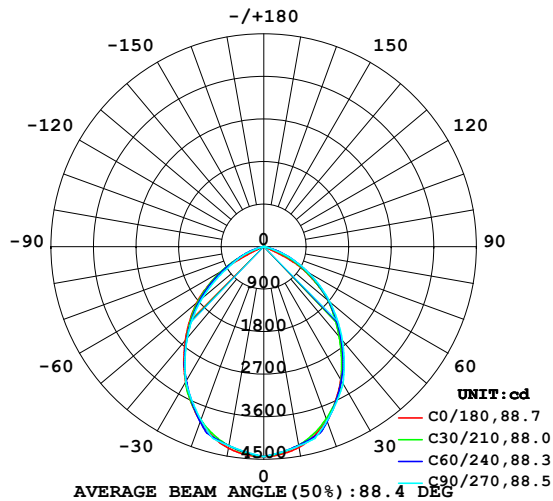


LUMINAIRE PHOTOMETRIC TEST REPORT

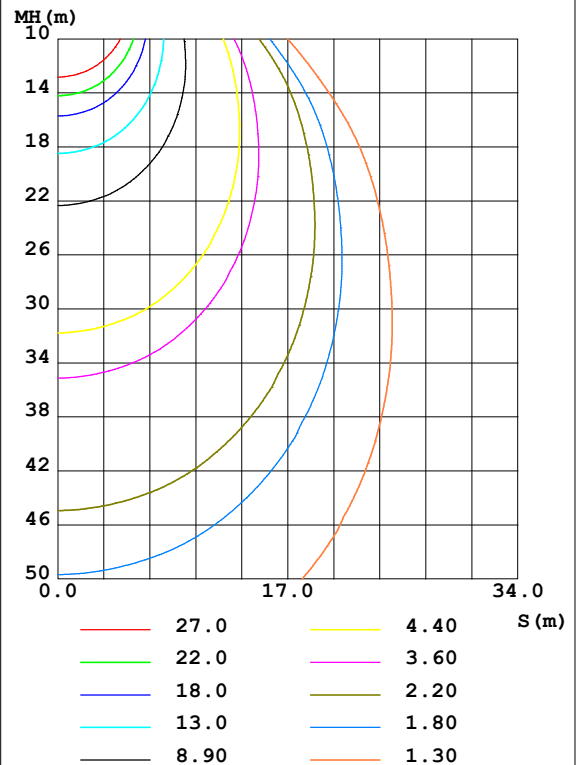
Test:U:120.92V I:0.6599A P:79.579W PF:0.9974 Freq:59.98Hz Lamp Flux:8645.4x1 lm		
NAME: GHSL-13-U	TYPE:Flood Light	WEIGHT:N/A
SPEC.:80W/1600K/90°	DIM.: 190*150mm	SERIAL No.:N/A
MFR.: Grin Industrial Co., Ltd.	SUR.:N/A	Shielding Angle:N/A

DATA OF LAMP		PHOTOMETRIC DATA Eff: 108.69 lm/W			
MODEL	GHSL-13-U	I _{max} (cd)	4443	S/MH(C0/180)	1.13
NOMINAL POWER(W)	80W	LOR(%)	100.0	S/MH(C90/270)	1.12
RATED VOLTAGE(V)	120	TOTAL FLUX(lm)	8649.3	η UP,DN(C0-180)	0.0,50.7
NOMINAL FLUX(lm)	8645.4	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,49.4
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	1.25
TEST VOLTAGE(V)	120	η down(%)	100.0	CIBSE SHR MAX	1.25

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:Gu
Test Date:2025-03-17

V(B) Range:-75 - 75DEG
V(B) Interval: 5.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.00.411
Humidity:65.0%
Test Distance:7.448m [K=1.0000]
Remarks:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum, lamp
10	4311	4260	4280	4268	4326	4273	4276	4251	0- 10	414.3	414.3	4.79, 4.79
20	3899	3949	3917	3956	3927	3970	3896	3925	10- 20	1163	1577	18.2, 18.2
30	3259	3252	3353	3274	3313	3271	3302	3218	20- 30	1657	3234	37.4, 37.4
40	2502	2523	2586	2561	2583	2556	2518	2480	30- 40	1815	5049	58.4, 58.4
50	1781	1763	1827	1805	1858	1779	1696	1693	40- 50	1658	6706	77.5, 77.6
60	955.7	1023	1073	1043	999.4	977.3	836.4	908.6	50- 60	1235	7941	91.8, 91.9
70	91.98	364.2	400.5	323.7	87.25	251.1	304.6	233.6	60- 70	592.5	8534	98.7, 98.7
80	19.94	24.75	0	19.46	15.97	11.82	0	12.41	70- 80	112.7	8647	100, 100
90	0.7469	0	0	0	0.7634	0	0	0	80- 90	2.750	8649	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): 5913.4 lm

