

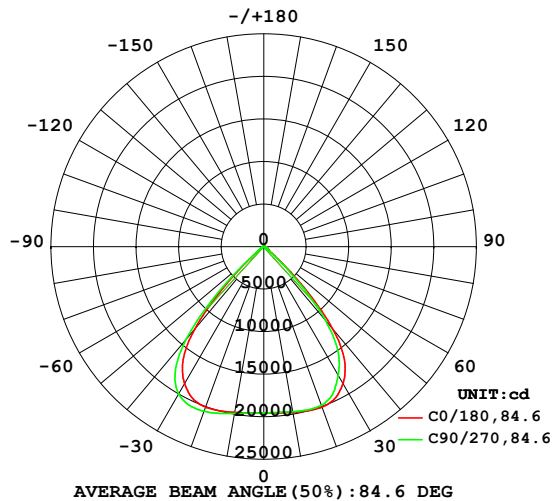
EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

LUMINAIRE PHOTOMETRIC TEST REPORT

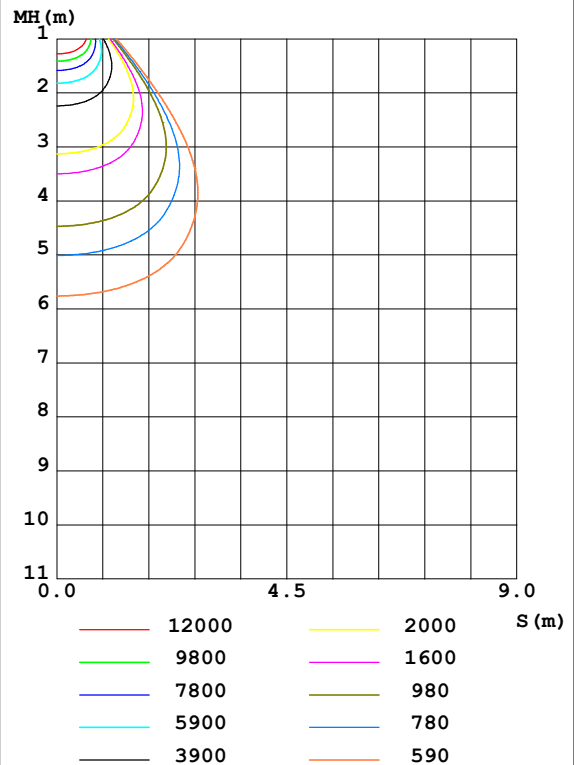
Test:U:119.3V I:1.7140A P:204.28W PF:0.9990 Freq:50.01Hz UTHDi:0.00% ITHDi:0.00% KDisp:0 Lamp Flux:33006x1 lm		
NAME: HA04-200-5770-F01606	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 161.57 lm/W			
MODEL	/	I _{max} (cd)	20648	S/MH(C0/180)	1.23
NOMINAL POWER(W)	/	LOR(%)	100.0	S/MH(C90/270)	1.27
RATED VOLTAGE(V)	/	TOTAL FLUX(lm)	33006	η UP,DN(C0-180)	0.0,48.1
NOMINAL FLUX(lm)	33006	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,51.9
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)



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	1978	1971	1970	1971	1978	1988	1991	1988	0- 10	1877	1877	5.69,5.69
20	2006	1990	1984	1990	2006	2039	2059	2039	10- 20	5677	7554	22.9,22.9
30	1861	1855	1750	1855	1861	1964	2001	1964	20- 30	9124	16678	50.5,50.5
40	1263	1135	1123	1135	1263	1322	1416	1322	30- 40	10211	26889	81.5,81.5
50	167.4	175.2	133.8	175.2	167.4	216.8	190.4	216.8	40- 50	4974	31863	96.5,96.5
60	42.17	35.42	36.56	35.42	42.17	39.92	44.18	39.92	50- 60	657.1	32520	98.5,98.5
70	25.46	19.28	20.25	19.28	25.46	23.08	25.78	23.08	60- 70	296.6	32816	99.4,99.4
80	8.902	6.107	5.022	6.107	8.902	8.489	8.927	8.489	70- 80	155.1	32971	99.9,99.9
90	0.0365	0.0291	0.0291	0.0291	0.0365	0.0721	0.0830	0.0721	80- 90	34.69	33006	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): 30375 lm

%lum = 92.0%

%lamp = 92.0%

Conical surface Flux(120deg): 32520 lm

%lum = 98.5%

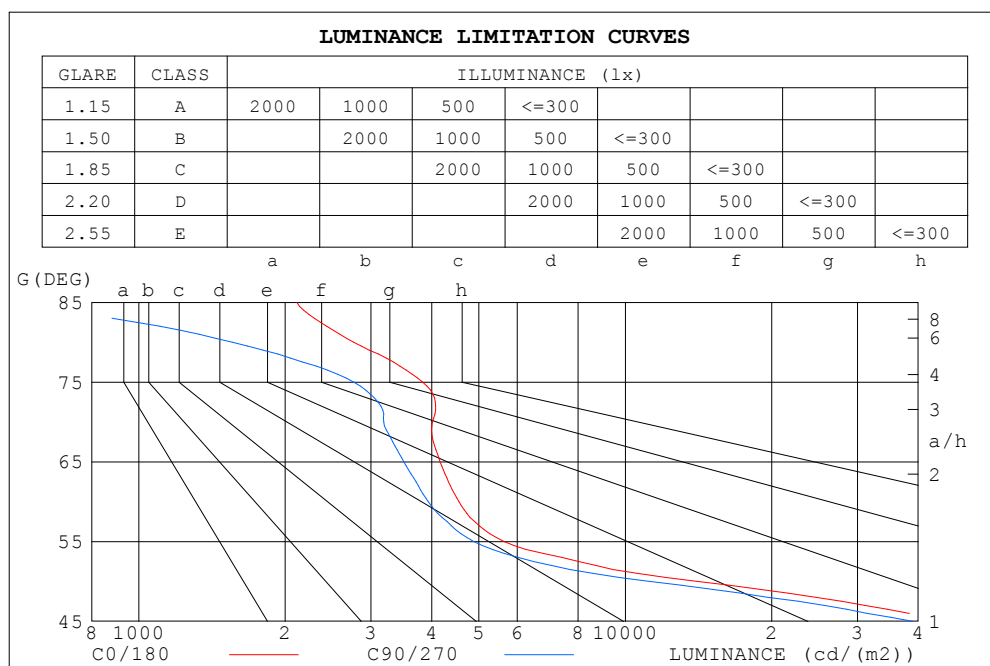
%lamp = 98.5%

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C Interval: 15.0DEG
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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%
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Remarks:

EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

LUMINANCE LIMITATION CURVES



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	2115	609
80	2765	1557
75	3834	2769
70	4016	3189
65	4164	3507
60	4550	3937
55	5640	4889
50	14051	11214
45	47114	39021

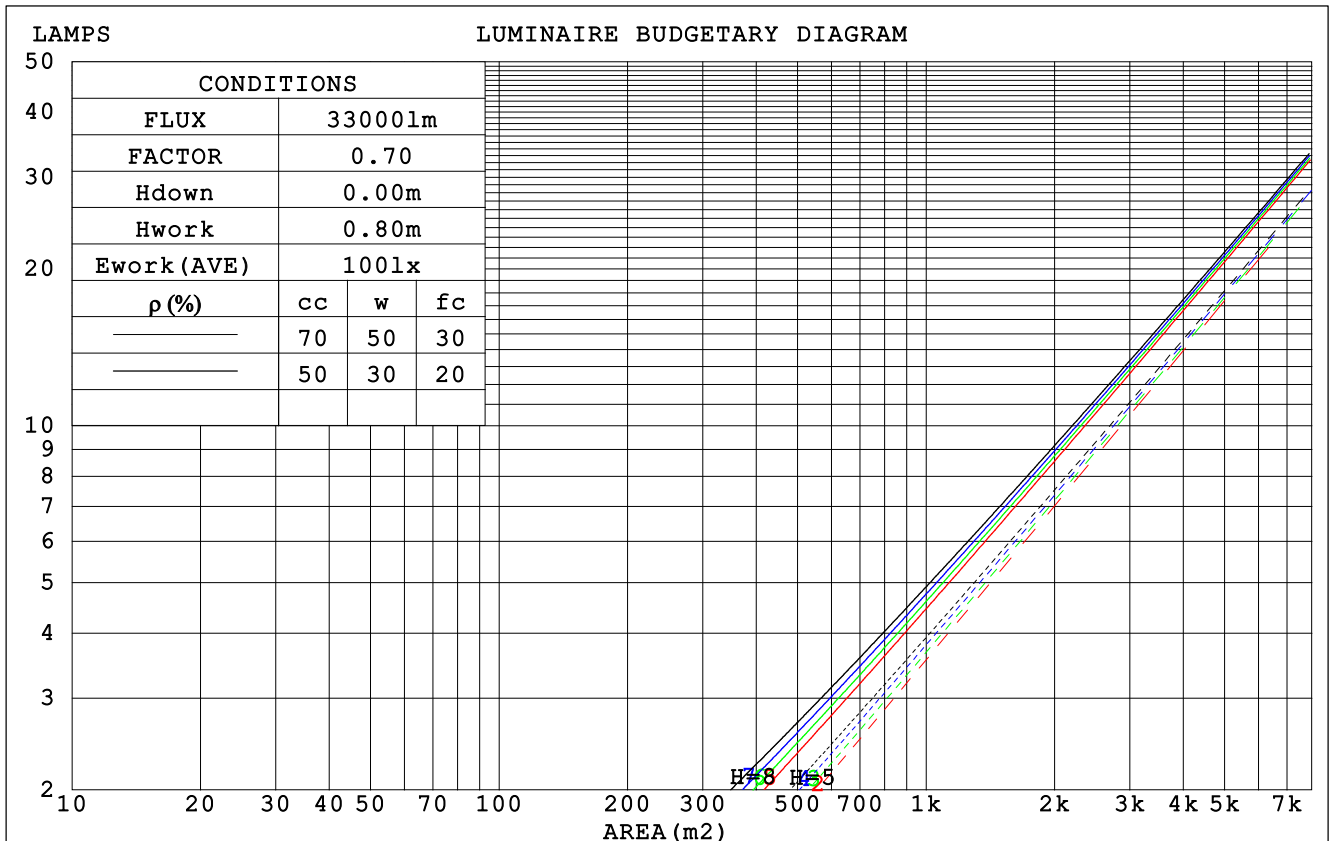
C Range: 0 - 360DEG
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 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: LYJ
 Test Date: 2021-11-29

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:

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	1.07	1.04	1.07	1.05	1.02	1.03	1.01	.99	.99	.98	.96	.96	.95	.94	.92
2.0	1.00	.96	.92	.99	.94	.91	.95	.92	.89	.92	.89	.87	.89	.87	.85	.83
3.0	.92	.86	.82	.91	.85	.81	.88	.83	.80	.85	.82	.79	.83	.80	.77	.76
4.0	.85	.78	.73	.83	.78	.73	.81	.76	.72	.79	.75	.71	.77	.73	.70	.69
5.0	.78	.71	.66	.77	.71	.66	.75	.70	.65	.73	.68	.65	.72	.67	.64	.62
6.0	.72	.65	.60	.71	.65	.60	.69	.64	.59	.68	.63	.59	.67	.62	.59	.57
7.0	.67	.60	.55	.66	.59	.55	.64	.59	.54	.63	.58	.54	.62	.57	.54	.52
8.0	.62	.55	.50	.61	.54	.50	.60	.54	.50	.59	.53	.49	.58	.53	.49	.48
9.0	.57	.51	.46	.57	.50	.46	.56	.50	.46	.55	.49	.45	.54	.49	.45	.44
10.0	.53	.47	.42	.53	.47	.42	.52	.46	.42	.51	.46	.42	.50	.45	.42	.40



C Range: 0 - 360DEG
 C Interval: 15.0DEG
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 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	.202	.115	.036	.196	.112	.035	.183	.105	.034	.171	.099	.032	.160	.093	.030															
2.0	.196	.108	.033	.191	.105	.032	.180	.100	.031	.170	.095	.030	.161	.091	.029															
3.0	.188	.100	.030	.183	.098	.030	.174	.094	.029	.165	.091	.028	.157	.087	.027															
4.0	.180	.094	.027	.176	.092	.027	.167	.089	.027	.160	.086	.026	.153	.083	.025															
5.0	.172	.088	.025	.168	.086	.025	.161	.084	.025	.154	.081	.024	.148	.079	.024															
6.0	.164	.082	.024	.161	.081	.023	.154	.079	.023	.148	.077	.023	.143	.075	.022															
7.0	.156	.077	.022	.153	.076	.022	.148	.075	.022	.142	.073	.021	.137	.071	.021															
8.0	.149	.073	.021	.147	.072	.020	.142	.071	.020	.137	.069	.020	.132	.068	.020															
9.0	.143	.069	.019	.140	.068	.019	.136	.067	.019	.131	.066	.019	.127	.065	.019															
10.0	.137	.066	.018	.134	.065	.018	.130	.064	.018	.126	.063	.018	.123	.062	.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	.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	.149	.114	.086	.128	.098	.074	.088	.068	.052	.051	.040	.031	.016	.013	.010	
4.0	.140	.099	.069	.120	.086	.060	.082	.060	.042	.048	.035	.025	.015	.011	.008	
5.0	.132	.088	.056	.113	.076	.049	.078	.053	.034	.045	.031	.020	.015	.010	.007	
6.0	.125	.079	.046	.108	.069	.040	.074	.048	.029	.043	.028	.017	.014	.009	.006	
7.0	.119	.072	.039	.103	.063	.034	.071	.044	.024	.041	.026	.014	.013	.008	.005	
8.0	.114	.066	.033	.098	.057	.029	.068	.040	.021	.040	.024	.012	.013	.008	.004	
9.0	.109	.061	.029	.094	.053	.025	.065	.037	.018	.038	.022	.011	.012	.007	.004	
10.0	.104	.057	.025	.090	.049	.022	.062	.035	.016	.036	.021	.009	.012	.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	9.1	10.2	9.4	10.5	10.8	8.5	9.6	8.8	9.9	10.2
3H	10.7	11.7	11.1	12.0	12.4	9.9	10.9	10.3	11.2	11.6
4H	11.3	12.2	11.7	12.6	13.0	10.4	11.3	10.8	11.6	12.0
6H	11.7	12.5	12.1	12.9	13.3	10.5	11.4	11.0	11.7	12.1
8H	11.8	12.6	12.2	13.0	13.4	10.5	11.3	11.0	11.7	12.1
12H	11.8	12.6	12.2	12.9	13.4	10.5	11.2	10.9	11.6	12.1
4H 2H	9.4	10.3	9.8	10.7	11.0	8.9	9.8	9.3	10.2	10.6
3H	11.2	11.9	11.6	12.3	12.7	10.5	11.2	10.9	11.6	12.0
4H	11.9	12.6	12.3	13.0	13.4	11.0	11.7	11.5	12.1	12.5
6H	12.4	12.9	12.8	13.4	13.8	11.3	11.8	11.7	12.3	12.7
8H	12.5	13.0	12.9	13.4	13.9	11.2	11.8	11.7	12.2	12.7
12H	12.5	13.0	13.0	13.5	13.9	11.2	11.7	11.7	12.2	12.6
8H 4H	12.0	12.5	12.4	12.9	13.4	11.1	11.7	11.6	12.1	12.6
6H	12.5	12.9	13.0	13.4	13.9	11.4	11.9	11.9	12.4	12.8
8H	12.6	13.0	13.2	13.5	14.0	11.4	11.8	12.0	12.3	12.8
12H	12.8	13.1	13.3	13.6	14.2	11.4	11.8	11.9	12.3	12.8
12H 4H	11.9	12.4	12.4	12.9	13.4	11.1	11.6	11.6	12.1	12.6
6H	12.5	12.8	13.0	13.3	13.9	11.4	11.8	12.0	12.3	12.8
8H	12.6	13.0	13.2	13.5	14.0	11.5	11.8	12.0	12.3	12.9
CIE190: 2010										

CIE190: 2010
Area: 0.18564 m2

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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

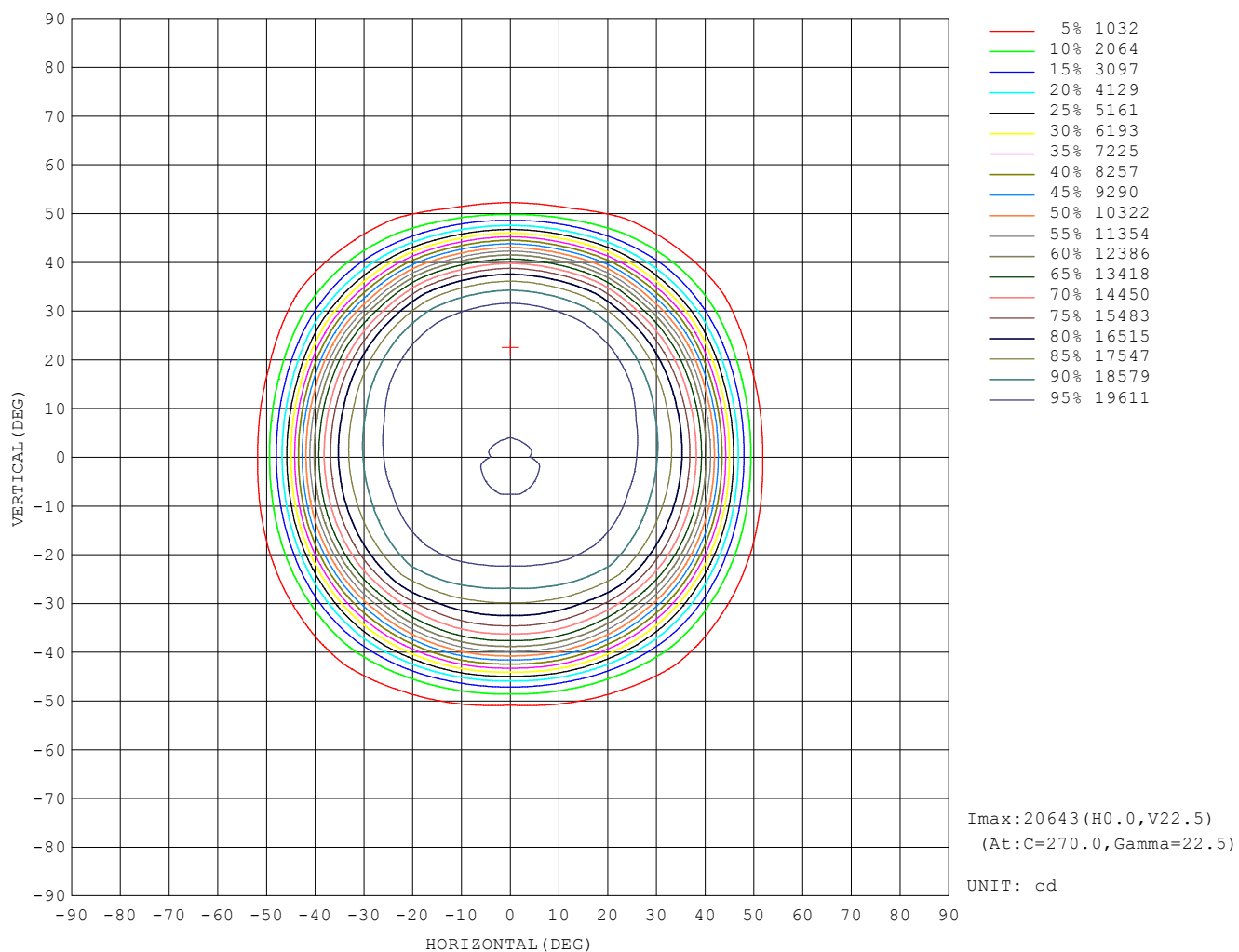
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	80	72	68	79	72	68	78	72	67	63
0.80	89	81	77	88	81	77	86	80	76	72
1.00	95	88	83	94	87	83	92	88	83	78
1.25	99	93	89	98	93	89	96	91	88	83
1.50	103	97	93	101	96	93	99	95	92	87
2.00	106	102	98	105	100	97	102	98	96	90
2.50	108	104	100	107	103	100	103	100	98	91
3.00	110	106	103	108	105	102	105	102	100	93
4.00	112	109	107	110	108	105	107	104	102	95
5.00	114	111	109	112	109	107	108	106	104	96
ROOM INDEX	UF (total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

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 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

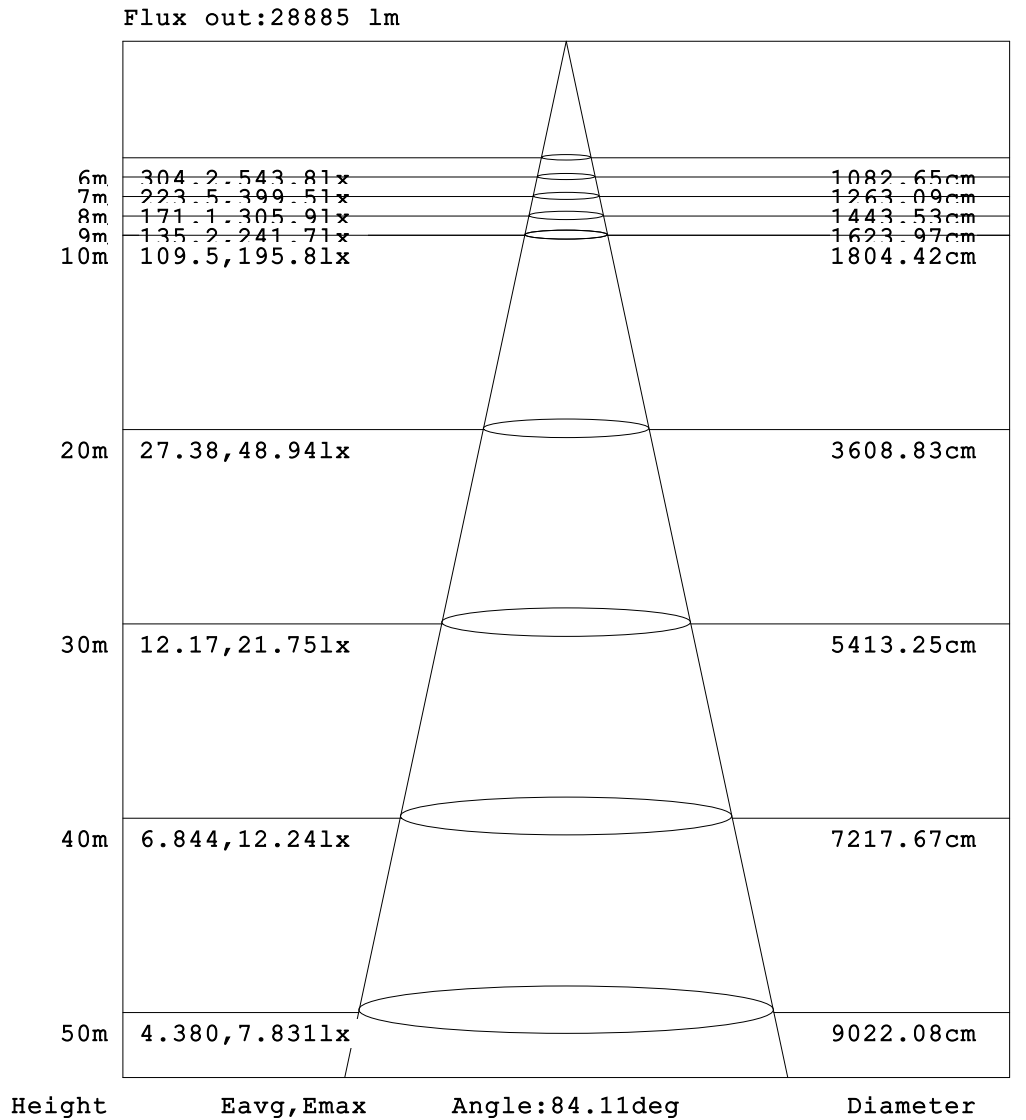
ISOCANDELA DIAGRAM



C Range: 0 - 360DEG
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Test Date:2021-11-29

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Remarks:

AAI Figure



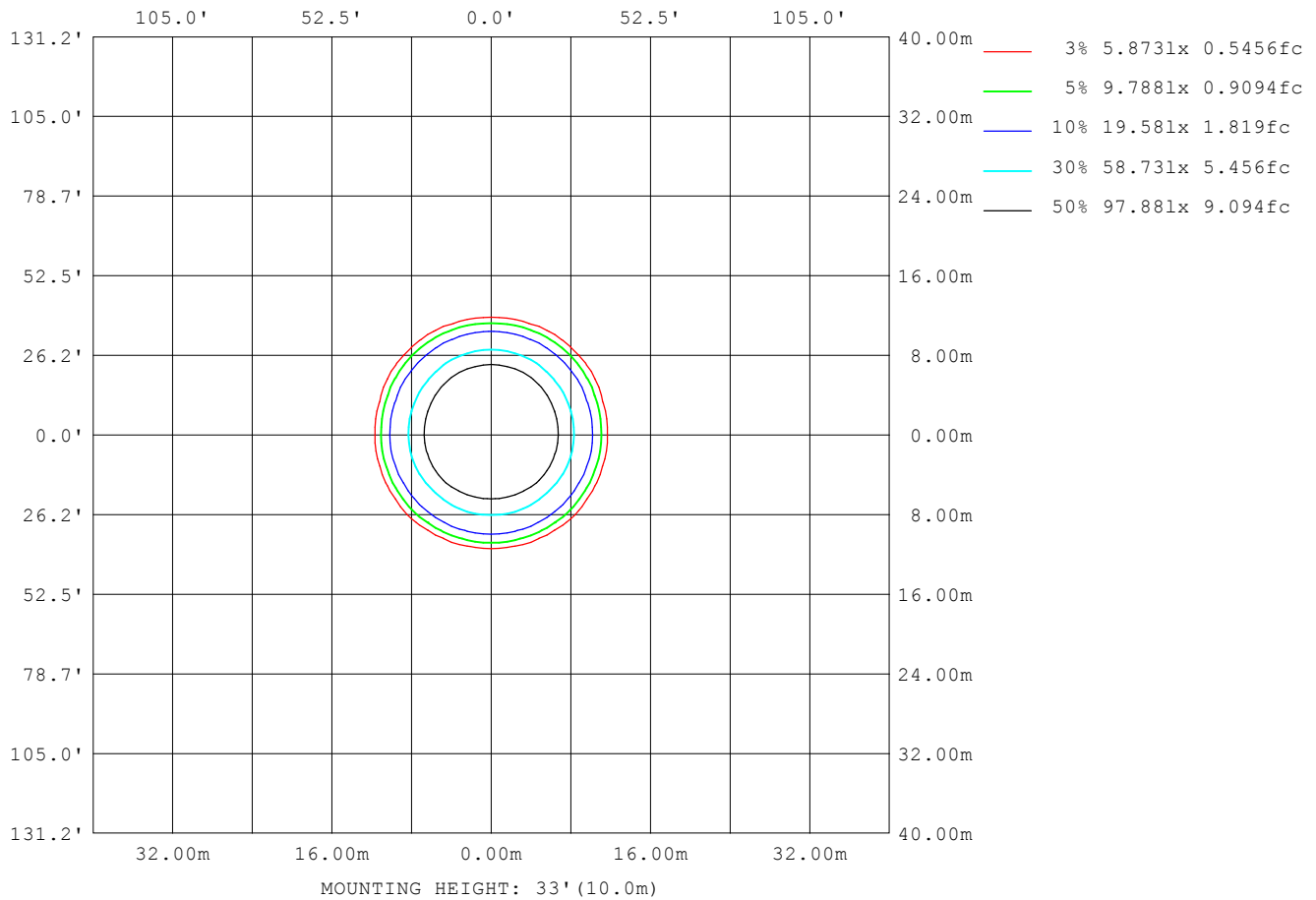
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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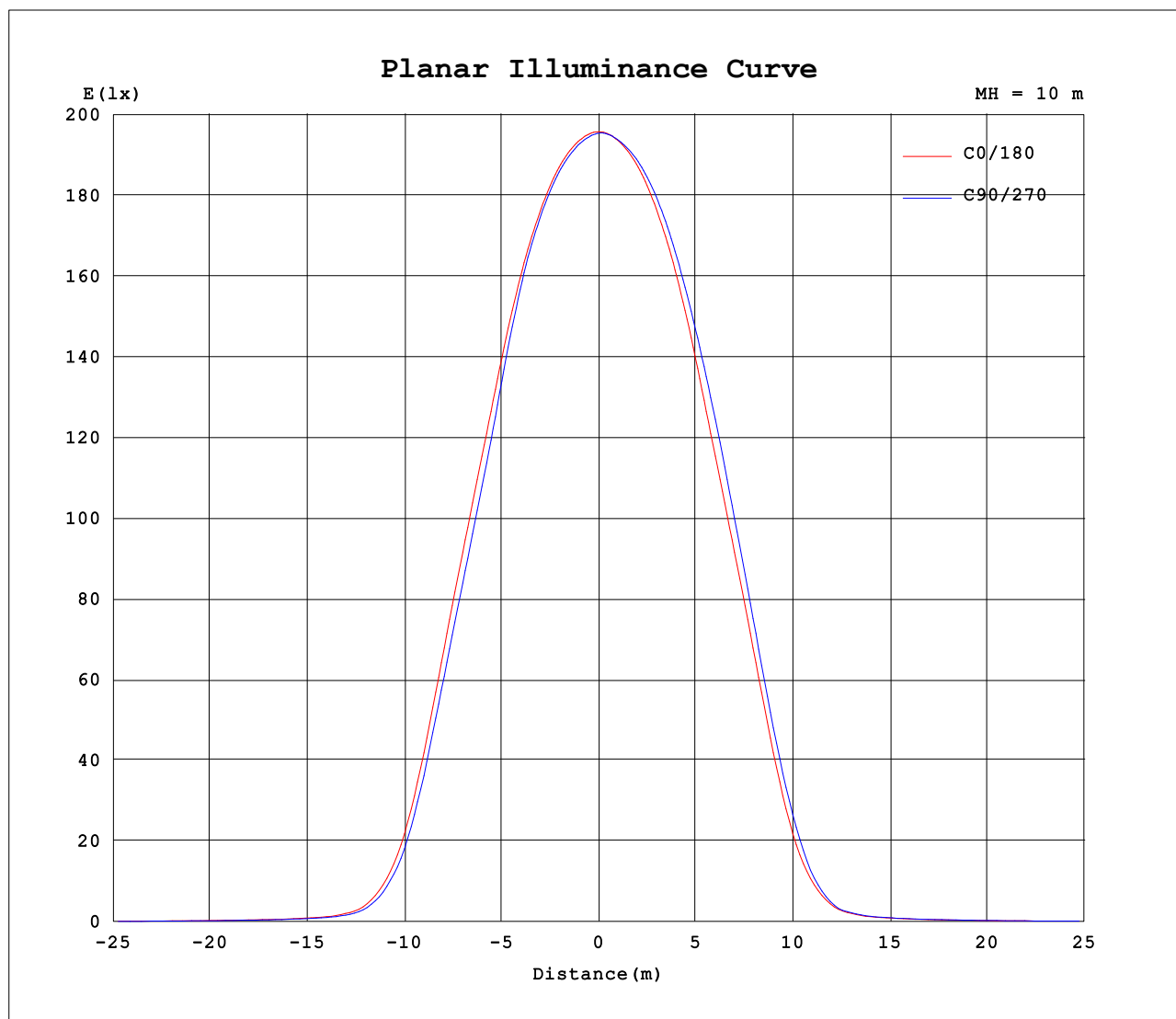
ISOLUX DIAGRAM



C Range: 0 - 360DEG
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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
Humidity: 65.0%
Test Distance: 26.000m [K=0.4536]
Remarks:

Planar Illuminance Curve



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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: