

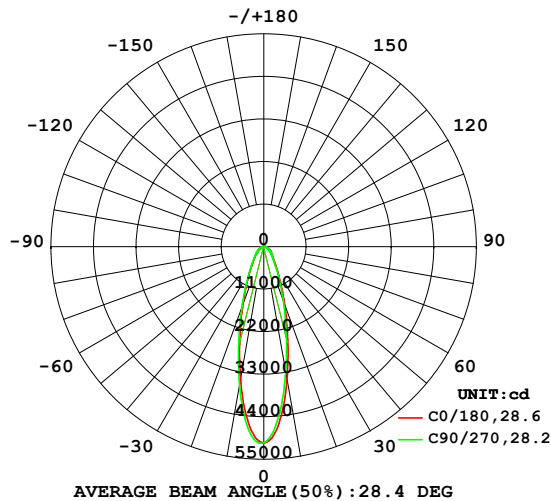
EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

LUMINAIRE PHOTOMETRIC TEST REPORT

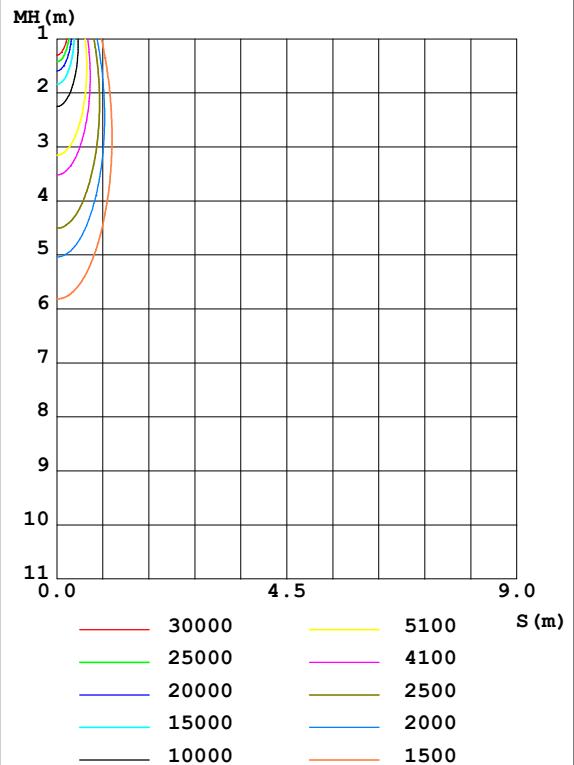
Test:U:119.5V I:1.2941A P:154.56W PF:0.9995 Freq:50.01Hz UTHDi:0.00% ITHDi:0.00% KDisp:0 Lamp Flux:24322.2x1 lm		
NAME: HA04-150-5770-F01604	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 157.36 lm/W			
MODEL	/	I _{max} (cd)	50868	S/MH(C0/180)	0.47
NOMINAL POWER(W)	/	LOR(%)	100.0	S/MH(C90/270)	0.49
RATED VOLTAGE(V)	/	TOTAL FLUX(lm)	24322	η UP,DN(C0-180)	0.0,48.5
NOMINAL FLUX(lm)	24322.2	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,51.5
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	0.50
TEST VOLTAGE(V)	120	η down(%)	100.0	CIBSE SHR MAX	0.55

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:LYJ
Test Date:2021-11-29

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-R5000_V2 SYSTEM V2.00.446
Humidity:65.0%
Test Distance:26.000m [K=0.4536]
Remarks:

EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum,lamp
10	3475	3376	3285	3376	3475	3558	3625	3558	0- 10	3998	3998	16.4,16.4
20	1585	1543	1480	1543	1585	1632	1656	1632	10- 20	6612	10610	43.6,43.6
30	702.5	685.4	650.1	685.4	702.5	726.1	735.6	726.1	20- 30	4847	15457	63.5,63.5
40	372.1	360.5	345.0	360.5	372.1	384.2	390.3	384.2	30- 40	3155	18612	76.5,76.5
50	238.0	223.5	221.9	223.5	238.0	241.8	249.4	241.8	40- 50	2269	20881	85.9,85.9
60	155.9	141.4	144.4	141.4	155.9	155.0	162.9	155.0	50- 60	1706	22587	92.9,92.9
70	85.39	73.00	76.42	73.00	85.39	81.30	87.90	81.30	60- 70	1139	23726	97.6,97.6
80	24.66	18.58	17.63	18.58	24.66	22.75	24.81	22.75	70- 80	519.2	24246	99.7,99.7
90	0.0858	0.0724	0.0695	0.0724	0.0858	0.1575	0.1935	0.1575	80- 90	76.65	24322	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:X10cd									UNIT:lm		

Conical surface Flux(90deg): 19825 lm

%lum = 81.5%

%lamp = 81.5%

Conical surface Flux(120deg): 22587 lm

%lum = 92.9%

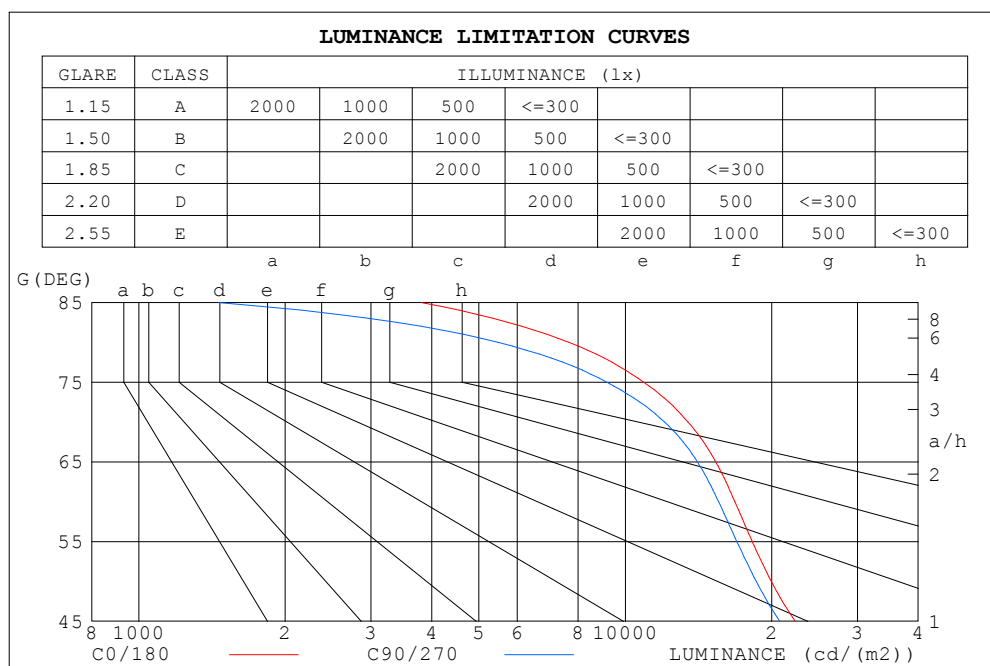
%lamp = 92.9%

C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:LYJ
Test Date:2021-11-29

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
Test System:EVERFINE GO-R5000_V2 SYSTEM V2.00.446
Humidity:65.0%
Test Distance:26.000m [K=0.4536]
Remarks:

EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

LUMINANCE LIMITATION CURVES



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	3806	1460
80	7652	5468
75	10918	9163
70	13454	12032
65	15342	14070
60	16802	15553
55	18236	16955
50	19954	18589
45	22368	20784

