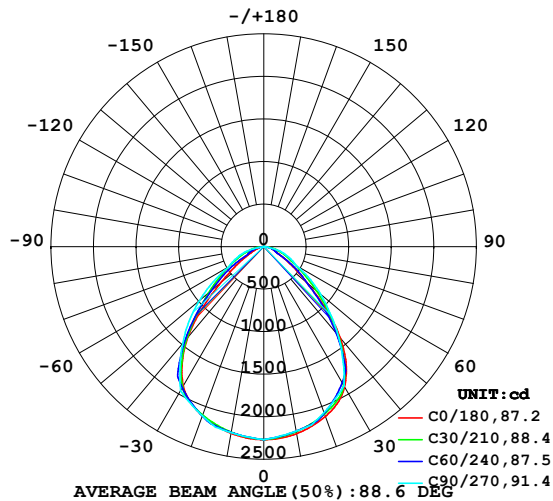


LUMINAIRE PHOTOMETRIC TEST REPORT

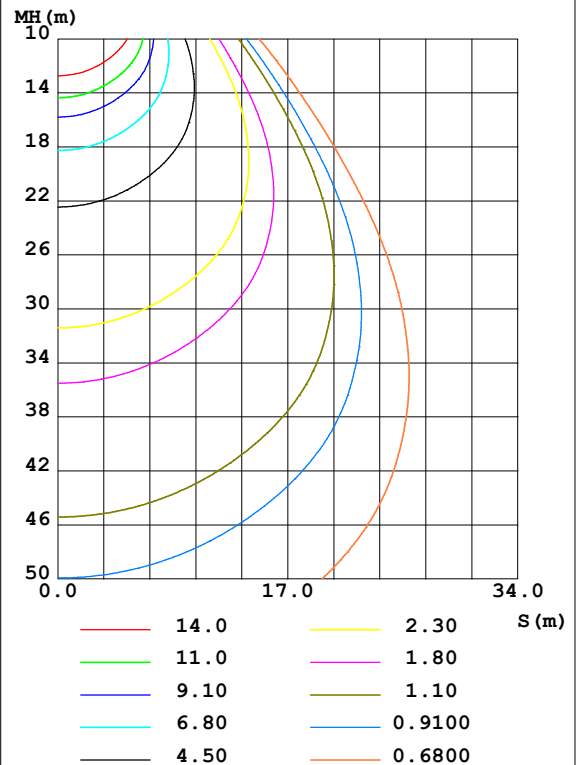
Test:U:220.23V I:0.1430A P:29.952W PF:0.9508 Freq:49.99Hz Lamp Flux:4560.19x1 lm		
NAME: MGL2070-1 4000K 700mA	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:1
MFR.: EVERFINE	SUR.:	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 152.25 lm/W			
MODEL		I _{max} (cd)	2268	S/MH (C0/180)	1.23
NOMINAL POWER(W)		LOR(%)	100.0	S/MH (C90/270)	1.25
RATED VOLTAGE(V)	220.0	TOTAL FLUX(lm)	4560.2	η UP,DN (C0-180)	0.0,48.8
NOMINAL FLUX(lm)	4560.19	CIE CLASS	DIRECT	η UP,DN (C180-360)	0.0,51.2
LAMPS INSIDE	1	η up (%)	0.0	CIBSE SHR NOM	1.25
TEST VOLTAGE(V)	220	η down (%)	100.0	CIBSE SHR MAX	1.30

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



H(β) Range:-90 - 90DEG
H(β) Interval: 1.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:28 January 2024

V(B) Range:-75 - 75DEG
V(B) Interval: 5.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.366
Humidity:65.0%
Test Distance:7.500m [K=1.1000]
Remarks: TÜV RHEINLAND

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum, lamp
10	2231	2203	2201	2201	2227	2213	2220	2216	0- 10	213.3	213.3	4.68, 4.68
20	2122	2102	2075	2099	2114	2124	2116	2128	10- 20	612.1	825.4	18.1, 18.1
30	1901	1830	1889	1839	1893	1885	1957	1892	20- 30	925.2	1751	38.4, 38.4
40	1398	1389	1361	1422	1387	1474	1482	1480	30- 40	1043	2793	61.3, 61.3
50	675.8	730.5	876.8	763.3	660.0	820.6	988.6	825.6	40- 50	836.0	3629	79.6, 79.6
60	272.5	360.0	437.3	371.8	256.3	420.2	475.3	427.3	50- 60	502.6	4132	90.6, 90.6
70	131.7	205.6	268.4	200.8	106.8	221.4	296.3	230.3	60- 70	266.6	4399	96.5, 96.5
80	78.51	84.59	0	81.00	55.18	93.11	0	94.04	70- 80	146.6	4545	99.7, 99.7
90	0	0	0	0	0	0	0	0	80- 90	15.02	4560	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		

Conical surface Flux(90deg): 3253 lm

%lum = 71.3%

%lamp = 71.3%

Conical surface Flux(120deg): 4132 lm

%lum = 90.6%

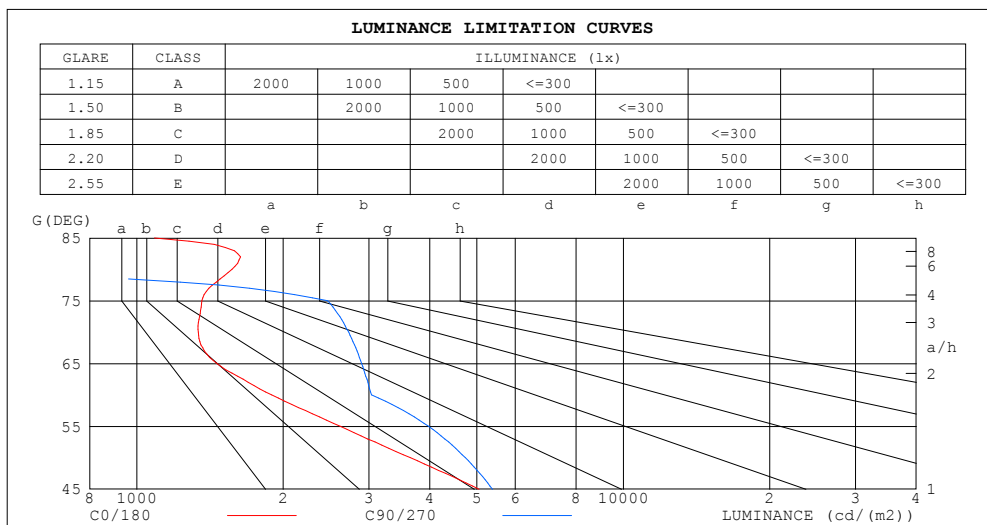
%lamp = 90.6%

H(β) Range:-90 - 90DEG
 H(β) Interval: 1.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:28 January 2024

V(B) Range:-75 - 75DEG
 V(B) Interval: 5.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.366
 Humidity:65.0%
 Test Distance:7.500m [K=1.1000]
 Remarks: TÜV RHEINLAND

LUMINANCE LIMITATION CURVES

Test:U:220.23V I:0.1430A P:29.952W PF:0.9508 Freq:49.99Hz Lamp Flux:4560.19x1 lm		
NAME: MGL2070-1 4000K 700mA	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:1
MFR.: EVERFINE	SUR.:	Shielding Angle:



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	1087	0
80	1570	0
75	1360	2468
70	1337	2725
65	1460	2899
60	1893	3037
55	2619	3978
50	3651	4736
45	5050	5384

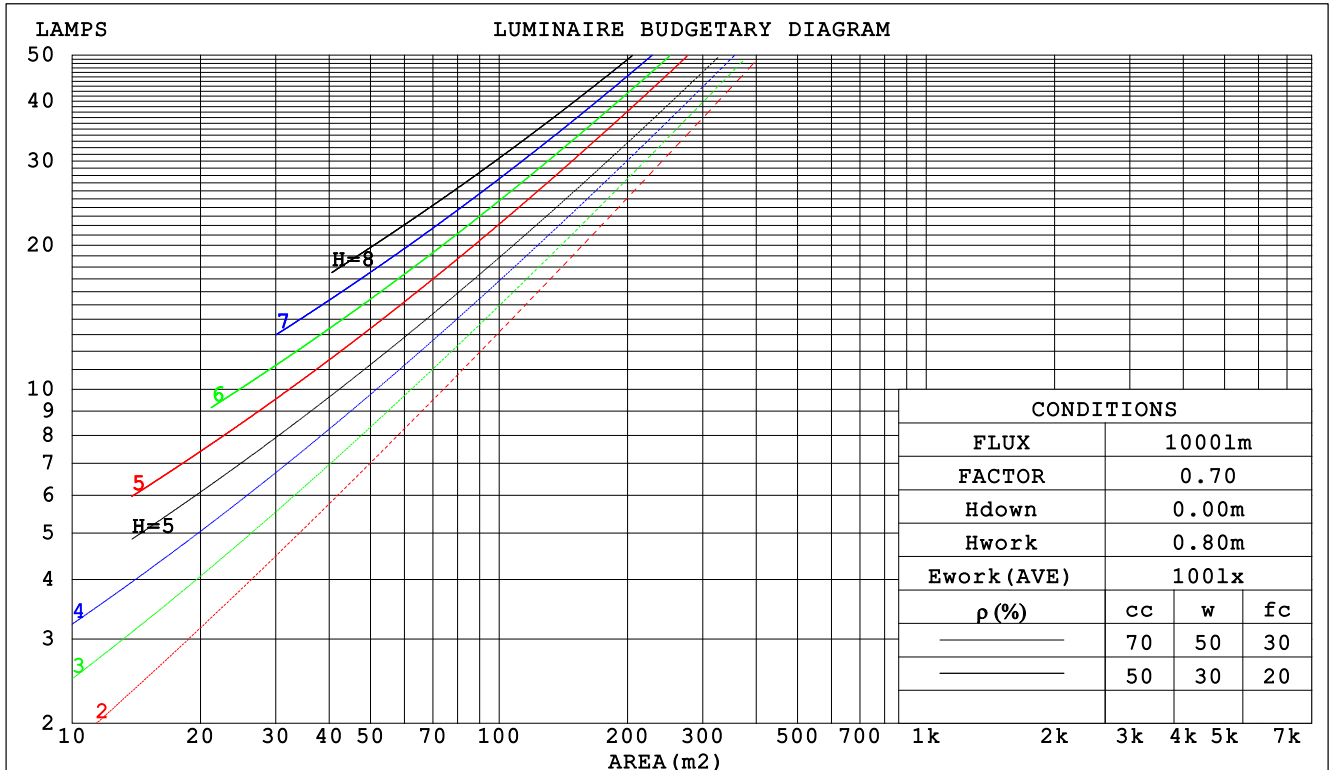
H(β) Range:-90 - 90DEG
H(β) Interval: 1.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:28 January 2024

V(B) Range:-75 - 75DEG
V(B) Interval: 5.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.366
Humidity:65.0%
Test Distance:7.500m [K=1.1000]
Remarks: TÜV RHEINLAND

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:220.23V I:0.1430A P:29.952W PF:0.9508 Freq:49.99Hz Lamp Flux:4560.19x1 lm		
NAME: MGL2070-1 4000K 700mA	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:1
MFR.: EVERFINE	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	1.07	1.04	1.01	1.05	1.02	.99	1.01	.98	.96	.97	.95	.93	.93	.92	.90	.88
2.0	.96	.90	.85	.94	.89	.84	.91	.86	.83	.87	.84	.81	.85	.82	.79	.77
3.0	.86	.79	.74	.85	.78	.73	.82	.76	.72	.79	.74	.71	.77	.73	.69	.67
4.0	.78	.70	.64	.76	.69	.64	.74	.68	.63	.72	.67	.62	.70	.65	.61	.60
5.0	.70	.63	.57	.69	.62	.56	.67	.61	.56	.66	.60	.55	.64	.59	.55	.53
6.0	.64	.56	.51	.63	.56	.50	.62	.55	.50	.60	.54	.50	.59	.53	.49	.47
7.0	.59	.51	.45	.58	.51	.45	.57	.50	.45	.55	.49	.45	.54	.48	.44	.43
8.0	.54	.46	.41	.53	.46	.41	.52	.45	.41	.51	.45	.40	.50	.44	.40	.39
9.0	.50	.42	.37	.49	.42	.37	.48	.42	.37	.47	.41	.37	.46	.41	.37	.35
10.0	.46	.39	.34	.46	.39	.34	.45	.38	.34	.44	.38	.34	.43	.38	.34	.32



H(β) Range:-90 - 90DEG
H(β) Interval: 1.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:28 January 2024

V(B) Range:-75 - 75DEG
V(B) Interval: 5.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.366
Humidity:65.0%
Test Distance:7.500m [K=1.1000]
Remarks: TÜV RHEINLAND

WEC AND CCEC

Test:U:220.23V I:0.1430A P:29.952W PF:0.9508 Freq:49.99Hz Lamp Flux:4560.19x1 lm					
NAME: MGL2070-1 4000K 700mA			TYPE:LED		WEIGHT:
SPEC.:			DIM.:		SERIAL No.:1
MFR.: EVERFINE			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	.248	.141	.045	.241	.137	.044	.228	.131	.042	.216	.124	.040	.205	.119	.038		
2.0	.240	.131	.040	.234	.129	.040	.222	.124	.038	.212	.119	.037	.203	.115	.036		
3.0	.227	.121	.036	.222	.119	.036	.212	.115	.035	.203	.111	.034	.194	.108	.033		
4.0	.213	.111	.033	.209	.109	.032	.200	.106	.032	.192	.103	.031	.185	.100	.031		
5.0	.201	.102	.030	.197	.101	.029	.189	.098	.029	.182	.096	.029	.175	.094	.028		
6.0	.189	.095	.027	.185	.093	.027	.178	.091	.027	.172	.089	.026	.166	.087	.026		
7.0	.178	.088	.025	.175	.087	.025	.168	.085	.025	.163	.083	.024	.157	.082	.024		
8.0	.168	.082	.023	.165	.081	.023	.159	.080	.023	.154	.078	.023	.149	.077	.022		
9.0	.159	.077	.021	.156	.076	.021	.151	.075	.021	.147	.073	.021	.142	.072	.021		
10.0	.150	.072	.020	.148	.072	.020	.144	.070	.020	.139	.069	.020	.135	.068	.020		

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	.176	.157	.139	.151	.134	.120	.103	.093	.083	.059	.054	.048	.019	.017	.016	
2.0	.165	.132	.104	.142	.114	.090	.097	.079	.063	.056	.046	.037	.018	.015	.012	
3.0	.156	.114	.080	.134	.098	.070	.092	.068	.049	.053	.040	.029	.017	.013	.009	
4.0	.148	.100	.064	.127	.087	.055	.087	.060	.039	.051	.035	.023	.016	.012	.008	
5.0	.141	.089	.052	.121	.077	.045	.083	.054	.032	.048	.032	.019	.016	.010	.006	
6.0	.134	.081	.043	.115	.070	.037	.079	.049	.026	.046	.029	.016	.015	.009	.005	
7.0	.127	.074	.036	.110	.064	.031	.076	.045	.022	.044	.026	.013	.014	.009	.004	
8.0	.122	.068	.031	.105	.059	.027	.072	.041	.019	.042	.024	.011	.014	.008	.004	
9.0	.116	.063	.027	.100	.055	.024	.069	.038	.017	.040	.023	.010	.013	.007	.003	
10.0	.111	.059	.024	.096	.051	.021	.066	.036	.015	.039	.021	.009	.013	.007	.003	

H(β) Range:-90 - 90DEG
H(β) Interval: 1.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:28 January 2024

V(B) Range:-75 - 75DEG
V(B) Interval: 5.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.366
Humidity:65.0%
Test Distance:7.500m [K=1.1000]
Remarks: TÜV RHEINLAND

UGR(Unified Glare Rating) Table

Test:U:220.23V I:0.1430A P:29.952W PF:0.9508 Freq:49.99Hz Lamp Flux:4560.19x1 lm										
NAME: MGL2070-1 4000K 700mA					TYPE:LED			WEIGHT:		
SPEC.:					DIM.:			SERIAL No.:1		
MFR.: EVERFINE					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	16.1	17.4	16.3	17.6	17.8	16.1	17.4	16.3	17.6	17.8
3H	16.5	17.7	16.8	18.0	18.2	16.9	18.1	17.2	18.3	18.5
4H	16.8	17.9	17.1	18.2	18.4	17.3	18.5	17.6	18.7	19.0
6H	16.9	18.0	17.3	18.3	18.5	17.4	18.5	17.7	18.7	19.0
8H	17.0	18.0	17.3	18.3	18.6	17.3	18.4	17.7	18.6	18.9
12H	17.0	17.9	17.3	18.2	18.5	17.3	18.3	17.6	18.6	18.9
4H 2H	16.3	17.4	16.6	17.7	17.9	16.3	17.4	16.6	17.6	17.9
3H	17.1	18.1	17.5	18.4	18.7	17.1	18.1	17.4	18.4	18.7
4H	17.5	18.4	17.9	18.8	19.1	17.6	18.5	18.0	18.8	19.2
6H	17.8	18.6	18.2	19.0	19.3	17.7	18.5	18.1	18.9	19.2
8H	17.9	18.6	18.3	19.0	19.4	17.7	18.4	18.1	18.8	19.1
12H	17.9	18.6	18.3	18.9	19.3	17.6	18.3	18.0	18.7	19.1
8H 4H	17.7	18.4	18.1	18.8	19.2	17.8	18.5	18.2	18.9	19.3
6H	18.2	18.8	18.6	19.2	19.6	17.9	18.5	18.3	18.9	19.3
8H	18.3	18.8	18.8	19.3	19.7	17.9	18.4	18.3	18.8	19.3
12H	18.3	18.8	18.8	19.2	19.7	17.8	18.3	18.3	18.7	19.2
12H 4H	17.7	18.4	18.1	18.7	19.1	17.8	18.5	18.2	18.9	19.3
6H	18.2	18.7	18.6	19.1	19.6	17.9	18.5	18.4	18.9	19.3
8H	18.3	18.8	18.8	19.2	19.7	17.9	18.3	18.4	18.8	19.3
Variations with the observer position at spacings:										
S = 1.0H	+ 0.6 / - 0.7					+ 0.5 / - 0.7				
1.5H	+ 0.5 / - 0.9					+ 0.6 / - 1.0				
2.0H	+ 1.3 / - 1.8					+ 1.8 / - 2.4				

CIE Pub.117, 4560 lm Total Lamp Luminous Flux Corrected ($8\log(F/F_0) = 5.3$)

H(β) Range:-90 - 90DEG
H(β) Interval: 1.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:28 January 2024

V(B) Range:-75 - 75DEG
V(B) Interval: 5.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.366
Humidity:65.0%
Test Distance:7.500m [K=1.1000]
Remarks: TÜV RHEINLAND

UTILIZATION FACTORS TABLE

Test:U:220.23V I:0.1430A P:29.952W PF:0.9508 Freq:49.99Hz Lamp Flux:4560.19x1 lm		
NAME: MGL2070-1 4000K 700mA	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:1
MFR.: EVERFINE	SUR.:	Shielding Angle:

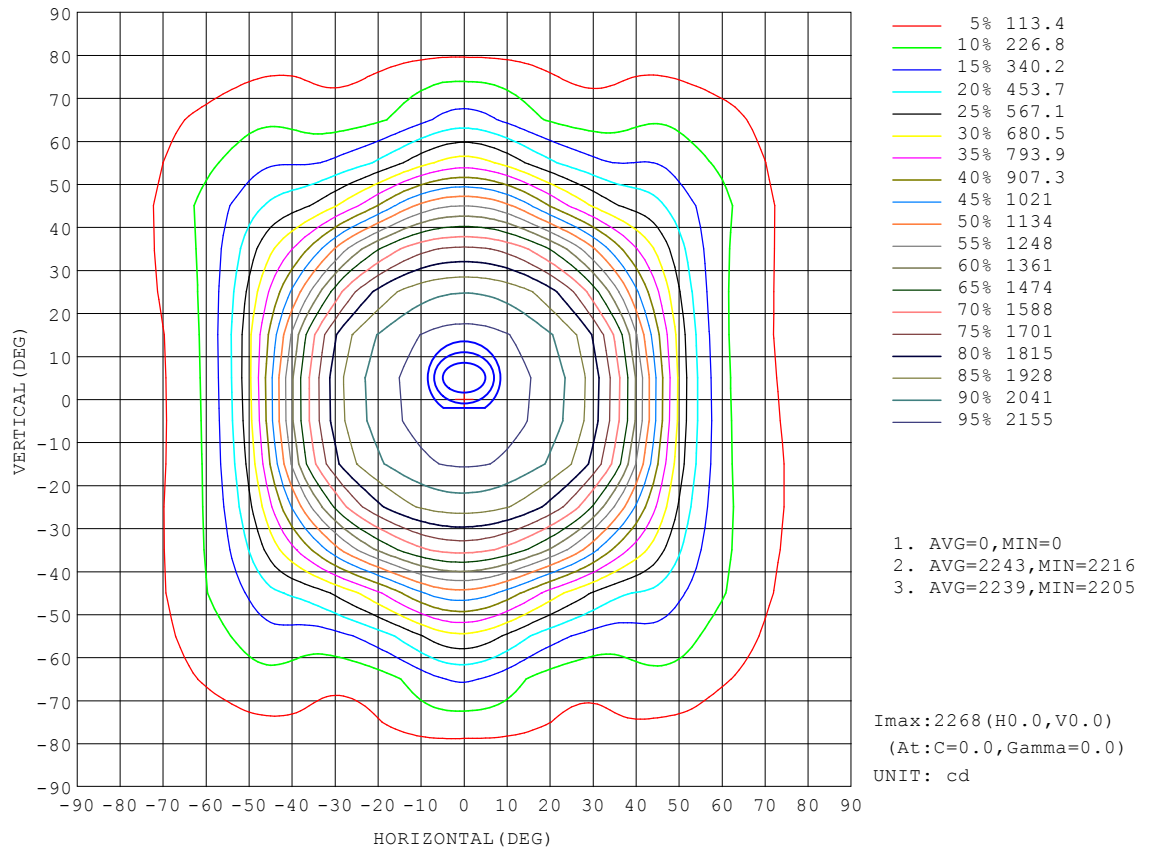
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	67	57	51	67	57	51	65	57	51	46
0.80	77	67	61	76	67	61	75	66	61	55
1.00	85	76	70	84	75	70	82	76	69	63
1.25	91	83	77	90	82	77	87	81	76	70
1.50	95	88	82	94	87	82	91	85	81	74
2.00	101	94	89	99	93	88	96	91	87	80
2.50	104	98	93	102	96	92	98	94	90	83
3.00	106	101	97	104	100	96	101	97	94	86
4.00	109	105	101	107	103	100	103	100	97	89
5.00	111	108	104	109	106	103	105	102	100	91
ROOM INDEX	UF (total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

$H(\beta)$ Range:-90 - 90DEG
 $H(\beta)$ Interval: 1.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:28 January 2024

$V(B)$ Range:-75 - 75DEG
 $V(B)$ Interval: 5.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.366
 Humidity:65.0%
 Test Distance:7.500m [K=1.1000]
 Remarks: TÜV RHEINLAND

ISOCANDELA DIAGRAM

Test:U:220.23V I:0.1430A P:29.952W PF:0.9508 Freq:49.99Hz Lamp Flux:4560.19x1 lm		
NAME: MGL2070-1 4000K 700mA	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:1
MFR.: EVERFINE	SUR.:	Shielding Angle:

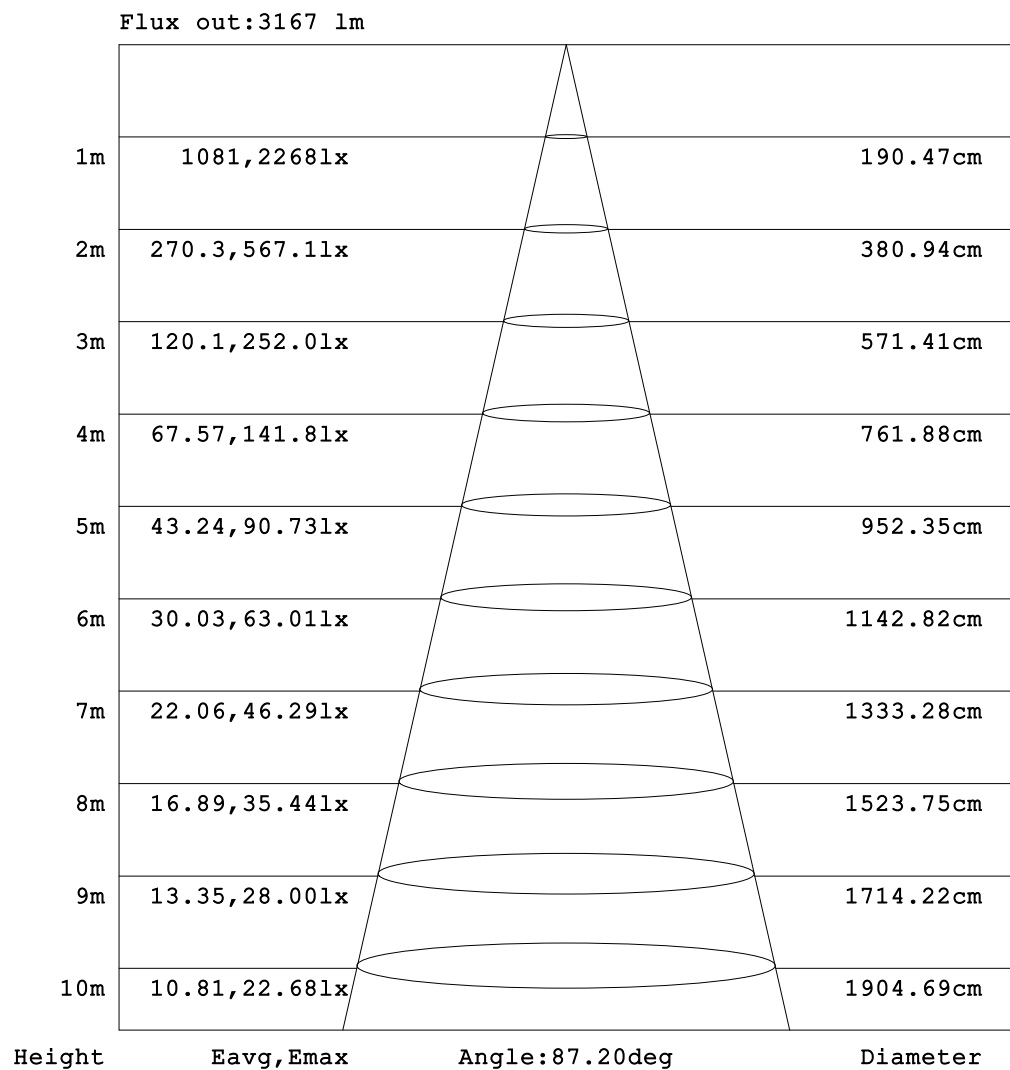


H(β) Range:-90 - 90DEG
H(β) Interval: 1.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:28 January 2024

V(B) Range:-75 - 75DEG
V(B) Interval: 5.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.366
Humidity:65.0%
Test Distance:7.500m [K=1.1000]
Remarks: TÜV RHEINLAND

AAI Figure

Test:U:220.23V I:0.1430A P:29.952W PF:0.9508 Freq:49.99Hz Lamp Flux:4560.19x1 lm		
NAME: MGL2070-1 4000K 700mA	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:1
MFR.: EVERFINE	SUR.:	Shielding Angle:



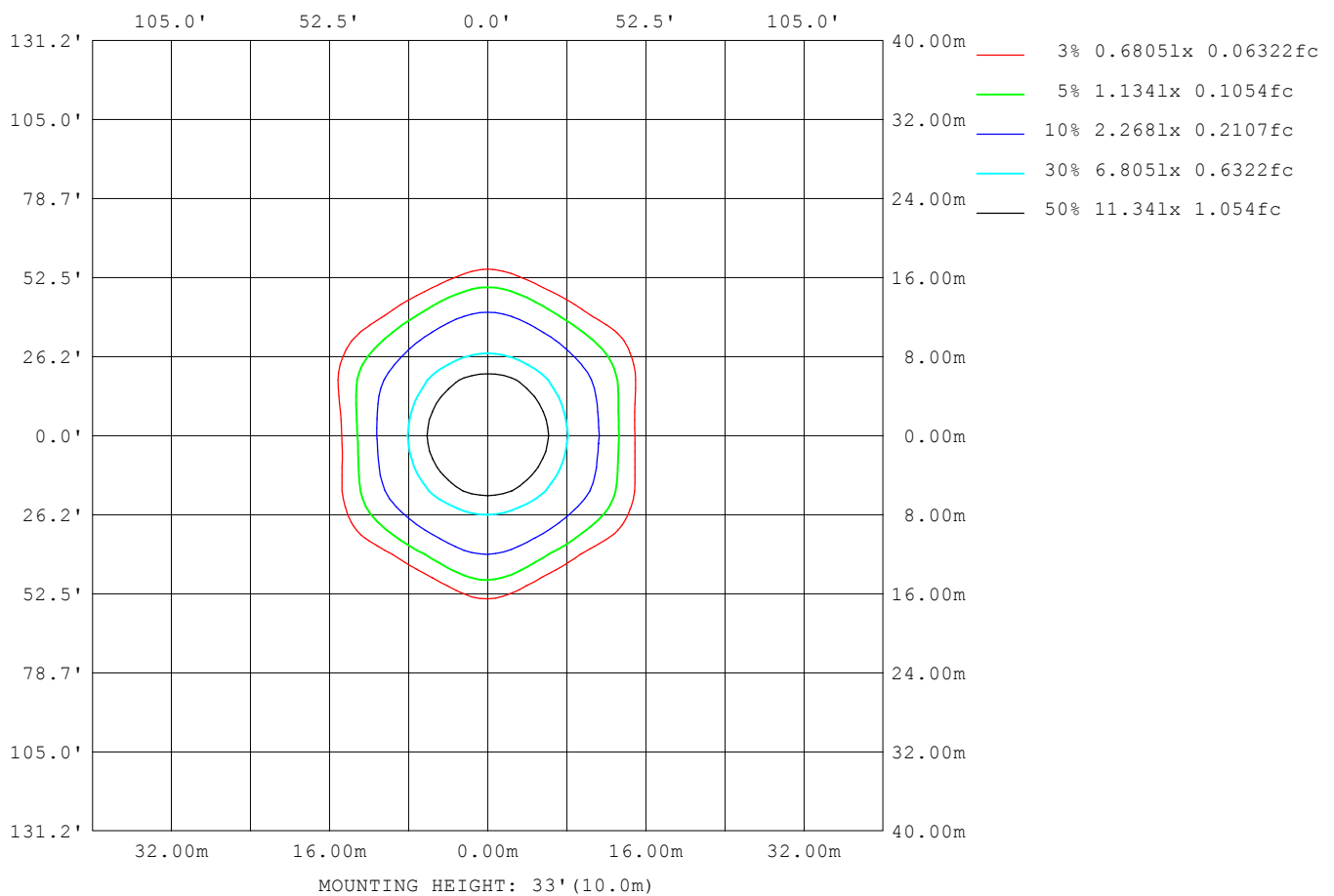
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

H(β) Range: -90 - 90DEG
H(β) Interval: 1.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 28 January 2024

V(B) Range: -75 - 75DEG
V(B) Interval: 5.0DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.366
Humidity: 65.0%
Test Distance: 7.500m [K=1.1000]
Remarks: TÜV RHEINLAND

ISOLUX DIAGRAM

Test:U:220.23V I:0.1430A P:29.952W PF:0.9508 Freq:49.99Hz Lamp Flux:4560.19x1 lm		
NAME: MGL2070-1 4000K 700mA	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:1
MFR.: EVERFINE	SUR.:	Shielding Angle:



H(β) Range:-90 - 90DEG
H(β) Interval: 1.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:28 January 2024

V(B) Range:-75 - 75DEG
V(B) Interval: 5.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.366
Humidity:65.0%
Test Distance:7.500m [K=1.1000]
Remarks: TÜV RHEINLAND

LED Avg.L Report

Test:U:220.23V I:0.1430A P:29.952W PF:0.9508 Freq:49.99Hz Lamp Flux:4560.19x1 lm		
NAME: MGL2070-1 4000K 700mA	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:1
MFR.: EVERFINE	SUR.:	Shielding Angle:

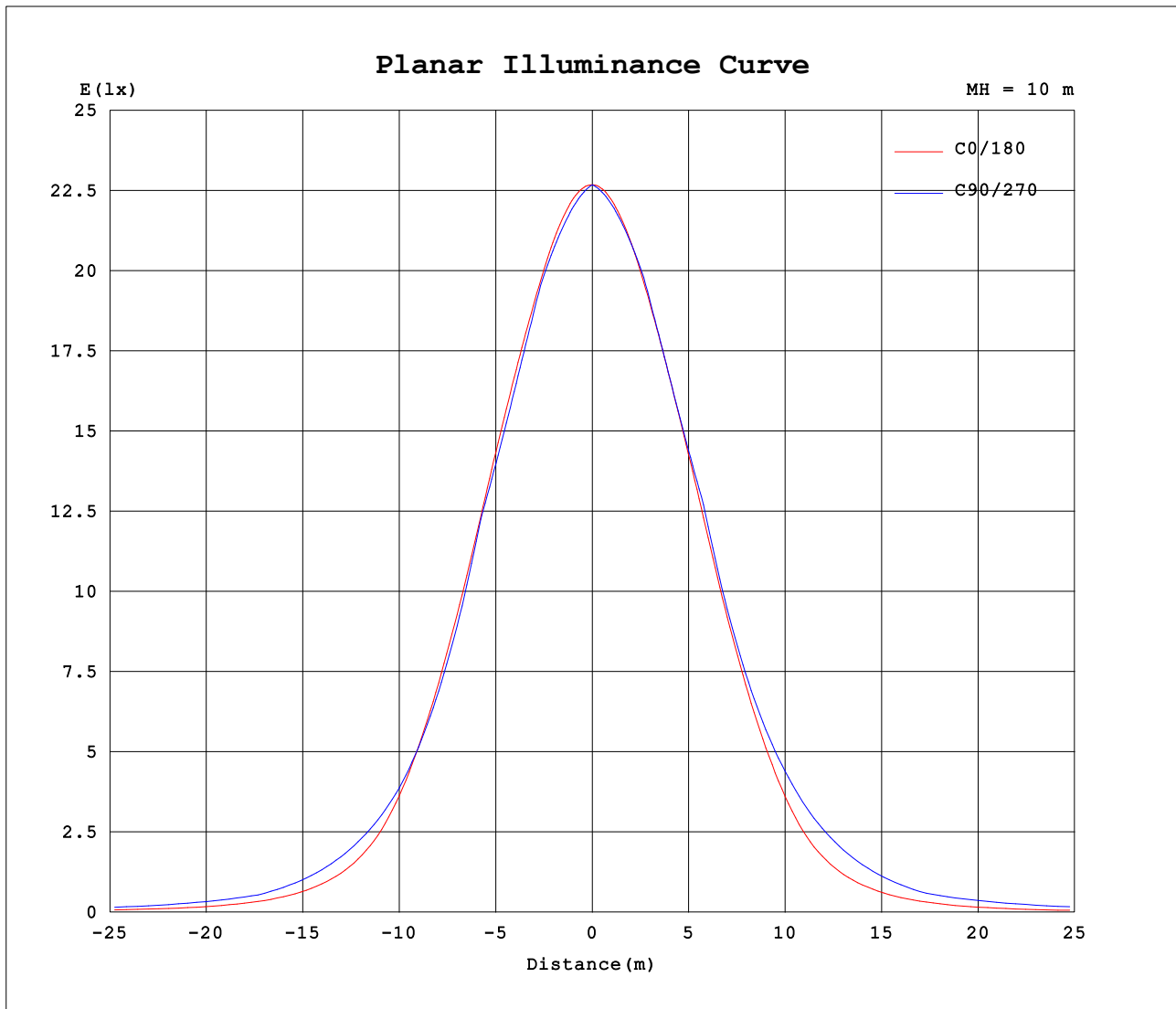
AvgL	cd/m2
L_0~180 (65) av	1382
L_0~180 (75) av	1196
L_0~180 (85) av	597
L_90~270 (65) av	3035
L_90~270 (75) av	2621
L_90~270 (85) av	0
L_45 (65) av	2361
L_45 (75) av	2175
L_45 (85) av	0

Standard: GB/T 29293-2012

H(β) Range:-90 - 90DEG
H(β) Interval: 1.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:28 January 2024

V(B) Range:-75 - 75DEG
V(B) Interval: 5.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.366
Humidity:65.0%
Test Distance:7.500m [K=1.1000]
Remarks: TÜV RHEINLAND

Planar Illuminance Curve



H(β) Range:-90 - 90DEG
H(β) Interval: 1.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:28 January 2024

V(B) Range:-75 - 75DEG
V(B) Interval: 5.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.366
Humidity:65.0%
Test Distance:7.500m [K=1.1000]
Remarks: TÜV RHEINLAND