%lum = 68.4%

%lamp = 68.4%

Conical surface Flux(120deg): 7941.3 lm

%lum = 91.8%

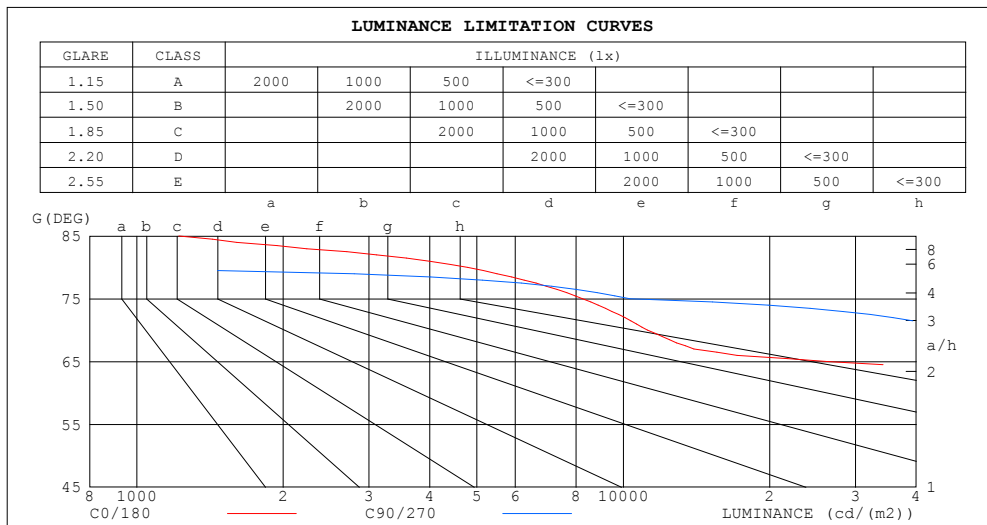
%lamp = 91.9%

$H(\beta)$ Range:-90 - 90DEG
 $H(\beta)$ Interval: 1.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:Gu
 Test Date:2025-03-17

V(B) Range:-75 - 75DEG
 V(B) Interval: 5.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.00.411
 Humidity:65.0%
 Test Distance:7.448m [K=1.0000]
 Remarks:

LUMINANCE LIMITATION CURVES

Test:U:120.92V I:0.6599A P:79.579W PF:0.9974 Freq:59.98Hz Lamp Flux:8645.4x1 lm		
NAME: GHSL-13-U	TYPE:Flood Light	WEIGHT:N/A
SPEC.:80W/1600K/90°	DIM.: 190*150mm	SERIAL No.:N/A
MFR.: Grin Industrial Co., Ltd.	SUR.:N/A	Shielding Angle:N/A



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	1220	0
80	4786	0
75	8238	10321
70	11206	48795
65	26164	72657
60	79643	89447
55	99103	105334
50	115439	118407
45	125674	129830

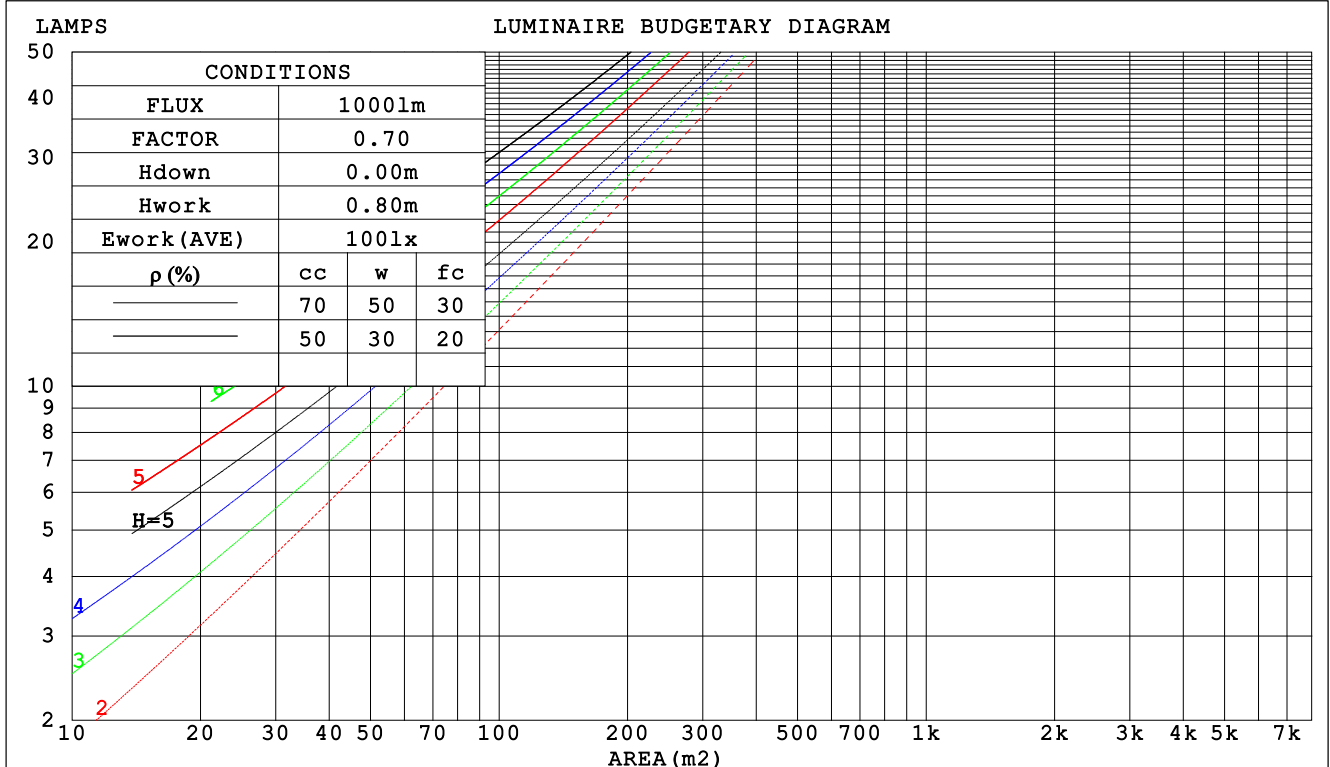
H(β) Range:-90 - 90DEG
H(β) Interval: 1.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Gu
Test Date:2025-03-17

V(B) Range:-75 - 75DEG
V(B) Interval: 5.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.00.411
Humidity:65.0%
Test Distance:7.448m [K=1.0000]
Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:120.92V I:0.6599A P:79.579W PF:0.9974 Freq:59.98Hz Lamp Flux:8645.4x1 lm		
NAME: GHSL-13-U	TYPE:Flood Light	WEIGHT:N/A
SPEC.:80W/1600K/90°	DIM.: 190*150mm	SERIAL No.:N/A
MFR.: Grin Industrial Co., Ltd.	SUR.:N/A	Shielding Angle:N/A

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	Coefficients of Utilization(CU)															
RCR:Room Cavity Ratio																
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	1.08	1.04	1.01	1.05	1.02	.99	1.01	.99	.96	.97	.95	.93	.94	.92	.91	.89
2.0	.96	.91	.86	.94	.89	.85	.91	.87	.83	.88	.84	.81	.85	.82	.79	.77
3.0	.86	.79	.74	.85	.78	.73	.82	.76	.72	.79	.75	.71	.77	.73	.70	.68
4.0	.78	.70	.64	.76	.69	.64	.74	.68	.63	.72	.66	.62	.70	.65	.61	.59
5.0	.70	.62	.56	.69	.62	.56	.67	.60	.55	.65	.59	.55	.63	.58	.54	.52
6.0	.64	.56	.50	.63	.55	.50	.61	.54	.49	.60	.54	.49	.58	.53	.49	.47
7.0	.58	.50	.45	.57	.50	.45	.56	.49	.44	.55	.49	.44	.53	.48	.44	.42
8.0	.54	.46	.40	.53	.45	.40	.52	.45	.40	.50	.44	.40	.49	.44	.40	.38
9.0	.49	.42	.37	.49	.42	.37	.48	.41	.36	.47	.41	.36	.46	.40	.36	.34
10.0	.46	.38	.34	.45	.38	.33	.44	.38	.33	.43	.37	.33	.43	.37	.33	.31



H(β) Range:-90 - 90DEG
H(β) Interval: 1.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Gu
Test Date:2025-03-17

V(B) Range:-75 - 75DEG
V(B) Interval: 5.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.00.411
Humidity:65.0%
Test Distance:7.448m [K=1.0000]
Remarks:

WEC AND CCEC

Test:U:120.92V I:0.6599A P:79.579W PF:0.9974 Freq:59.98Hz Lamp Flux:8645.4x1 lm					
NAME: GHSL-13-U			TYPE:Flood Light		WEIGHT:N/A
SPEC.:80W/1600K/90°			DIM.: 190*150mm		SERIAL No.:N/A
MFR.: Grin Industrial Co., Ltd.			SUR.:N/A		Shielding Angle:N/A

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	.241	.137	.043	.234	.134	.042	.221	.127	.041	.210	.121	.039	.199	.115	.037	
2.0	.237	.130	.040	.231	.127	.039	.220	.122	.038	.210	.118	.037	.200	.113	.036	
3.0	.227	.121	.036	.221	.119	.036	.212	.115	.035	.203	.111	.034	.194	.107	.033	
4.0	.214	.111	.033	.210	.110	.032	.201	.107	.032	.193	.104	.031	.186	.101	.031	
5.0	.202	.103	.030	.198	.102	.030	.190	.099	.029	.183	.097	.029	.176	.094	.028	
6.0	.190	.095	.027	.187	.094	.027	.180	.092	.027	.173	.090	.026	.167	.088	.026	
7.0	.179	.089	.025	.176	.088	.025	.170	.086	.025	.164	.084	.025	.159	.083	.024	
8.0	.169	.083	.023	.166	.082	.023	.161	.080	.023	.156	.079	.023	.151	.077	.023	
9.0	.160	.077	.022	.157	.077	.022	.153	.075	.021	.148	.074	.021	.143	.073	.021	
10.0	.152	.073	.020	.149	.072	.020	.145	.071	.020	.141	.070	.020	.137	.069	.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	.191	.191	.191	.163	.163	.163	.111	.111	.111	.064	.064	.064	.020	.020	.020	
1.0	.176	.157	.140	.150	.135	.120	.103	.093	.083	.059	.054	.048	.019	.017	.016	
2.0	.165	.132	.105	.141	.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	.088	.060	.039	.051	.035	.023	.016	.012	.008	
5.0	.141	.089	.051	.121	.077	.045	.083	.054	.032	.048	.032	.019	.016	.010	.006	
6.0	.134	.081	.043	.116	.070	.037	.080	.049	.026	.046	.029	.016	.015	.009	.005	
7.0	.128	.074	.036	.110	.064	.031	.076	.045	.022	.044	.026	.013	.014	.009	.004	
8.0	.122	.068	.031	.105	.059	.027	.073	.041	.019	.042	.024	.011	.014	.008	.004	
9.0	.117	.063	.027	.101	.055	.023	.070	.038	.017	.041	.023	.010	.013	.007	.003	
10.0	.112	.059	.024	.096	.051	.021	.067	.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:Gu
Test Date:2025-03-17

V(B) Range:-75 - 75DEG
V(B) Interval: 5.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.00.411
Humidity:65.0%
Test Distance:7.448m [K=1.0000]
Remarks:

UGR(Unified Glare Rating) Table

Test:U:120.92V I:0.6599A P:79.579W PF:0.9974 Freq:59.98Hz Lamp Flux:8645.4x1 lm										
NAME: GHSL-13-U					TYPE:Flood Light			WEIGHT:N/A		
SPEC.:80W/1600K/90°					DIM.: 190*150mm			SERIAL No.:N/A		
MFR.: Grin Industrial Co., Ltd.					SUR.:N/A			Shielding Angle:N/A		
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	20.8	22.1	21.0	22.3	22.5	21.2	22.6	21.5	22.8	23.0
3H	20.8	22.0	21.1	22.2	22.5	21.8	23.1	22.1	23.3	23.5
4H	20.7	21.9	21.0	22.1	22.3	21.8	23.0	22.1	23.2	23.4
6H	20.6	21.7	20.9	21.9	22.2	21.7	22.8	22.0	23.0	23.3
8H	20.6	21.6	20.9	21.9	22.1	21.7	22.7	22.0	23.0	23.2
12H	20.5	21.5	20.8	21.8	22.1	21.6	22.6	21.9	22.9	23.2
4H 2H	21.1	22.2	21.4	22.5	22.7	21.5	22.6	21.8	22.9	23.1
3H	21.2	22.2	21.5	22.5	22.8	22.2	23.2	22.5	23.5	23.8
4H	21.1	22.0	21.5	22.3	22.6	22.2	23.1	22.6	23.4	23.7
6H	21.0	21.8	21.4	22.2	22.5	22.1	22.9	22.5	23.2	23.6
8H	21.0	21.7	21.4	22.1	22.5	22.1	22.8	22.5	23.2	23.5
12H	20.9	21.6	21.4	22.0	22.4	22.0	22.7	22.4	23.1	23.5
8H 4H	21.1	21.8	21.5	22.2	22.5	22.1	22.9	22.5	23.2	23.6
6H	21.0	21.6	21.4	22.0	22.4	22.0	22.6	22.5	23.0	23.5
8H	21.0	21.5	21.4	21.9	22.4	22.0	22.5	22.5	22.9	23.4
12H	20.9	21.4	21.4	21.8	22.3	22.0	22.4	22.4	22.8	23.3
12H 4H	21.0	21.7	21.5	22.1	22.5	22.1	22.7	22.5	23.1	23.5
6H	21.0	21.5	21.4	21.9	22.4	22.0	22.5	22.5	22.9	23.4
8H	20.9	21.4	21.4	21.8	22.3	22.0	22.4	22.4	22.8	23.3
Variations with the observer position at spacings:										
S = 1.0H	+ 0.7 / - 0.9					+ 0.5 / - 0.6				
1.5H	+ 0.5 / - 0.8					+ 0.2 / - 0.4				
2.0H	+ 1.1 / - 1.2					+ 1.0 / - 1.1				

CIE Pub.117, 8645 lm Total Lamp Luminous Flux Correct (8log(F/F0) = 7.5)
Area: 0.024 m2

H(β) Range:-90 - 90DEG
H(β) Interval: 1.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Gu
Test Date:2025-03-17

V(B) Range:-75 - 75DEG
V(B) Interval: 5.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.00.411
Humidity:65.0%
Test Distance:7.448m [K=1.0000]
Remarks:

UTILIZATION FACTORS TABLE

Test:U:120.92V I:0.6599A P:79.579W PF:0.9974 Freq:59.98Hz Lamp Flux:8645.4x1 lm		
NAME: GHSL-13-U	TYPE:Flood Light	WEIGHT:N/A
SPEC.:80W/1600K/90°	DIM.: 190*150mm	SERIAL No.:N/A
MFR.: Grin Industrial Co., Ltd.	SUR.:N/A	Shielding Angle:N/A

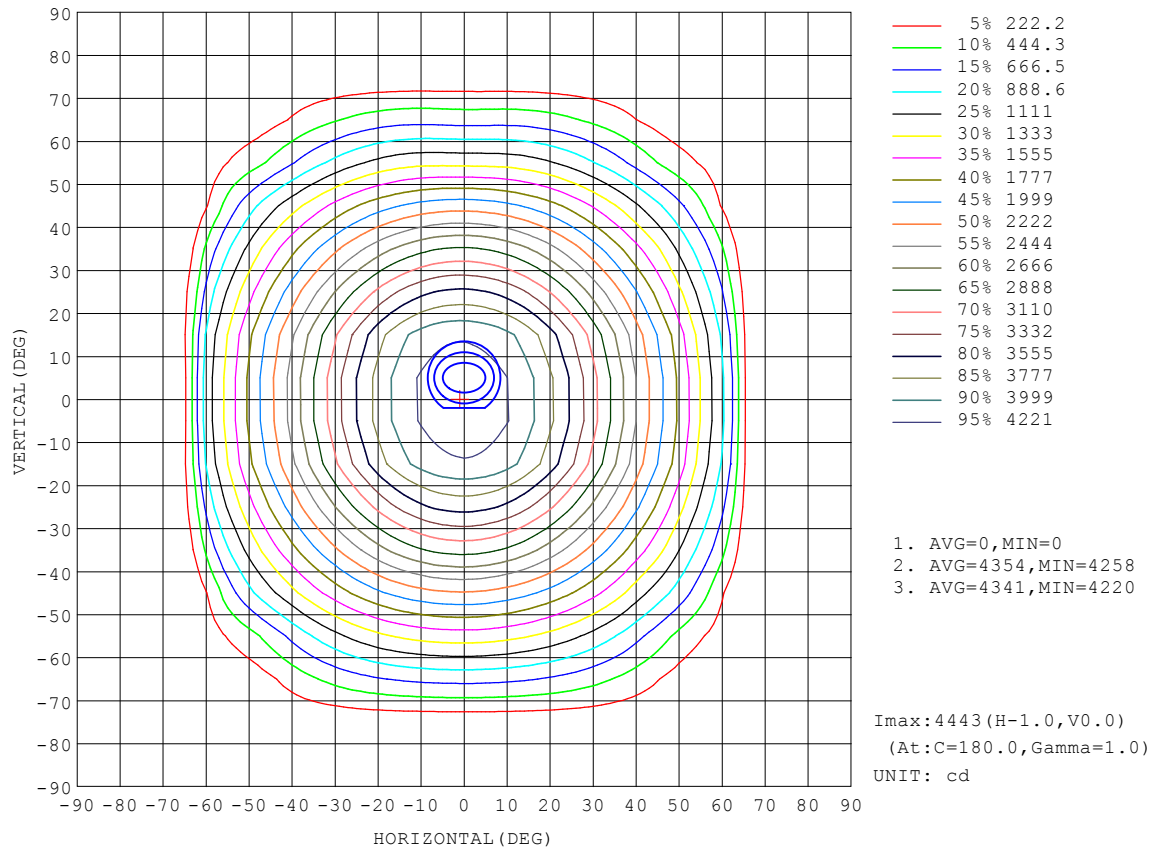
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	65	55	49	64	54	48	63	54	48	43
0.80	75	65	59	74	65	59	73	64	58	52
1.00	84	74	68	83	74	68	81	75	68	62
1.25	90	82	76	89	81	76	87	80	75	69
1.50	95	87	81	93	86	81	91	85	80	73
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	107	101	97	105	100	96	101	97	94	86
4.00	110	105	102	107	103	100	103	100	98	89
5.00	111	108	105	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:Gu
 Test Date:2025-03-17

$V(B)$ Range:-75 - 75DEG
 $V(B)$ Interval: 5.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.00.411
 Humidity:65.0%
 Test Distance:7.448m [K=1.0000]
 Remarks:

ISOCANDELA DIAGRAM

Test:U:120.92V I:0.6599A P:79.579W PF:0.9974 Freq:59.98Hz Lamp Flux:8645.4x1 lm		
NAME: GHSL-13-U	TYPE:Flood Light	WEIGHT:N/A
SPEC.:80W/1600K/90°	DIM.: 190*150mm	SERIAL No.:N/A
MFR.: Grin Industrial Co., Ltd.	SUR.:N/A	Shielding Angle:N/A

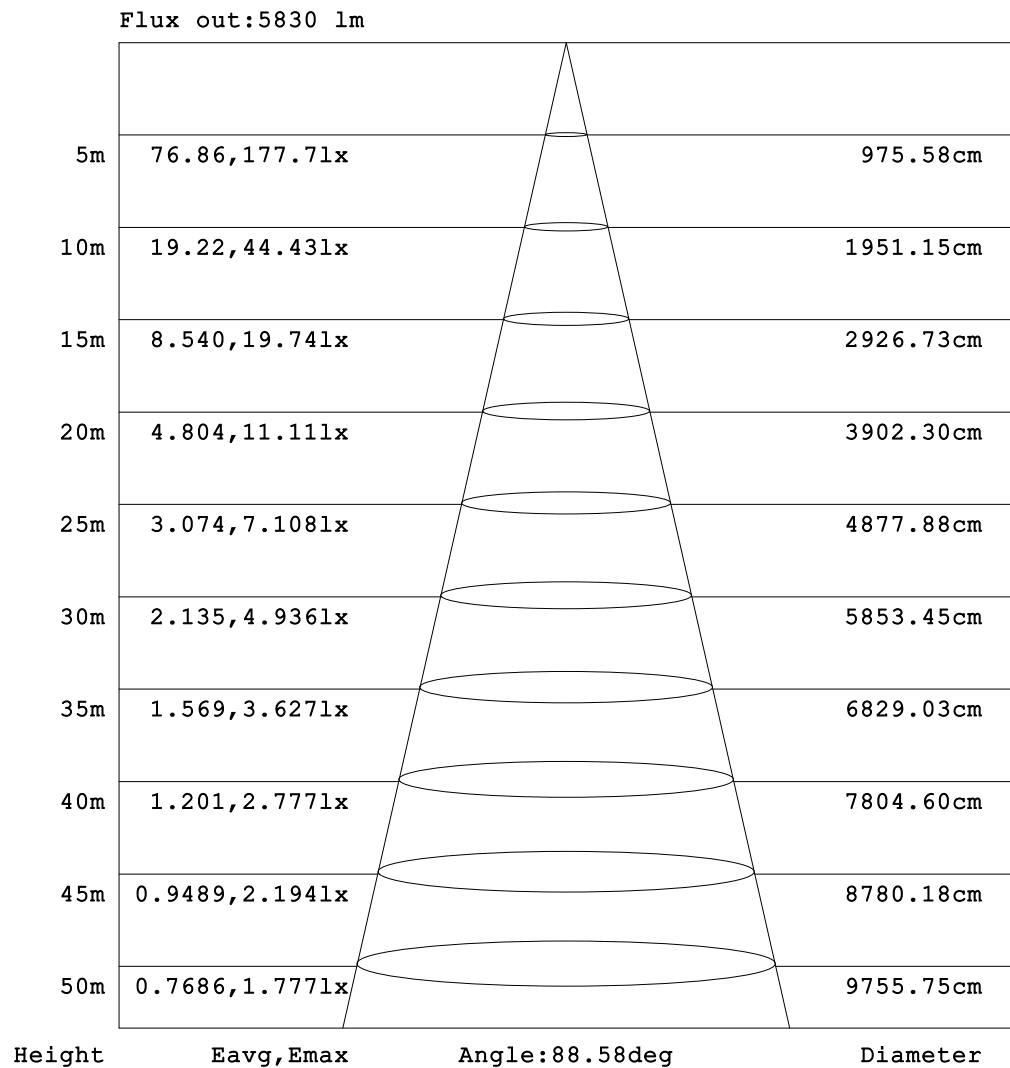


H(β) Range:-90 - 90DEG
H(β) Interval: 1.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Gu
Test Date:2025-03-17

V(B) Range:-75 - 75DEG
V(B) Interval: 5.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.00.411
Humidity:65.0%
Test Distance:7.448m [K=1.0000]
Remarks:

AAI Figure

Test:U:120.92V I:0.6599A P:79.579W PF:0.9974 Freq:59.98Hz Lamp Flux:8645.4x1 lm		
NAME: GHSL-13-U	TYPE:Flood Light	WEIGHT:N/A
SPEC.:80W/1600K/90°	DIM.: 190*150mm	SERIAL No.:N/A
MFR.: Grin Industrial Co., Ltd.	SUR.:N/A	Shielding Angle:N/A



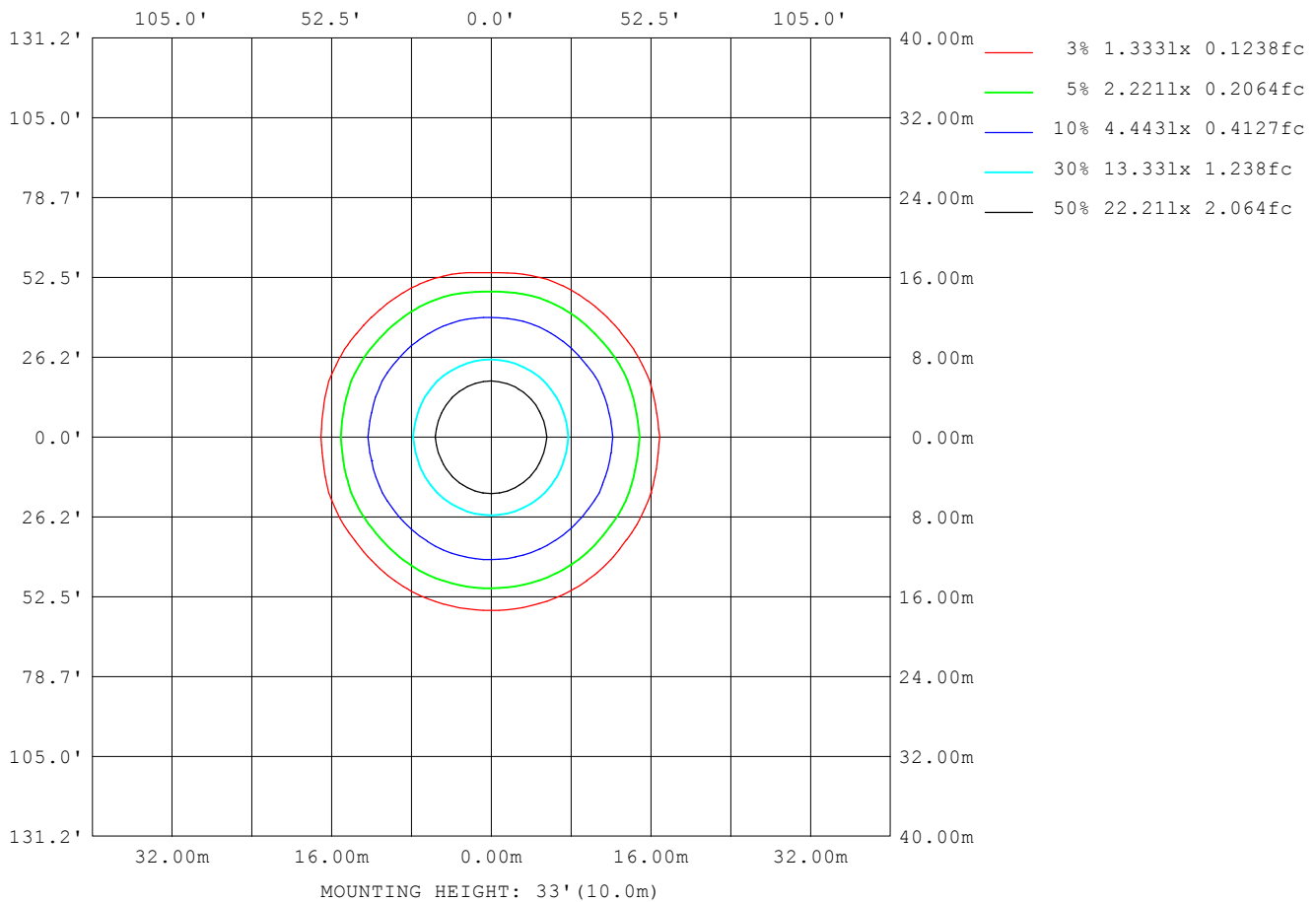
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

H(β) Range:-90 - 90DEG
H(β) Interval: 1.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Gu
Test Date:2025-03-17

V(B) Range:-75 - 75DEG
V(B) Interval: 5.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.00.411
Humidity:65.0%
Test Distance:7.448m [K=1.0000]
Remarks:

ISOLUX DIAGRAM

Test:U:120.92V I:0.6599A P:79.579W PF:0.9974 Freq:59.98Hz Lamp Flux:8645.4x1 lm		
NAME: GHSL-13-U	TYPE:Flood Light	WEIGHT:N/A
SPEC.:80W/1600K/90°	DIM.: 190*150mm	SERIAL No.:N/A
MFR.: Grin Industrial Co., Ltd.	SUR.:N/A	Shielding Angle:N/A



H(β) Range:-90 - 90DEG
H(β) Interval: 1.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Gu
Test Date:2025-03-17

V(B) Range:-75 - 75DEG
V(B) Interval: 5.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.00.411
Humidity:65.0%
Test Distance:7.448m [K=1.0000]
Remarks:

LED Avg.L Report

Test:U:120.92V I:0.6599A P:79.579W PF:0.9974 Freq:59.98Hz Lamp Flux:8645.4x1 lm		
NAME: GHSL-13-U	TYPE:Flood Light	WEIGHT:N/A
SPEC.:80W/1600K/90°	DIM.: 190*150mm	SERIAL No.:N/A
MFR.: Grin Industrial Co., Ltd.	SUR.:N/A	Shielding Angle:N/A

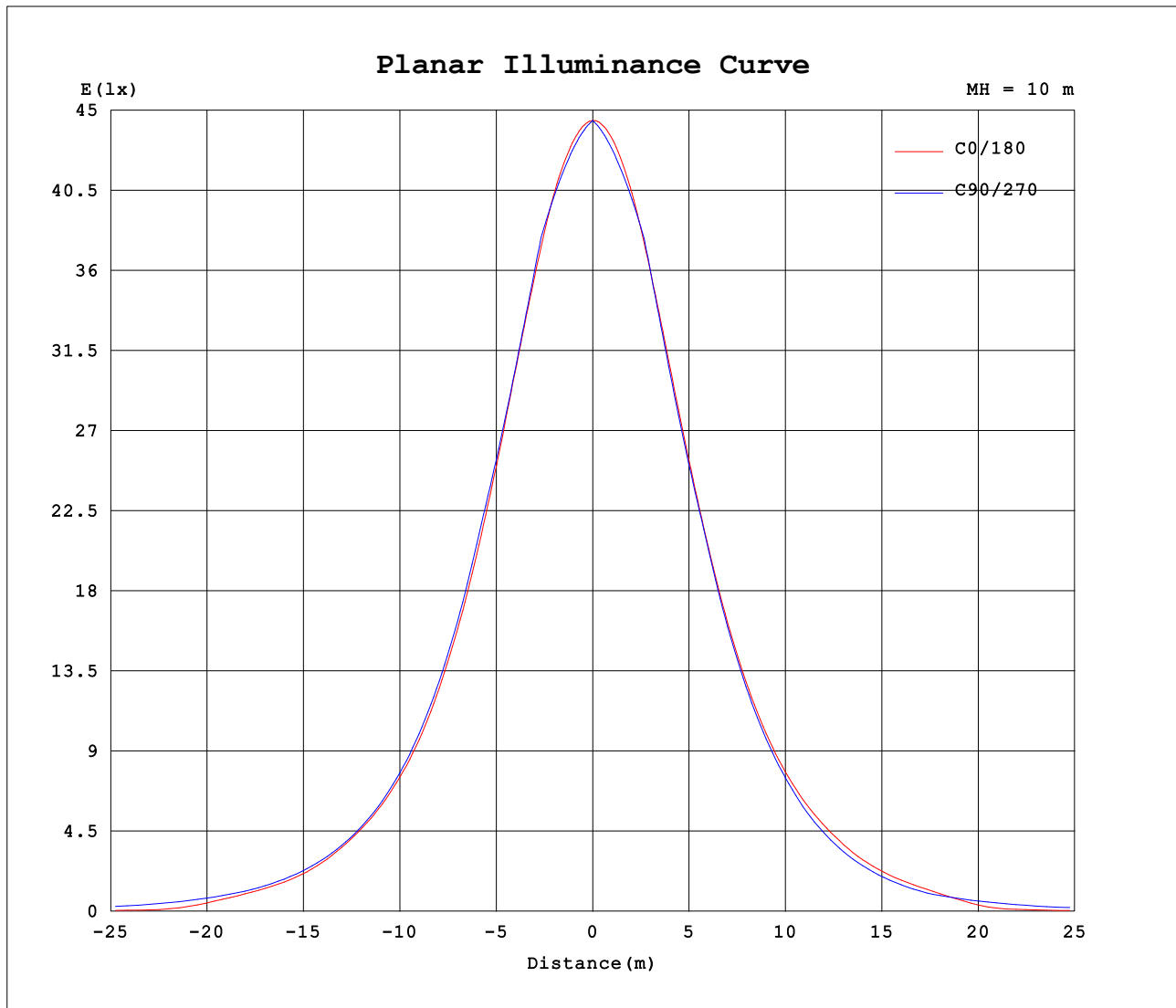
AvgL	cd/m2
L_0~180 (65) av	22187
L_0~180 (75) av	7872
L_0~180 (85) av	984
L_90~270 (65) av	64451
L_90~270 (75) av	8270
L_90~270 (85) av	0
L_45 (65) av	58478
L_45 (75) av	21385
L_45 (85) av	0

Standard: GB/T 29293-2012

H(β) Range:-90 - 90DEG
H(β) Interval: 1.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Gu
Test Date:2025-03-17

V(B) Range:-75 - 75DEG
V(B) Interval: 5.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.00.411
Humidity:65.0%
Test Distance:7.448m [K=1.0000]
Remarks:

Planar Illuminance Curve



H(β) Range:-90 - 90DEG
H(β) Interval: 1.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Gu
Test Date:2025-03-17

V(B) Range:-75 - 75DEG
V(B) Interval: 5.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.00.411
Humidity:65.0%
Test Distance:7.448m [K=1.0000]
Remarks:

```
V(B) Range:-75 - 75DEG
V(B) Interval: 5.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.00.411
Humidity:65.0%
Test Distance:7.448m [K=1.0000]
Remarks:
```

V(B) Range:-75 - 75DEG
V(B) Interval: 5.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.00.411
Humidity:65.0%
Test Distance:7.448m [K=1.0000]
Remarks:

V(B) Range:-75 - 75DEG
V(B) Interval: 5.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.00.411
Humidity:65.0%
Test Distance:7.448m [K=1.0000]
Remarks:

```
V(B) Range:-75 - 75DEG
V(B) Interval: 5.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.00.411
Humidity:65.0%
Test Distance:7.448m [K=1.0000]
Remarks:
```