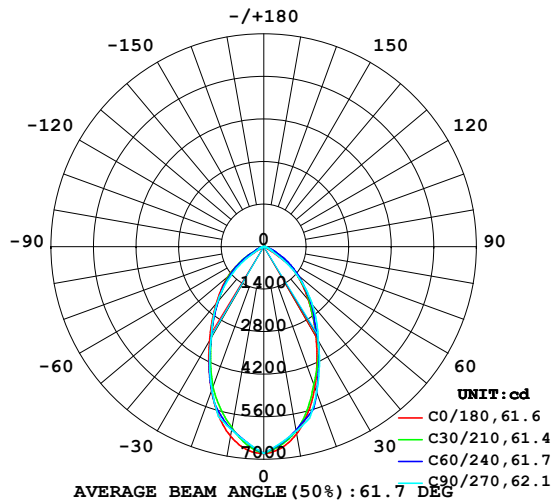


LUMINAIRE PHOTOMETRIC TEST REPORT

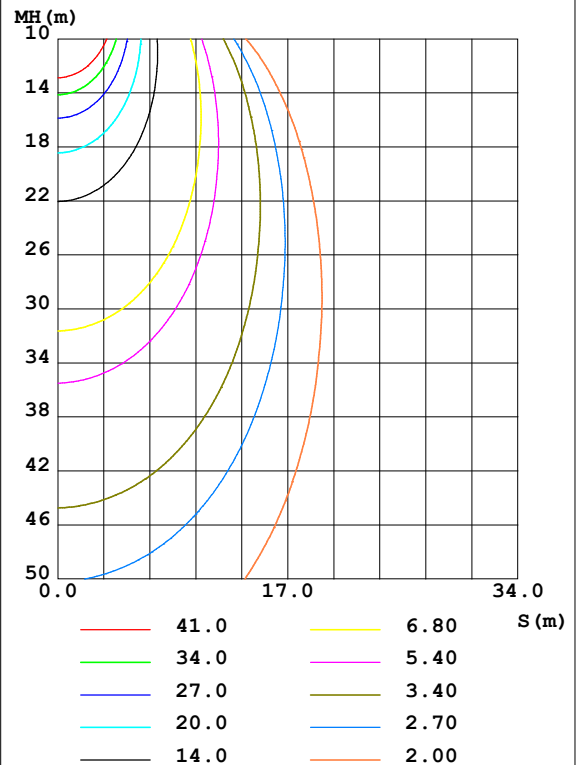
Test:U:120.91V I:0.6603A P:79.630W PF:0.9974 Freq:59.98Hz Lamp Flux:8645.4x1 lm		
NAME: GHSL-13-U	TYPE:Flood Light	WEIGHT:N/A
SPEC.:80W/1600K/60°	DIM.: 190*150mm	SERIAL No.:N/A
MFR.: Grin Industrial Co., Ltd.	SUR.:N/A	Shielding Angle:N/A

DATA OF LAMP		PHOTOMETRIC DATA Eff: 108.57 lm/W			
MODEL	GHSL-13-U	I _{max} (cd)	6806	S/MH(C0/180)	0.89
NOMINAL POWER(W)	80W	LOR(%)	100.0	S/MH(C90/270)	0.88
RATED VOLTAGE(V)	120	TOTAL FLUX(lm)	8645.4	η UP,DN(C0-180)	0.0,50.8
NOMINAL FLUX(lm)	8645.4	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,49.2
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	0.75
TEST VOLTAGE(V)	120	η down(%)	100.0	CIBSE SHR MAX	0.95

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	6253	6126	6167	6088	6329	6072	6121	6082	0- 10	610.5	610.5	7.06, 7.06
20	4917	5103	5094	4981	5038	4967	5004	5015	10- 20	1571	2182	25.2, 25.2
30	3440	3518	3587	3535	3578	3500	3453	3436	20- 30	1930	4112	47.6, 47.6
40	2283	2333	2487	2390	2428	2360	2371	2246	30- 40	1804	5915	68.4, 68.4
50	1400	1463	1396	1541	1548	1503	1302	1388	40- 50	1453	7368	85.2, 85.2
60	220.3	719.1	313.7	752.1	230.8	709.5	245.3	641.0	50- 60	895.7	8264	95.6, 95.6
70	85.71	166.6	142.6	137.6	88.19	114.1	104.7	116.4	60- 70	304.7	8569	99.1, 99.1
80	15.32	26.75	0	19.88	15.35	12.18	0	13.56	70- 80	74.21	8643	100, 100
90	0.5793	0	0	0	0.4915	0	0	0	80- 90	2.683	8645	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): 6697.6 lm

%lum = 77.5%

%lamp = 77.5%

Conical surface Flux(120deg): 8263.8 lm

%lum = 95.6%

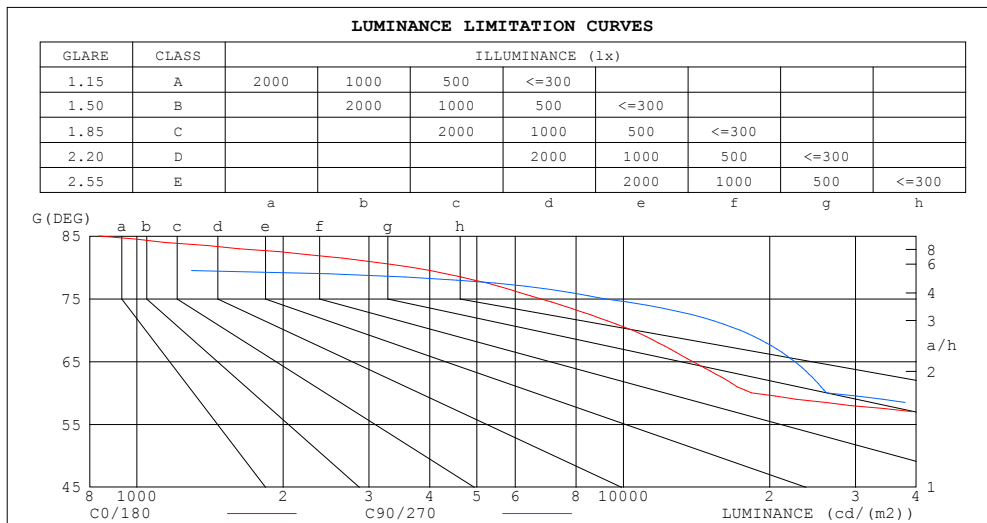
%lamp = 95.6%

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:

LUMINANCE LIMITATION CURVES

Test:U:120.91V I:0.6603A P:79.630W PF:0.9974 Freq:59.98Hz Lamp Flux:8645.4x1 lm		
NAME: GHSL-13-U	TYPE:Flood Light	WEIGHT:N/A
SPEC.:80W/1600K/60°	DIM.: 190*150mm	SERIAL No.:N/A
MFR.: Grin Industrial Co., Ltd.	SUR.:N/A	Shielding Angle:N/A



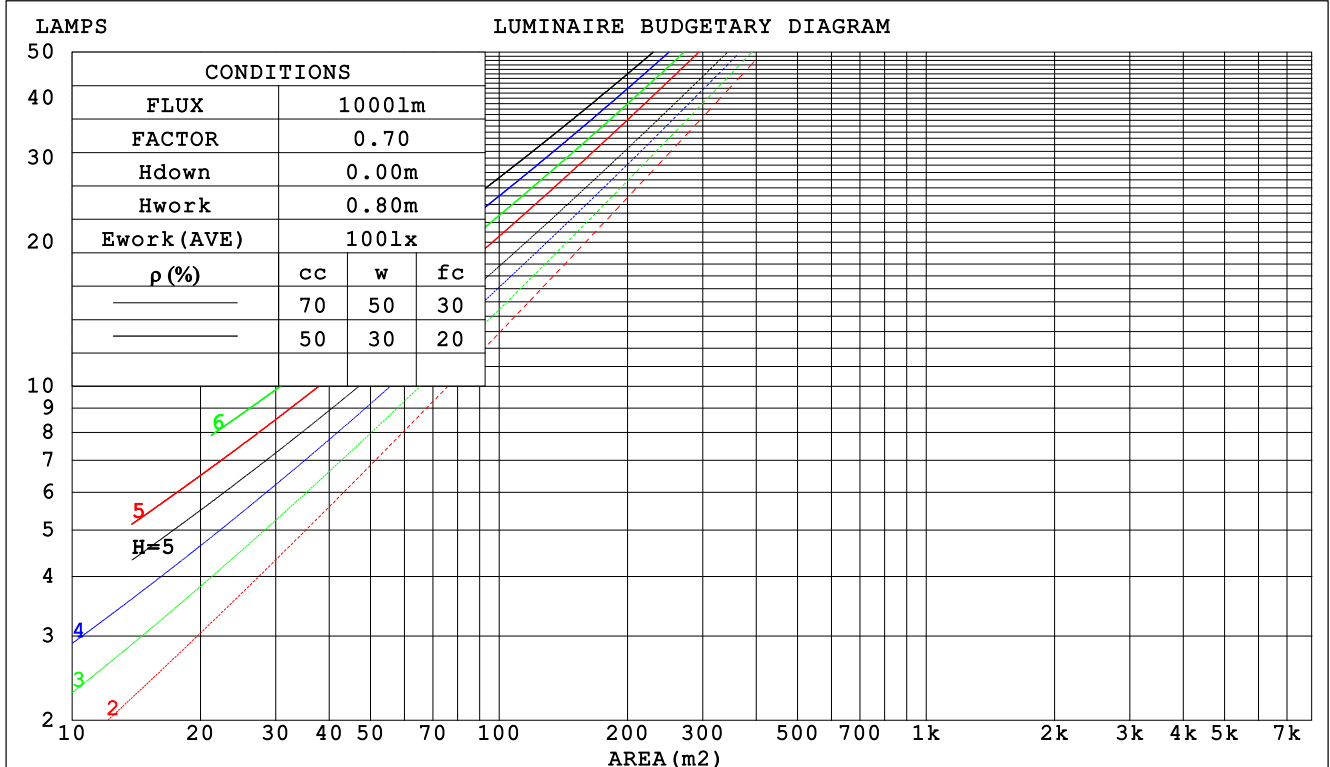
H(β) Range:-90 - 90DEG
H(β) Interval: 1.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Gu
Test Date:2025-03-17