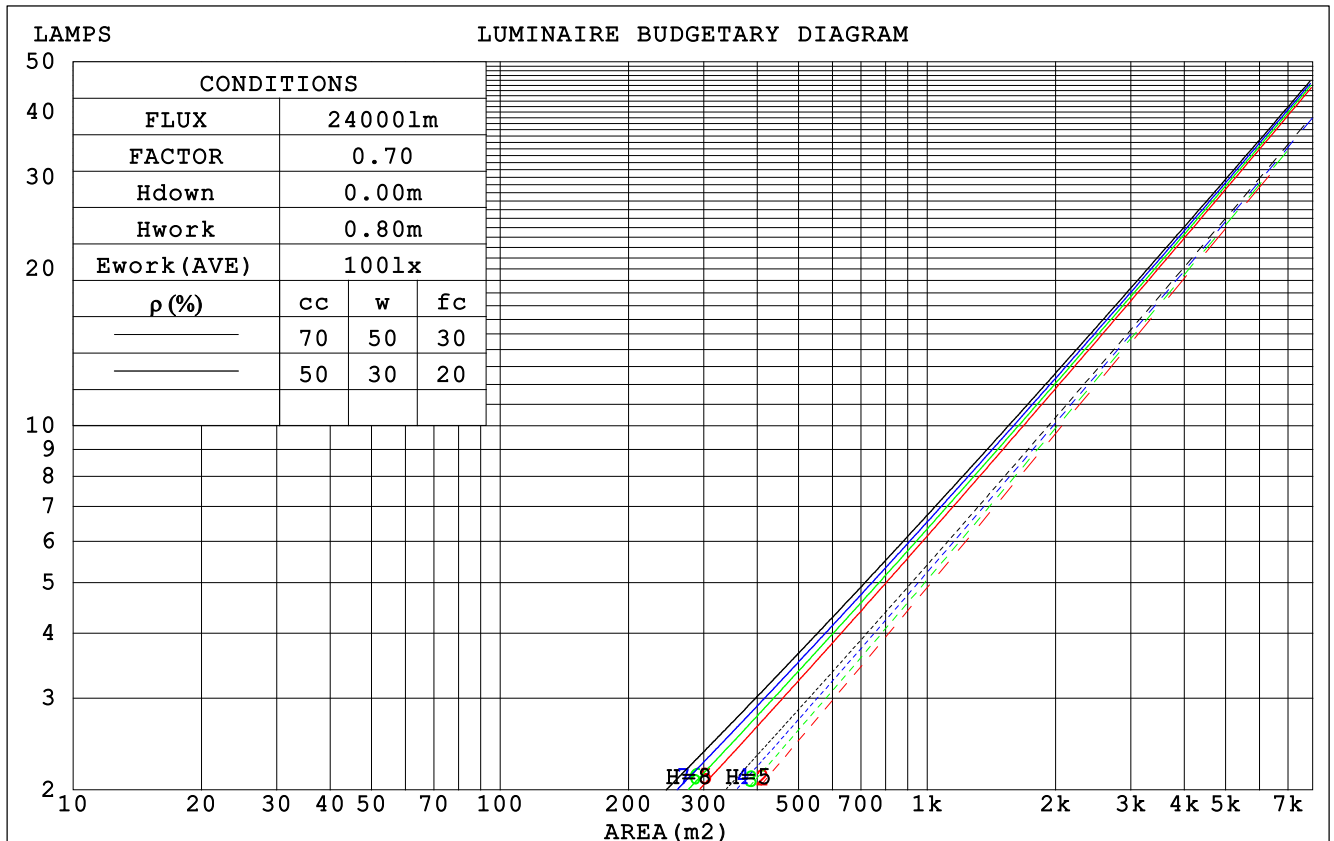
C Range: 0 - 360DEG
 C Interval: 15.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: LYJ
 Test Date: 2021-11-29

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System: EVERFINE GO-R5000_V2 SYSTEM V2.00.446
 Humidity: 65.0%
 Test Distance: 26.000m [K=0.4536]
 Remarks:

EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

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	1.09	1.06	1.04	1.07	1.04	1.02	1.03	1.01	.99	.99	.98	.96	.96	.94	.93	.91
2.0	1.00	.96	.92	.99	.94	.91	.95	.92	.89	.92	.89	.87	.89	.87	.85	.83
3.0	.93	.87	.83	.91	.86	.82	.89	.84	.81	.86	.82	.79	.84	.81	.78	.76
4.0	.86	.80	.75	.85	.79	.75	.83	.78	.74	.81	.76	.73	.79	.75	.72	.70
5.0	.80	.74	.69	.79	.73	.69	.78	.72	.68	.76	.71	.68	.74	.70	.67	.65
6.0	.75	.69	.64	.75	.68	.64	.73	.68	.64	.72	.67	.63	.70	.66	.63	.61
7.0	.71	.65	.60	.70	.64	.60	.69	.64	.60	.68	.63	.59	.67	.62	.59	.58
8.0	.67	.61	.57	.67	.61	.56	.65	.60	.56	.64	.60	.56	.63	.59	.56	.54
9.0	.64	.58	.53	.63	.57	.53	.62	.57	.53	.61	.57	.53	.61	.56	.53	.51
10.0	.61	.55	.51	.60	.55	.51	.59	.54	.51	.59	.54	.50	.58	.53	.50	.49



C Range: 0 - 360DEG
 C Interval: 15.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: LYJ
 Test Date: 2021-11-29

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System: EVERFINE GO-R5000_V2 SYSTEM V2.00.446
 Humidity: 65.0%
 Test Distance: 26.000m [K=0.4536]
 Remarks:

EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

WEC AND CCEC

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	.206	.117	.037	.200	.114	.036	.187	.107	.034	.175	.101	.032	.164	.095	.031															
2.0	.197	.108	.033	.191	.105	.032	.180	.100	.031	.170	.095	.030	.161	.091	.029															
3.0	.185	.098	.029	.180	.096	.029	.171	.092	.028	.162	.089	.027	.154	.085	.026															
4.0	.173	.090	.026	.169	.088	.026	.161	.085	.025	.153	.082	.025	.146	.080	.024															
5.0	.162	.083	.024	.159	.081	.024	.152	.079	.023	.145	.077	.023	.139	.074	.022															
6.0	.153	.077	.022	.149	.076	.022	.143	.073	.021	.137	.071	.021	.132	.070	.021															
7.0	.144	.071	.020	.141	.070	.020	.136	.069	.020	.130	.067	.019	.126	.065	.019															
8.0	.136	.067	.019	.134	.066	.019	.129	.064	.018	.124	.063	.018	.120	.061	.018															
9.0	.129	.062	.017	.127	.062	.017	.122	.060	.017	.118	.059	.017	.114	.058	.017															
10.0	.123	.059	.016	.120	.058	.016	.117	.057	.016	.113	.056	.016	.109	.055	.016															

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	.173	.157	.143	.148	.135	.123	.101	.093	.085	.058	.054	.049	.019	.017	.016		
2.0	.160	.132	.110	.137	.114	.095	.094	.079	.066	.054	.046	.039	.017	.015	.013		
3.0	.148	.114	.086	.127	.098	.075	.087	.068	.053	.050	.040	.031	.016	.013	.010		
4.0	.138	.099	.070	.119	.086	.060	.082	.060	.043	.047	.035	.025	.015	.011	.008		
5.0	.129	.088	.057	.111	.076	.050	.077	.053	.035	.044	.031	.021	.014	.010	.007		
6.0	.122	.079	.048	.105	.068	.042	.072	.048	.030	.042	.028	.018	.014	.009	.006		
7.0	.115	.071	.041	.099	.062	.035	.068	.043	.025	.040	.025	.015	.013	.008	.005		
8.0	.109	.065	.035	.093	.056	.031	.065	.040	.022	.038	.023	.013	.012	.008	.004		
9.0	.103	.060	.031	.089	.052	.027	.061	.036	.019	.036	.022	.011	.012	.007	.004		
10.0	.098	.055	.027	.084	.048	.023	.059	.034	.017	.034	.020	.010	.011	.007	.003		

C Range: 0 - 360DEG
 C Interval: 15.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:LYJ
 Test Date:2021-11-29

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-R5000_V2 SYSTEM V2.00.446
 Humidity:65.0%
 Test Distance:26.000m [K=0.4536]
 Remarks:

EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

UGR(Unified Glare Rating) Table

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	19.5	20.7	19.9	21.0	21.4	19.2	20.4	19.5	20.7	21.0
3H	20.9	22.0	21.3	22.4	22.7	20.5	21.6	20.9	21.9	22.3
4H	21.4	22.4	21.8	22.7	23.1	20.9	21.9	21.3	22.2	22.6
6H	21.6	22.5	22.0	22.9	23.3	21.0	21.9	21.4	22.3	22.7
8H	21.6	22.5	22.0	22.9	23.3	21.0	21.9	21.4	22.2	22.7
12H	21.6	22.4	22.0	22.8	23.2	20.9	21.8	21.4	22.2	22.6
4H 2H	19.9	20.9	20.3	21.2	21.6	19.6	20.6	20.0	20.9	21.3
3H	21.4	22.3	21.9	22.7	23.1	21.1	21.9	21.5	22.3	22.7
4H	22.0	22.7	22.4	23.1	23.6	21.5	22.2	21.9	22.7	23.1
6H	22.2	22.9	22.7	23.3	23.8	21.7	22.3	22.1	22.8	23.2
8H	22.3	22.9	22.7	23.3	23.8	21.7	22.3	22.1	22.7	23.2
12H	22.2	22.8	22.7	23.3	23.7	21.6	22.2	22.1	22.6	23.1
8H 4H	22.0	22.6	22.5	23.1	23.5	21.6	22.2	22.1	22.6	23.1
6H	22.3	22.8	22.8	23.3	23.8	21.8	22.3	22.3	22.8	23.3
8H	22.4	22.8	22.9	23.3	23.8	21.8	22.2	22.3	22.8	23.3
12H	22.4	22.8	22.9	23.3	23.8	21.8	22.2	22.3	22.7	23.2
12H 4H	22.0	22.5	22.5	23.0	23.5	21.6	22.1	22.1	22.6	23.1
6H	22.3	22.7	22.8	23.2	23.7	21.8	22.2	22.3	22.7	23.2
8H	22.4	22.7	22.9	23.2	23.8	21.8	22.2	22.3	22.7	23.3
CIE190: 2010										

