A P:23.60W PF:0.9310 Freq:50.00Hz Lamp Flux:1802.53x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:60	Shielding Angle:



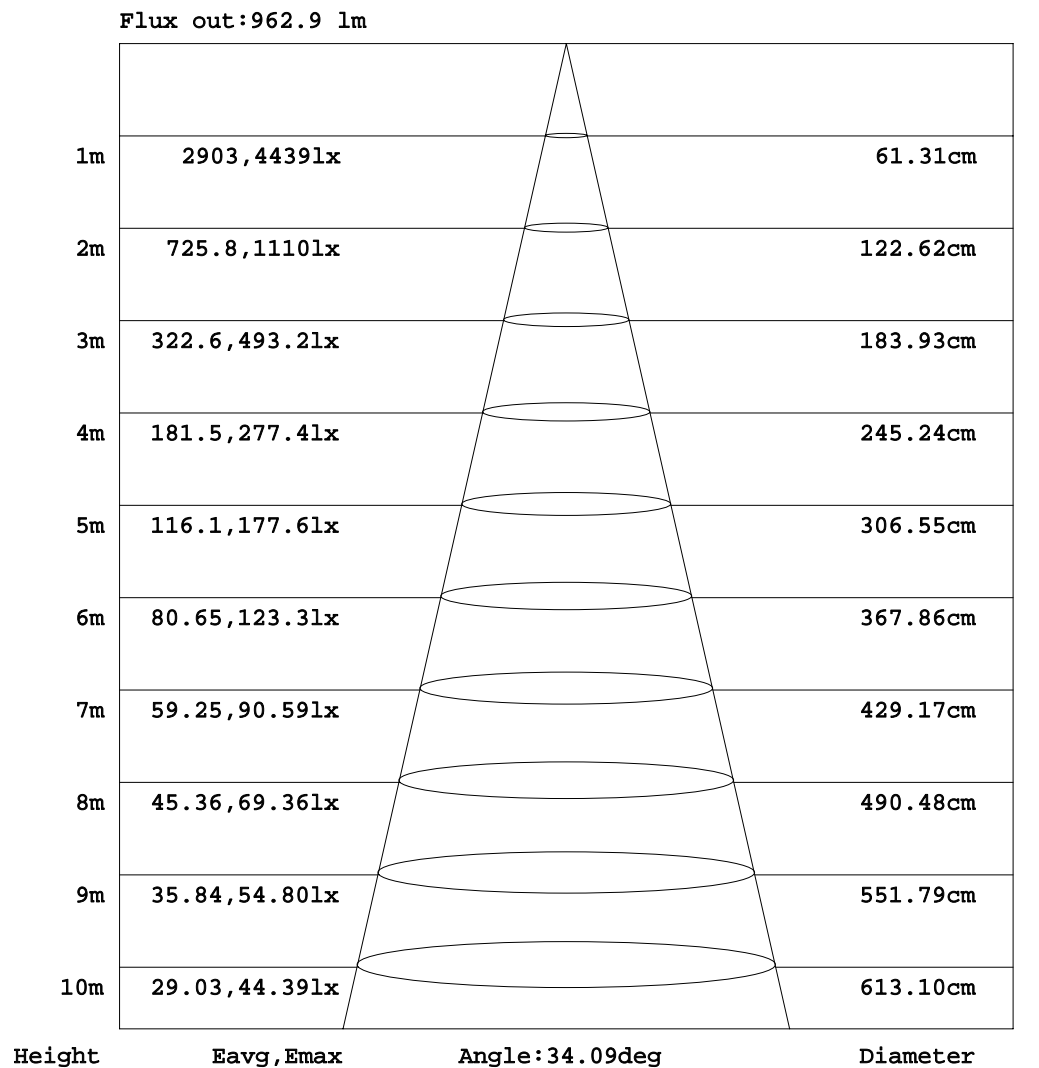
C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: HIGH  
Temperature: 25.3DEG  
Operators: AE  
Test Date: 2020-06-16

$\gamma$  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:0.1120A P:23.60W PF:0.9310 Freq:50.00Hz Lamp Flux:1802.53x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:60	Shielding Angle:



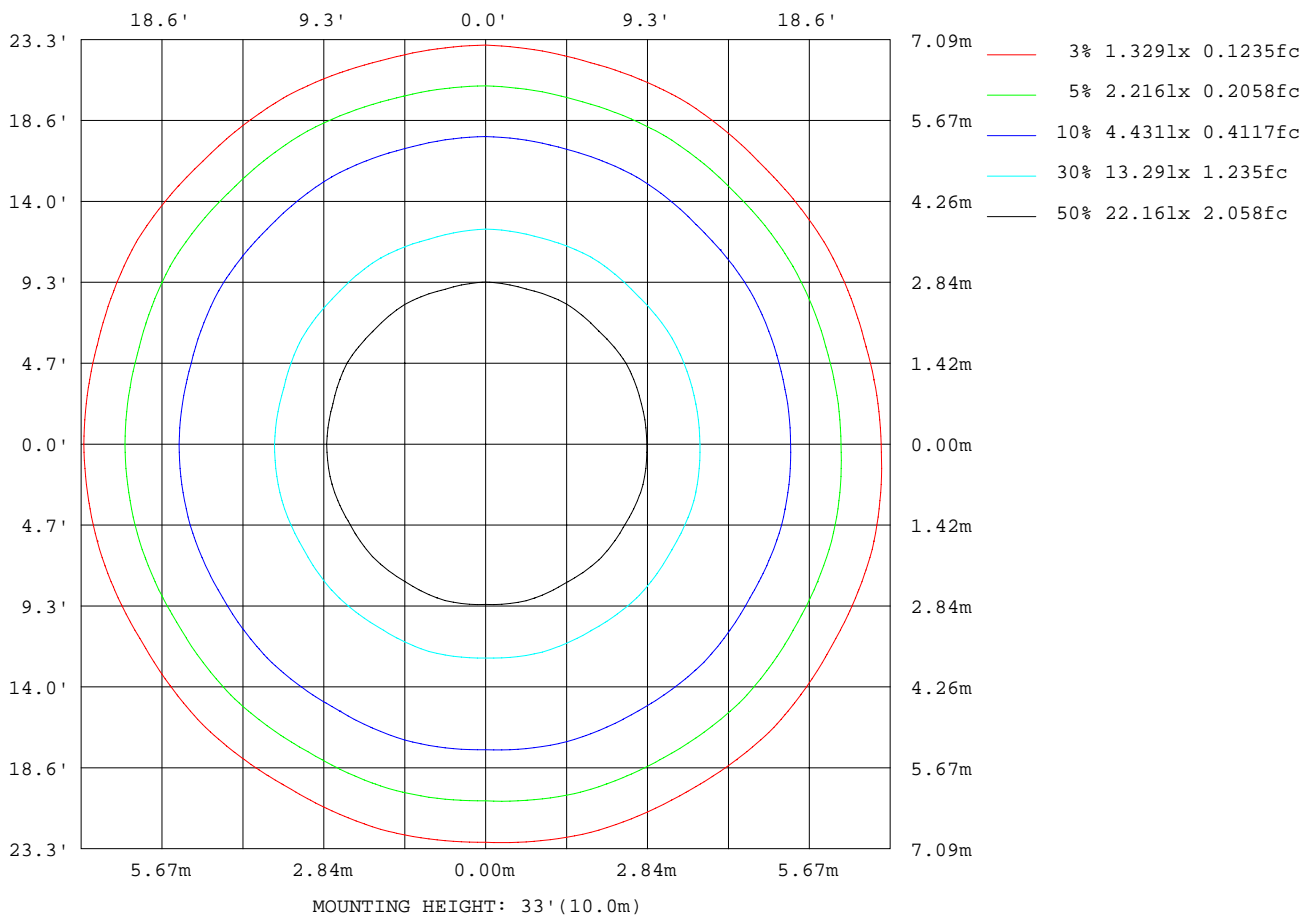
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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

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:

### ISOLUX DIAGRAM

Test:U:225.1V I:0.1120A P:23.60W PF:0.9310 Freq:50.00Hz Lamp Flux:1802.53x1 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:0.1120A P:23.60W PF:0.9310 Freq:50.00Hz Lamp Flux:1802.53x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:60	Shielding Angle:

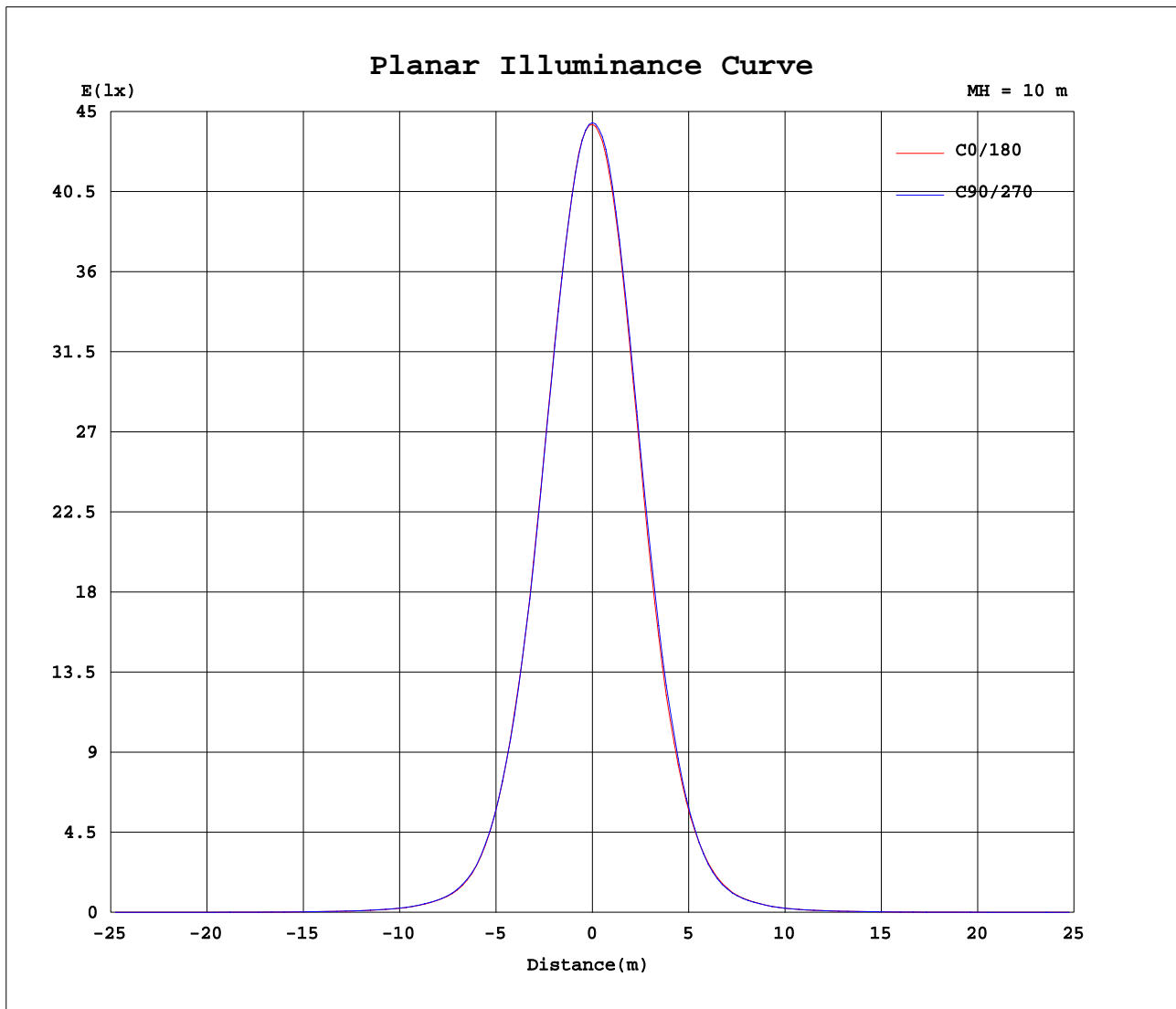
AvgL	cd/m2
L_0~180(65)av	6307
L_0~180(75)av	4558
L_0~180(85)av	4276
L_90~270(65)av	6551
L_90~270(75)av	4829
L_90~270(85)av	4260
L_45(65)av	6366
L_45(75)av	4689
L_45(85)av	4274

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:

```

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:

```

```

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:

```