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:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:120.91V I:0.6603A P:79.630W PF:0.9974 Freq:59.98Hz Lamp Flux:8645.4x1 lm		
NAME: GHSL-13-U	TYPE:Flood Light	WEIGHT:N/A
SPEC.:80W/1600K/60°	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	.00
1.0	1.09	1.06	1.03	1.06	1.04	1.01	1.02	1.00	.98	.99	.97	.95	.95	.94	.92	.90
2.0	.99	.94	.89	.97	.92	.88	.93	.90	.86	.90	.87	.84	.87	.85	.83	.81
3.0	.90	.83	.78	.88	.82	.78	.85	.80	.76	.83	.79	.75	.80	.77	.74	.72
4.0	.82	.75	.70	.80	.74	.69	.78	.73	.68	.76	.71	.67	.74	.70	.67	.65
5.0	.75	.68	.62	.74	.67	.62	.72	.66	.61	.70	.65	.61	.68	.64	.60	.58
6.0	.69	.61	.56	.68	.61	.56	.66	.60	.56	.65	.59	.55	.63	.58	.55	.53
7.0	.64	.56	.51	.63	.56	.51	.61	.55	.51	.60	.54	.50	.59	.54	.50	.48
8.0	.59	.52	.47	.58	.51	.47	.57	.51	.46	.56	.50	.46	.55	.50	.46	.44
9.0	.55	.48	.43	.54	.48	.43	.53	.47	.43	.52	.47	.43	.51	.46	.42	.41
10.0	.51	.44	.40	.51	.44	.40	.50	.44	.40	.49	.43	.39	.48	.43	.39	.38



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:120.91V I:0.6603A P:79.630W PF:0.9974 Freq:59.98Hz Lamp Flux:8645.4x1 lm					
NAME: GHSL-13-U			TYPE:Flood Light		WEIGHT:N/A
SPEC.:80W/1600K/60°			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	.219	.124	.039	.212	.121	.038	.199	.114	.036	.187	.108	.035	.176	.102	.033	
2.0	.214	.117	.036	.208	.115	.035	.197	.109	.034	.187	.105	.033	.177	.100	.032	
3.0	.204	.109	.033	.199	.107	.032	.190	.103	.031	.181	.099	.030	.173	.096	.030	
4.0	.194	.101	.030	.190	.099	.029	.181	.096	.029	.174	.093	.028	.166	.090	.028	
5.0	.184	.094	.027	.180	.092	.027	.172	.090	.026	.166	.087	.026	.159	.085	.026	
6.0	.174	.087	.025	.170	.086	.025	.164	.084	.024	.158	.082	.024	.152	.080	.024	
7.0	.165	.081	.023	.162	.081	.023	.156	.079	.023	.150	.077	.022	.145	.075	.022	
8.0	.156	.076	.021	.153	.076	.021	.148	.074	.021	.143	.073	.021	.139	.071	.021	
9.0	.148	.072	.020	.146	.071	.020	.141	.070	.020	.137	.068	.020	.132	.067	.019	
10.0	.141	.068	.019	.139	.067	.019	.134	.066	.019	.130	.065	.018	.127	.064	.018	

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	.174	.157	.142	.149	.135	.122	.102	.093	.084	.059	.054	.049	.019	.017	.016	
2.0	.162	.132	.107	.139	.114	.093	.095	.079	.065	.055	.046	.038	.018	.015	.012	
3.0	.152	.114	.084	.130	.098	.072	.089	.068	.051	.052	.040	.030	.017	.013	.010	
4.0	.143	.100	.067	.123	.086	.058	.085	.060	.041	.049	.035	.024	.016	.011	.008	
5.0	.136	.089	.054	.117	.077	.047	.080	.054	.033	.046	.031	.020	.015	.010	.006	
6.0	.129	.080	.045	.111	.069	.039	.076	.048	.028	.044	.029	.016	.014	.009	.005	
7.0	.123	.073	.038	.105	.063	.033	.073	.044	.023	.042	.026	.014	.014	.009	.005	
8.0	.117	.067	.032	.101	.058	.028	.070	.041	.020	.040	.024	.012	.013	.008	.004	
9.0	.111	.062	.028	.096	.054	.025	.067	.038	.017	.039	.022	.010	.013	.007	.003	
10.0	.106	.057	.025	.092	.050	.022	.064	.035	.015	.037	.021	.009	.012	.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:120.91V I:0.6603A P:79.630W PF:0.9974 Freq:59.98Hz Lamp Flux:8645.4x1 lm										
NAME: GHSL-13-U					TYPE:Flood Light			WEIGHT:N/A		
SPEC.:80W/1600K/60°					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	18.9	20.1	19.1	20.3	20.5	19.3	20.5	19.5	20.7	20.9
3H	18.8	19.9	19.1	20.1	20.3	19.5	20.6	19.8	20.8	21.0
4H	18.7	19.8	19.0	20.0	20.2	19.4	20.5	19.7	20.7	21.0
6H	18.6	19.6	19.0	19.9	20.1	19.3	20.3	19.7	20.6	20.8
8H	18.6	19.5	18.9	19.8	20.1	19.3	20.2	19.6	20.5	20.8
12H	18.6	19.5	18.9	19.7	20.0	19.3	20.2	19.6	20.4	20.7
4H 2H	19.1	20.1	19.4	20.4	20.6	19.4	20.5	19.7	20.7	21.0
3H	19.1	20.0	19.4	20.2	20.5	19.8	20.7	20.1	20.9	21.2
4H	19.0	19.8	19.4	20.1	20.4	19.8	20.6	20.1	20.9	21.2
6H	18.9	19.6	19.3	20.0	20.3	19.7	20.4	20.1	20.7	21.1
8H	18.9	19.5	19.3	19.9	20.3	19.6	20.3	20.0	20.6	21.0
12H	18.8	19.4	19.3	19.8	20.2	19.6	20.2	20.0	20.6	21.0
8H 4H	19.0	19.6	19.4	20.0	20.3	19.7	20.3	20.1	20.7	21.1
6H	18.9	19.4	19.3	19.8	20.2	19.6	20.1	20.0	20.5	20.9
8H	18.8	19.3	19.3	19.7	20.2	19.5	20.0	20.0	20.4	20.9
12H	18.8	19.2	19.3	19.6	20.1	19.5	19.9	20.0	20.3	20.8
12H 4H	18.9	19.5	19.3	19.9	20.3	19.6	20.2	20.0	20.6	21.0
6H	18.8	19.3	19.3	19.7	20.2	19.5	20.0	20.0	20.4	20.9
8H	18.8	19.2	19.3	19.6	20.1	19.5	19.9	20.0	20.3	20.8
Variations with the observer position at spacings:										
S = 1.0H	+ 1.0 / - 1.9					+ 0.9 / - 1.4				
1.5H	+ 0.5 / - 0.7					+ 0.3 / - 0.9				
2.0H	+ 2.1 / - 7.0					+ 2.0 / - 6.2				

CIE Pub.117, 8645 lm Total Lamp Luminous Flux Correct ($8\log(F/F_0) = 7.5$)
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:120.91V I:0.6603A P:79.630W PF:0.9974 Freq:59.98Hz Lamp Flux:8645.4x1 lm		
NAME: GHSL-13-U	TYPE:Flood Light	WEIGHT:N/A
SPEC.:80W/1600K/60°	DIM.: 190*150mm	SERIAL No.:N/A
MFR.: Grin Industrial Co., Ltd.	SUR.:N/A	Shielding Angle:N/A

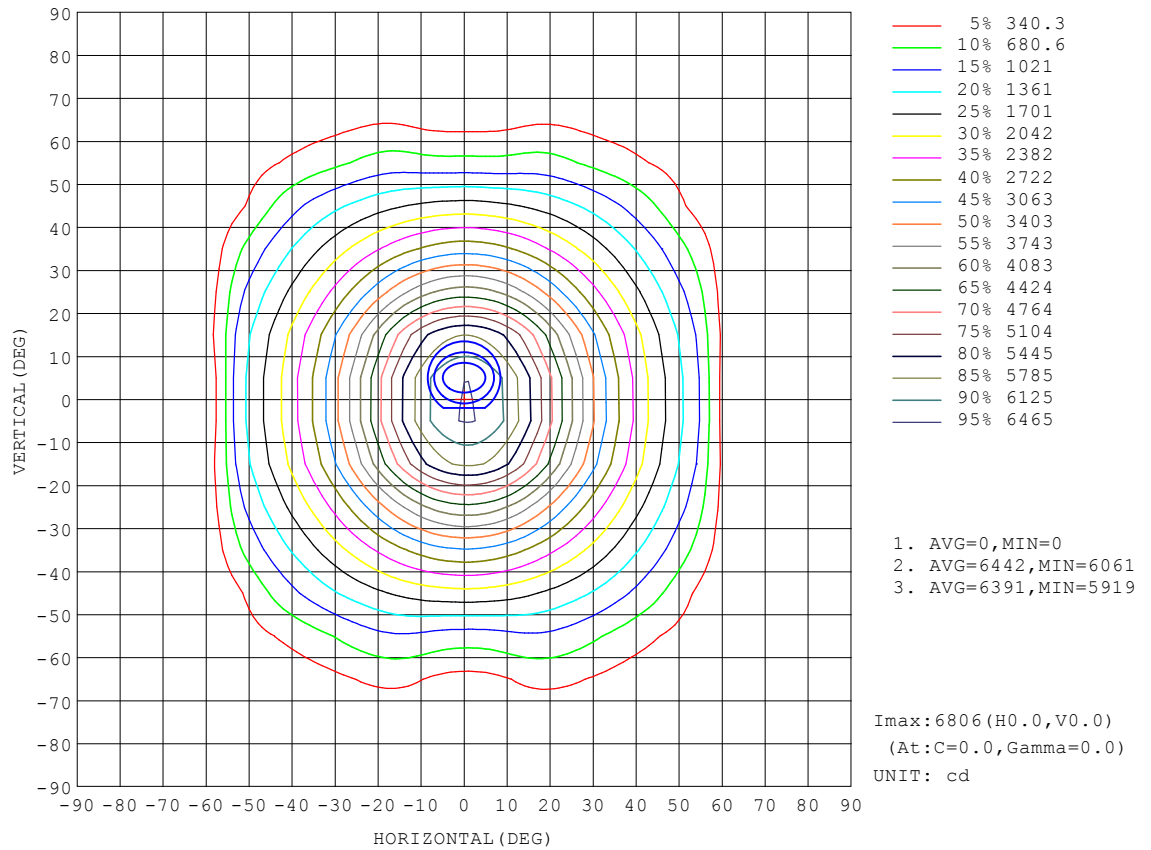
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	71	62	56	71	62	56	70	61	56	51
0.80	81	72	67	80	72	66	79	71	66	61
1.00	88	80	75	87	80	75	86	80	74	69
1.25	94	87	82	93	86	82	91	85	81	75
1.50	98	92	87	97	91	86	94	89	85	79
2.00	103	97	93	102	96	92	99	94	91	85
2.50	106	101	96	104	99	95	101	97	94	87
3.00	108	103	100	106	102	99	103	99	96	89
4.00	111	107	104	109	105	102	105	102	100	92
5.00	112	109	106	110	107	105	106	104	102	93
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:120.91V I:0.6603A P:79.630W PF:0.9974 Freq:59.98Hz Lamp Flux:8645.4x1 lm		
NAME: GHSL-13-U	TYPE:Flood Light	WEIGHT:N/A
SPEC.:80W/1600K/60°	DIM.: 190*150mm	SERIAL No.:N/A
MFR.: Grin Industrial Co., Ltd.	SUR.:N/A	Shielding Angle:N/A

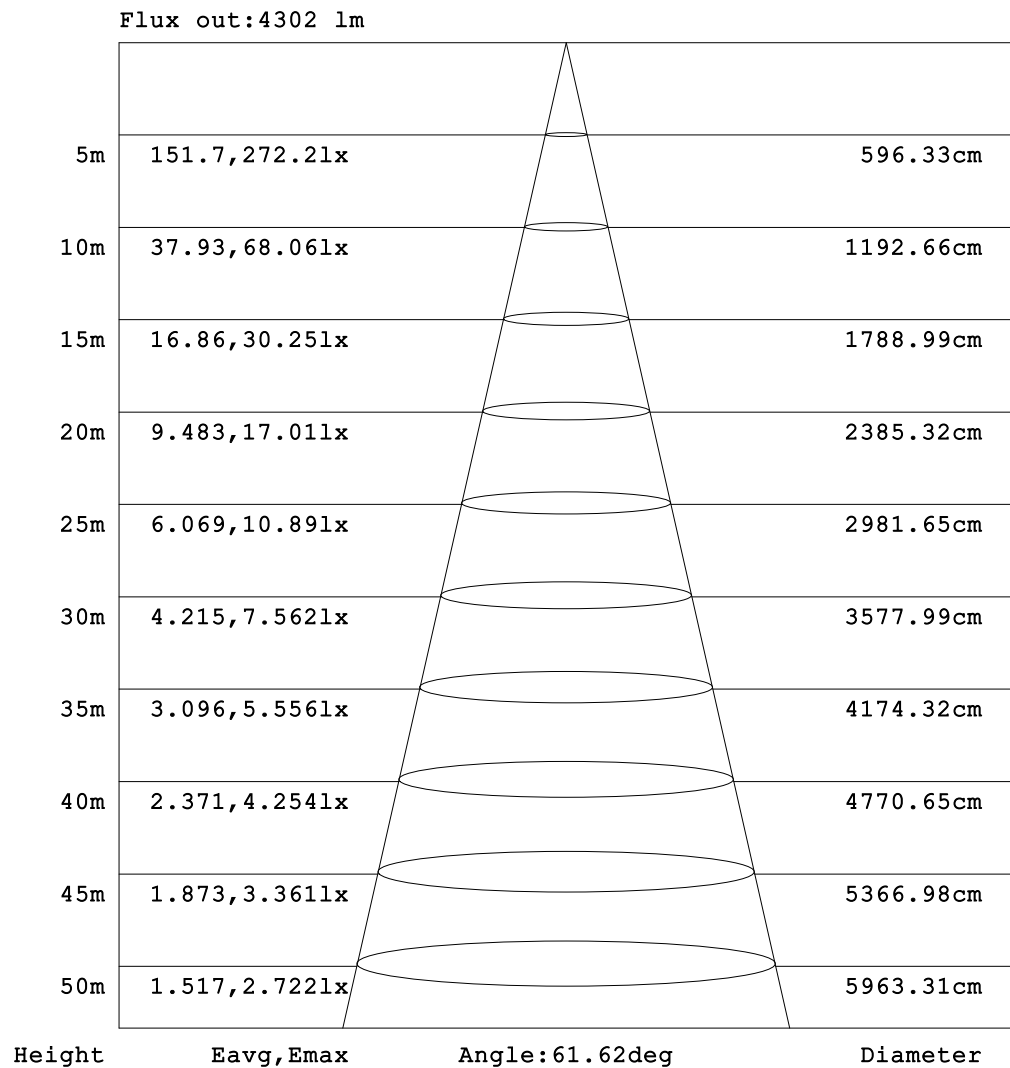


H(β) Range:-90 - 90DEG
H(β) Interval: 1.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Gu
Test Date:2025-03-17

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:120.91V I:0.6603A P:79.630W PF:0.9974 Freq:59.98Hz Lamp Flux:8645.4x1 lm		
NAME: GHSL-13-U	TYPE:Flood Light	WEIGHT:N/A
SPEC.:80W/1600K/60°	DIM.: 190*150mm	SERIAL No.:N/A
MFR.: Grin Industrial Co., Ltd.	SUR.:N/A	Shielding Angle:N/A



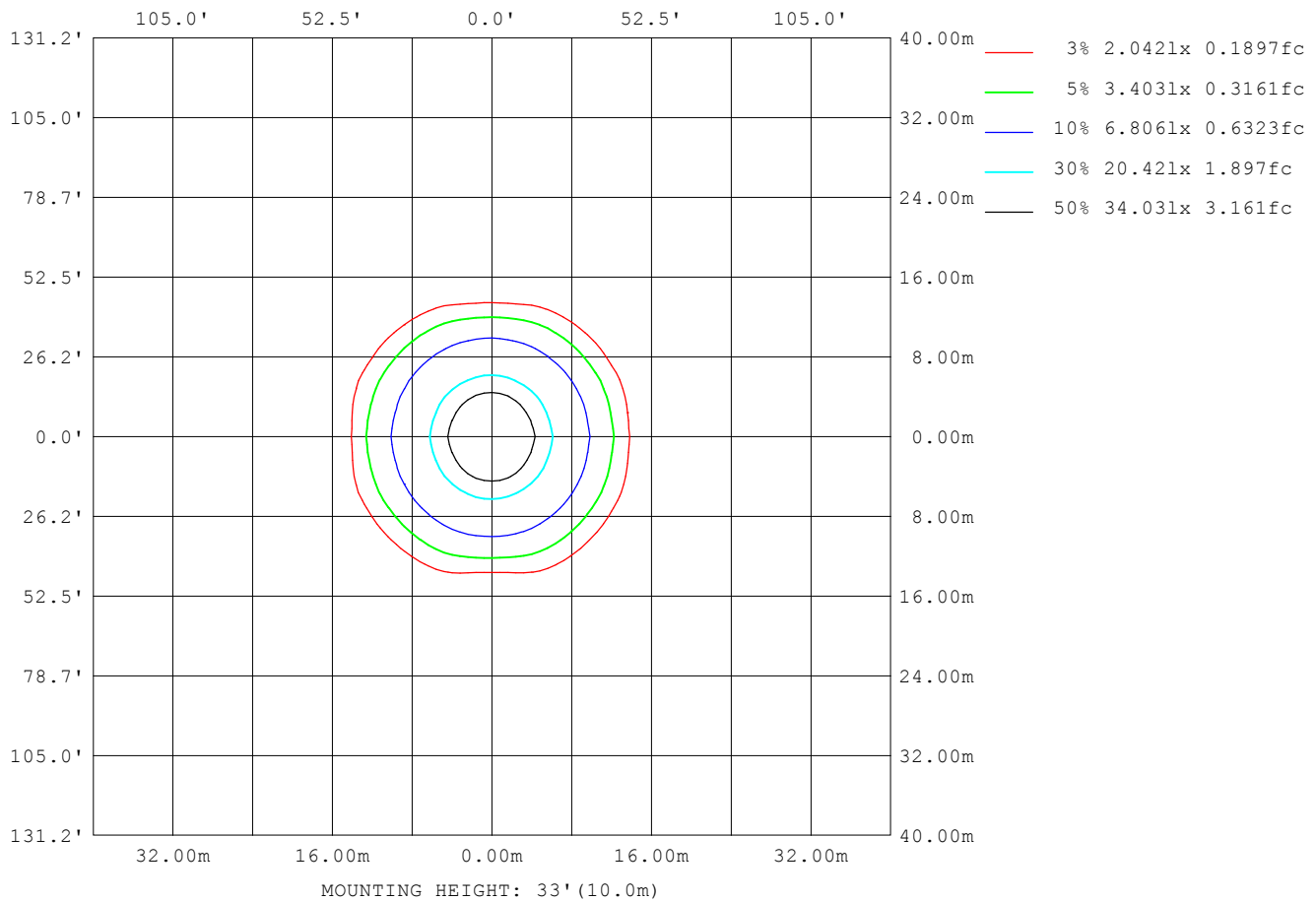
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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:120.91V I:0.6603A P:79.630W PF:0.9974 Freq:59.98Hz Lamp Flux:8645.4x1 lm		
NAME: GHSL-13-U	TYPE:Flood Light	WEIGHT:N/A
SPEC.:80W/1600K/60°	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:120.91V I:0.6603A P:79.630W PF:0.9974 Freq:59.98Hz Lamp Flux:8645.4x1 lm		
NAME: GHSL-13-U	TYPE:Flood Light	WEIGHT:N/A
SPEC.:80W/1600K/60°	DIM.: 190*150mm	SERIAL No.:N/A
MFR.: Grin Industrial Co., Ltd.	SUR.:N/A	Shielding Angle:N/A

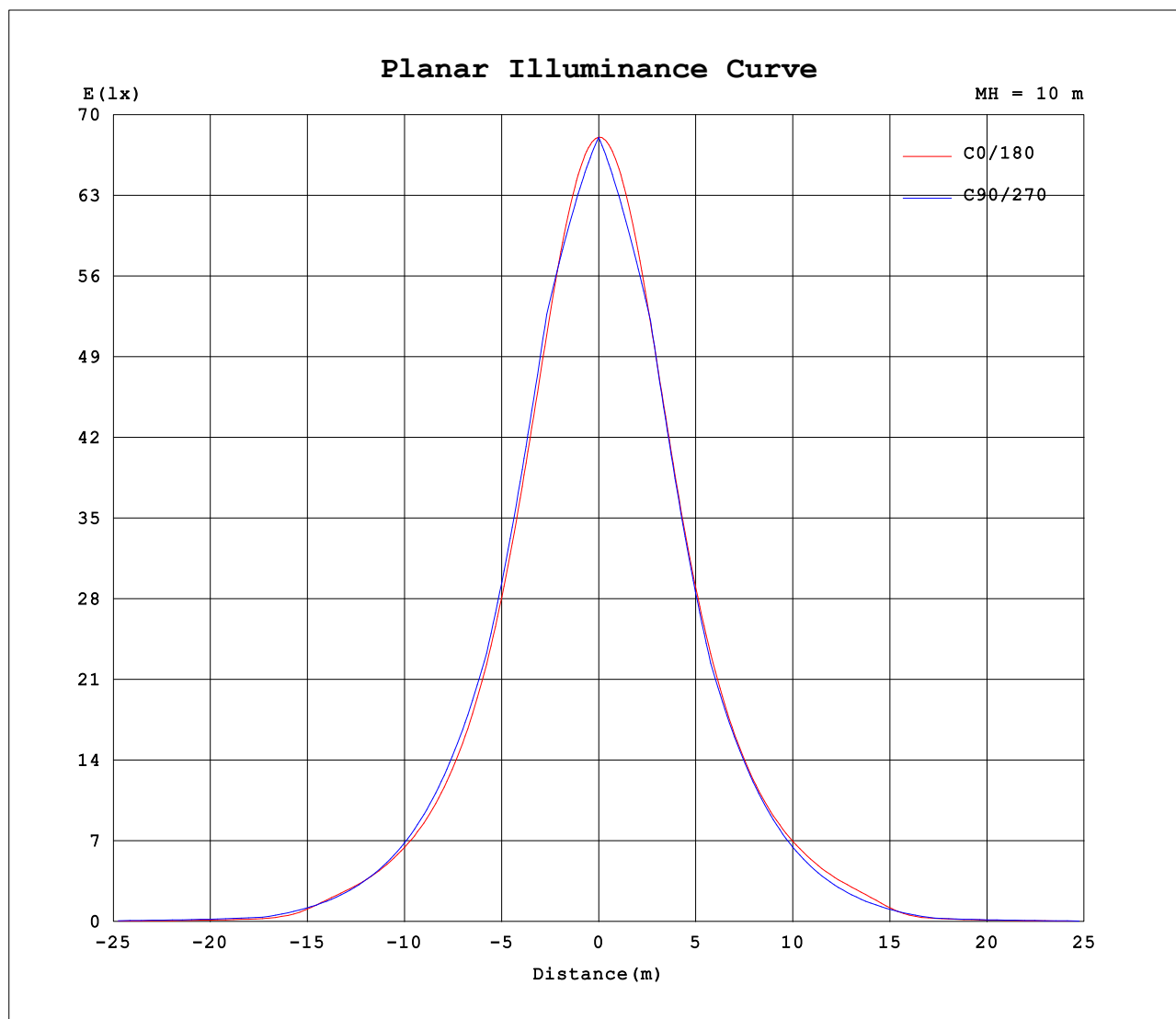
AvgL	cd/m2
L_0~180 (65) av	14080
L_0~180 (75) av	6815
L_0~180 (85) av	834
L_90~270 (65) av	19880
L_90~270 (75) av	7329
L_90~270 (85) av	0
L_45 (65) av	34356
L_45 (75) av	11306
L_45 (85) av	0

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:
```

Test:U:120.91V I:0.6603A P:79.630W PF:0.9974 Freq:59.98Hz Lamp Flux:8645.4x1 lm		
NAME: GHSL-13-U	TYPE:Flood Light	WEIGHT:N/A
SPEC.:80W/1600K/60°	DIM.: 190*150mm	SERIAL No.:N/A
MFR.: Grin Industrial Co., Ltd.	SUR.:N/A	Shielding Angle:N/A

UNIT: cd

```
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:
```