CIE190: 2010
Area: 0.18564 m2

C Range: 0 - 360DEG
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γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
Test System:EVERFINE GO-R5000_V2 SYSTEM V2.00.446
Humidity:65.0%
Test Distance:26.000m [K=0.4536]
Remarks:

EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

UTILIZATION FACTORS TABLE

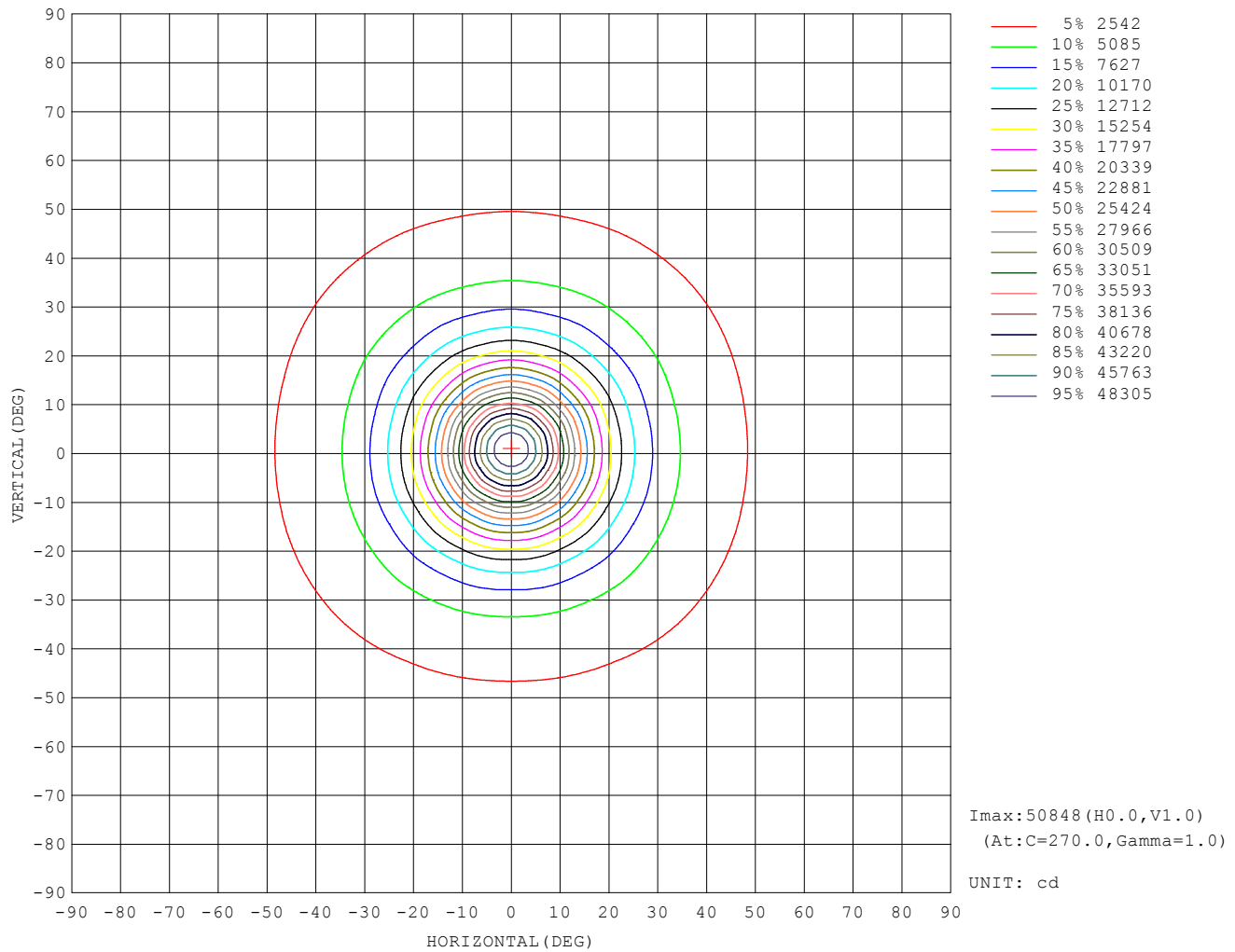
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	77	69	64	76	69	64	75	68	64	59
0.80	85	78	73	85	77	72	83	77	72	67
1.00	91	84	79	90	83	79	89	84	78	73
1.25	96	90	85	95	89	84	93	88	84	78
1.50	100	94	89	99	93	89	96	91	87	82
2.00	104	99	94	103	97	94	100	95	92	86
2.50	107	101	98	105	100	97	101	98	95	88
3.00	109	104	101	107	103	100	103	100	97	90
4.00	111	108	105	109	106	103	105	103	101	93
5.00	113	110	107	111	108	106	107	105	103	95
ROOM INDEX	UF (total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

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 Operators: LYJ
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γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System: EVERFINE GO-R5000_V2 SYSTEM V2.00.446
 Humidity: 65.0%
 Test Distance: 26.000m [K=0.4536]
 Remarks:

EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

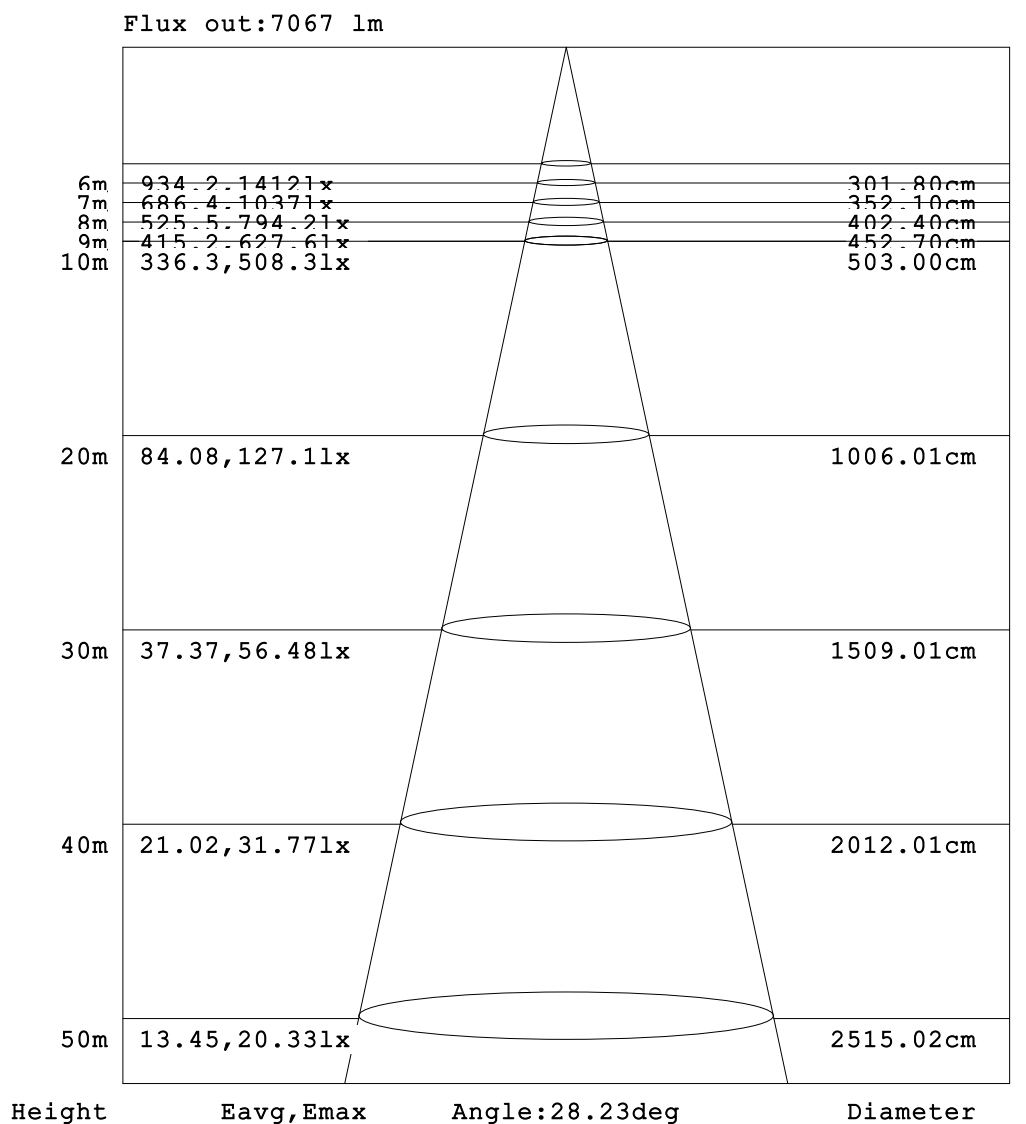
ISOCANDELA DIAGRAM



C Range: 0 - 360DEG
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Test Speed: HIGH
Temperature: 25.3DEG
Operators: LYJ
Test Date: 2021-11-29

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
Test System: EVERFINE GO-R5000_V2 SYSTEM V2.00.446
Humidity: 65.0%
Test Distance: 26.000m [K=0.4536]
Remarks:

AAI Figure



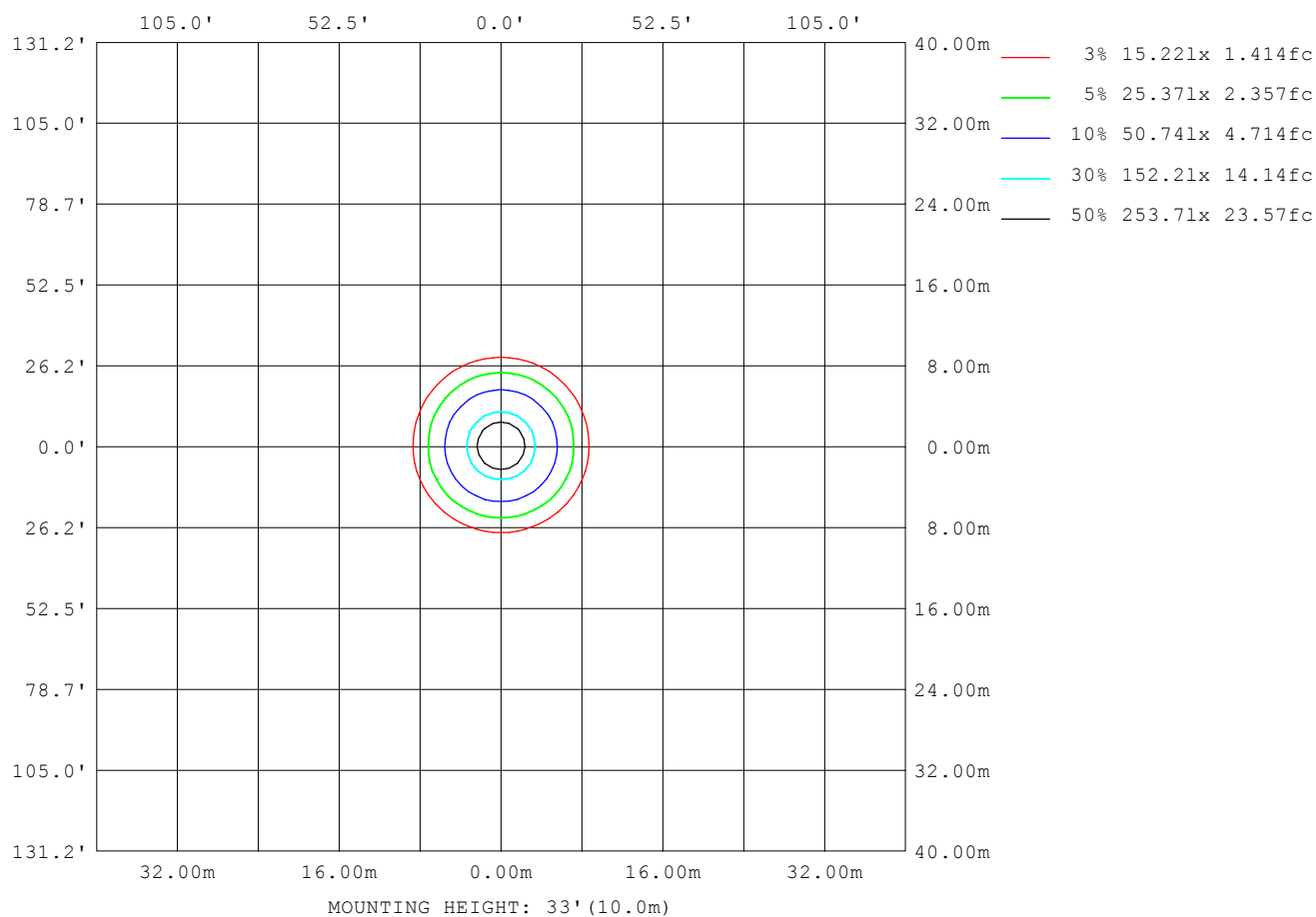
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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C Interval: 15.0DEG
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Temperature: 25.3DEG
Operators: LYJ
Test Date: 2021-11-29

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
Test System: EVERFINE GO-R5000_V2 SYSTEM V2.00.446
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Remarks:

EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

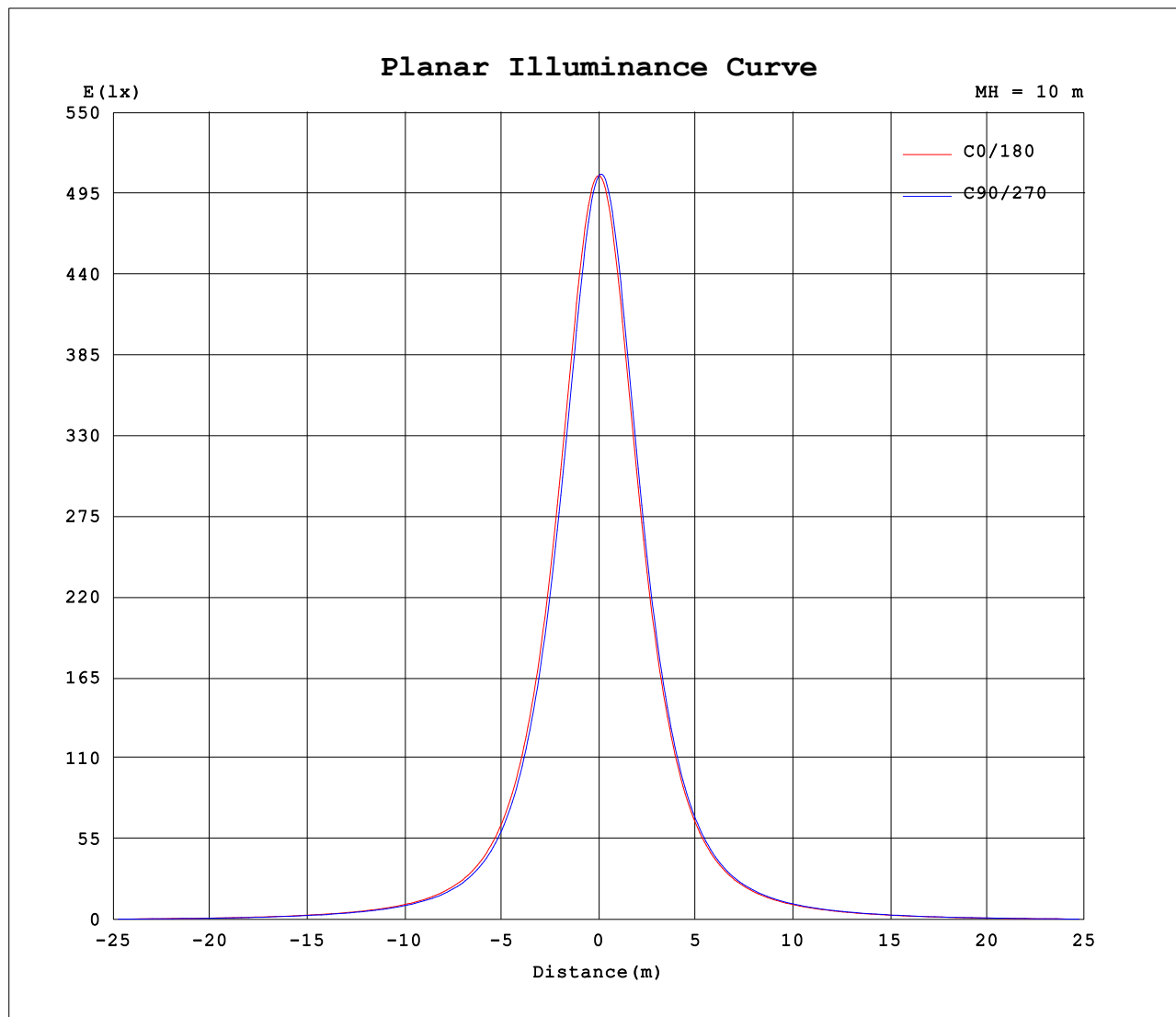
ISOLUX DIAGRAM



C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: LYJ
Test Date: 2021-11-29

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
Test System: EVERFINE GO-R5000_V2 SYSTEM V2.00.446
Humidity: 65.0%
Test Distance: 26.000m [K=0.4536]
Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: LYJ
Test Date: 2021-11-29

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
Test System: EVERFINE GO-R5000_V2 SYSTEM V2.00.446
Humidity: 65.0%
Test Distance: 26.000m [K=0.4536]
Remarks: