

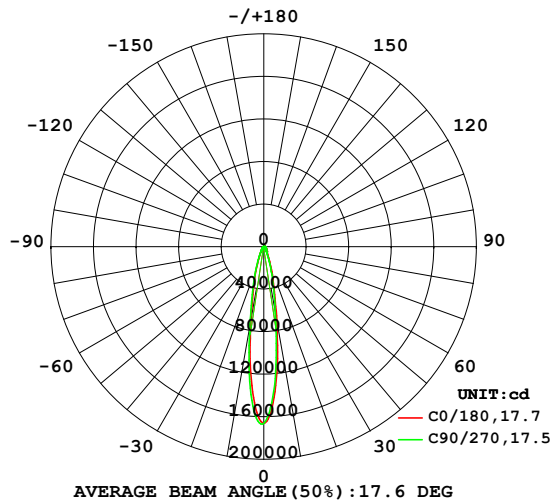
EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

LUMINAIRE PHOTOMETRIC TEST REPORT

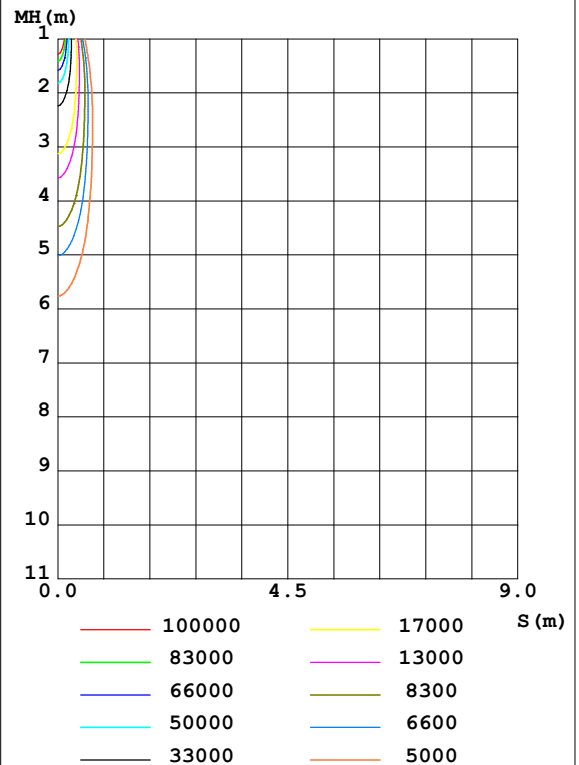
Test:U:119.3V I:1.7128A P:204.19W PF:0.9990 Freq:50.01Hz UTHDi:0.00% ITHDi:0.00% KDisp:0 Lamp Flux:31905.8x1 lm		
NAME: HA04-200-5770-F01603	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 156.26 lm/W			
MODEL	/	I _{max} (cd)	166771	S/MH(C0/180)	0.31
NOMINAL POWER(W)	/	LOR(%)	100.0	S/MH(C90/270)	0.32
RATED VOLTAGE(V)	/	TOTAL FLUX(lm)	31906	η UP,DN(C0-180)	0.0,47.6
NOMINAL FLUX(lm)	31905.8	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,52.4
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	0.00
TEST VOLTAGE(V)	120	η down(%)	100.0	CIBSE SHR MAX	0.30

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	710.9	677.9	636.1	677.9	710.9	734.3	763.8	734.3	0- 10	10459	10459	32.8,32.8
20	190.0	173.2	162.7	173.2	190.0	200.4	207.2	200.4	10- 20	10120	20580	64.5,64.5
30	58.14	53.59	50.55	53.59	58.14	59.92	61.03	59.92	20- 30	4723	25302	79.3,79.3
40	27.38	25.84	24.96	25.84	27.38	27.64	27.89	27.64	30- 40	2370	27673	86.7,86.7
50	17.79	16.32	16.32	16.32	17.79	17.65	18.18	17.65	40- 50	1634	29306	91.9,91.9
60	12.08	10.64	11.01	10.64	12.08	11.68	12.33	11.68	50- 60	1265	30571	95.8,95.8
70	6.933	5.537	6.111	5.537	6.933	6.173	6.972	6.173	60- 70	867.4	31439	98.5,98.5
80	2.095	1.423	1.479	1.423	2.095	1.729	2.054	1.729	70- 80	405.7	31844	99.8,99.8
90	0.0078	0.0065	0.0066	0.0065	0.0078	0.0132	0.0162	0.0132	80- 90	61.44	31906	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:X100cd									UNIT:lm		

Conical surface Flux(90deg): 28542 lm

%lum = 89.5%

%lamp = 89.5%

Conical surface Flux(120deg): 30571 lm

%lum = 95.8%

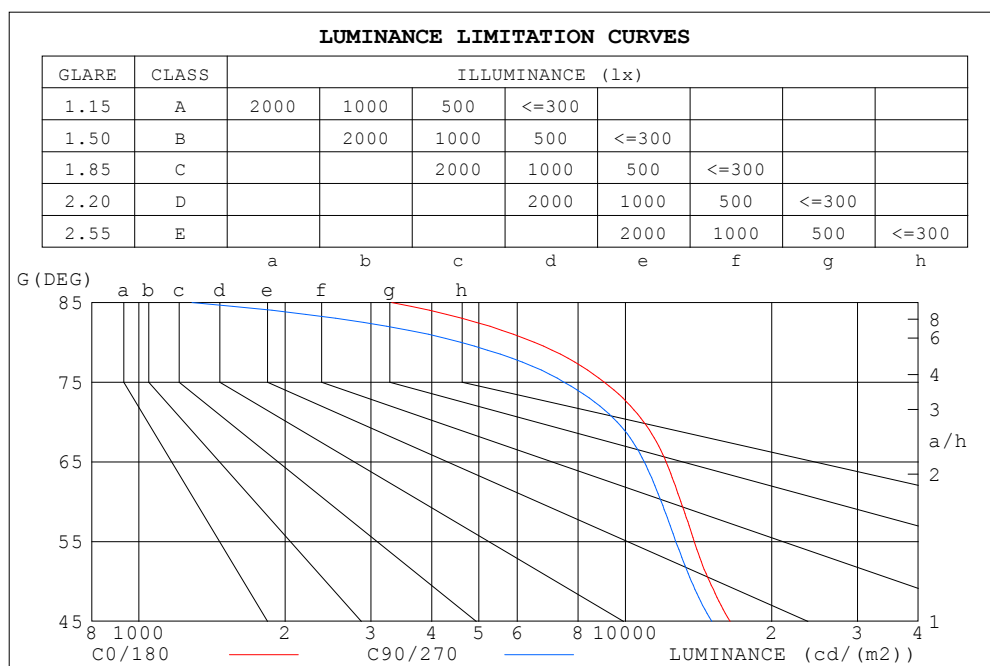
%lamp = 95.8%

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:

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LUMINANCE LIMITATION CURVES



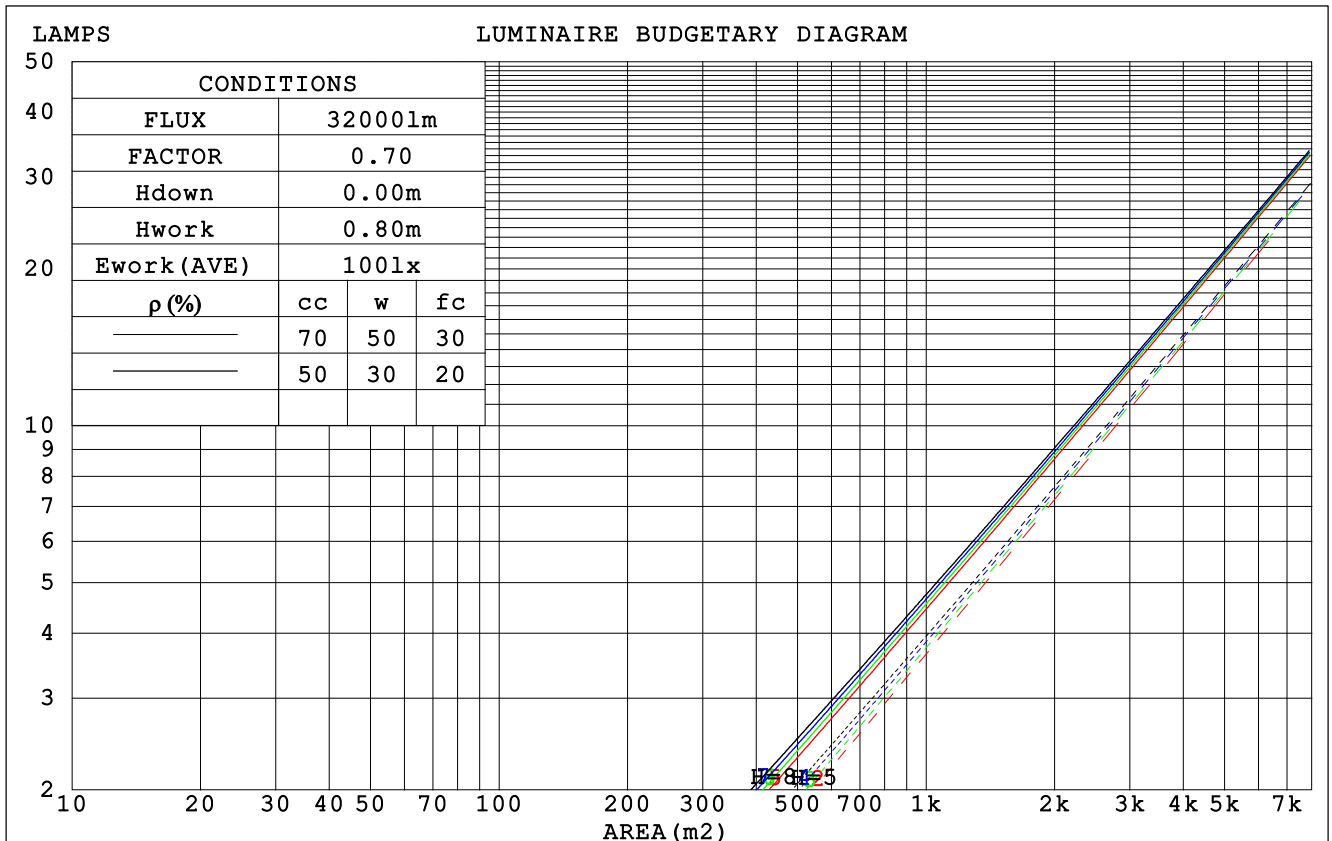
C Range: 0 - 360DEG
 C Interval: 15.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: LYJ
 Test Date: 2021-11-29

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

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			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	1.11	1.09	1.07	1.09	1.07	1.05	1.05	1.03	1.02	1.01	1.00	.99	.98	.97	.96	.94
2.0	1.04	1.01	.97	1.03	.99	.96	.99	.97	.94	.96	.94	.92	.94	.92	.90	.89
3.0	.98	.94	.90	.97	.93	.90	.94	.91	.88	.92	.89	.87	.90	.87	.85	.84
4.0	.93	.88	.85	.92	.88	.84	.90	.86	.83	.88	.85	.82	.86	.84	.81	.80
5.0	.89	.84	.80	.88	.83	.80	.86	.82	.79	.85	.81	.78	.83	.80	.78	.76
6.0	.85	.80	.76	.84	.79	.76	.83	.79	.75	.82	.78	.75	.80	.77	.74	.73
7.0	.82	.77	.73	.81	.76	.73	.80	.76	.72	.79	.75	.72	.78	.74	.72	.70
8.0	.79	.74	.70	.78	.73	.70	.77	.73	.70	.76	.72	.69	.75	.72	.69	.68
9.0	.76	.71	.68	.75	.71	.68	.75	.70	.67	.74	.70	.67	.73	.69	.67	.66
10.0	.73	.69	.65	.73	.68	.65	.72	.68	.65	.72	.68	.65	.71	.67	.65	.64



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	.169	.096	.030	.162	.093	.029	.150	.086	.027	.138	.080	.026	.128	.074	.024															
2.0	.159	.087	.027	.153	.084	.026	.143	.079	.025	.133	.075	.023	.124	.070	.022															
3.0	.148	.079	.024	.144	.077	.023	.135	.073	.022	.126	.069	.021	.119	.066	.020															
4.0	.138	.072	.021	.134	.070	.021	.127	.067	.020	.120	.064	.019	.113	.062	.019															
5.0	.130	.066	.019	.126	.065	.019	.120	.062	.018	.114	.060	.018	.108	.058	.017															
6.0	.122	.061	.017	.119	.060	.017	.113	.058	.017	.108	.056	.016	.103	.054	.016															
7.0	.115	.057	.016	.112	.056	.016	.107	.054	.016	.103	.053	.015	.098	.051	.015															
8.0	.108	.053	.015	.106	.052	.015	.102	.051	.015	.098	.050	.014	.094	.048	.014															
9.0	.103	.050	.014	.101	.049	.014	.097	.048	.014	.093	.047	.013	.090	.046	.013															
10.0	.098	.047	.013	.096	.046	.013	.093	.045	.013	.089	.044	.013	.086	.043	.012															

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	.171	.157	.145	.146	.135	.125	.100	.093	.087	.057	.054	.050	.018	.017	.016		
2.0	.155	.133	.114	.132	.114	.099	.091	.079	.069	.052	.046	.040	.017	.015	.013		
3.0	.141	.113	.092	.121	.098	.079	.083	.068	.056	.048	.040	.033	.015	.013	.011		
4.0	.130	.099	.075	.111	.085	.065	.076	.059	.046	.044	.035	.027	.014	.011	.009		
5.0	.120	.087	.062	.103	.075	.054	.071	.052	.038	.041	.031	.023	.013	.010	.007		
6.0	.111	.077	.052	.096	.067	.046	.066	.047	.032	.038	.027	.019	.012	.009	.006		
7.0	.104	.069	.045	.089	.060	.039	.062	.042	.028	.036	.025	.016	.012	.008	.005		
8.0	.097	.062	.039	.084	.054	.034	.058	.038	.024	.034	.022	.014	.011	.007	.005		
9.0	.091	.057	.034	.079	.049	.029	.055	.035	.021	.032	.020	.012	.010	.007	.004		
10.0	.086	.052	.030	.074	.045	.026	.052	.032	.018	.030	.019	.011	.010	.006	.004		

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	16.7	17.8	17.1	18.1	18.4	16.3	17.4	16.7	17.7	18.0
3H	18.3	19.2	18.7	19.6	19.9	17.8	18.7	18.1	19.0	19.4
4H	18.8	19.6	19.2	20.0	20.4	18.2	19.0	18.6	19.4	19.8
6H	19.0	19.8	19.4	20.2	20.6	18.3	19.1	18.7	19.5	19.9
8H	19.0	19.8	19.4	20.2	20.6	18.3	19.0	18.7	19.4	19.9
12H	19.0	19.7	19.4	20.1	20.5	18.2	19.0	18.7	19.4	19.8
4H 2H	17.1	18.0	17.5	18.3	18.7	16.7	17.6	17.1	18.0	18.3
3H	18.8	19.5	19.2	19.9	20.3	18.3	19.0	18.7	19.4	19.8
4H	19.3	19.9	19.7	20.4	20.8	18.8	19.4	19.2	19.8	20.3
6H	19.6	20.2	20.1	20.6	21.1	19.0	19.5	19.4	20.0	20.4
8H	19.6	20.2	20.1	20.6	21.1	19.0	19.5	19.4	19.9	20.4
12H	19.6	20.1	20.1	20.6	21.0	18.9	19.4	19.4	19.8	20.3
8H 4H	19.3	19.9	19.8	20.3	20.8	18.8	19.4	19.3	19.8	20.3
6H	19.7	20.1	20.2	20.6	21.1	19.1	19.5	19.6	20.0	20.5
8H	19.7	20.1	20.3	20.6	21.1	19.1	19.4	19.6	20.0	20.5
12H	19.8	20.1	20.3	20.6	21.2	19.1	19.4	19.6	19.9	20.4
12H 4H	19.3	19.7	19.8	20.2	20.7	18.8	19.3	19.3	19.7	20.2
6H	19.6	20.0	20.2	20.5	21.0	19.0	19.4	19.6	19.9	20.4
8H	19.7	20.0	20.3	20.5	21.1	19.1	19.4	19.6	19.9	20.5
CIE190: 2010										

CIE190: 2010
Area: 0.18564 m2

C Range: 0 - 360DEG
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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

UTILIZATION FACTORS TABLE

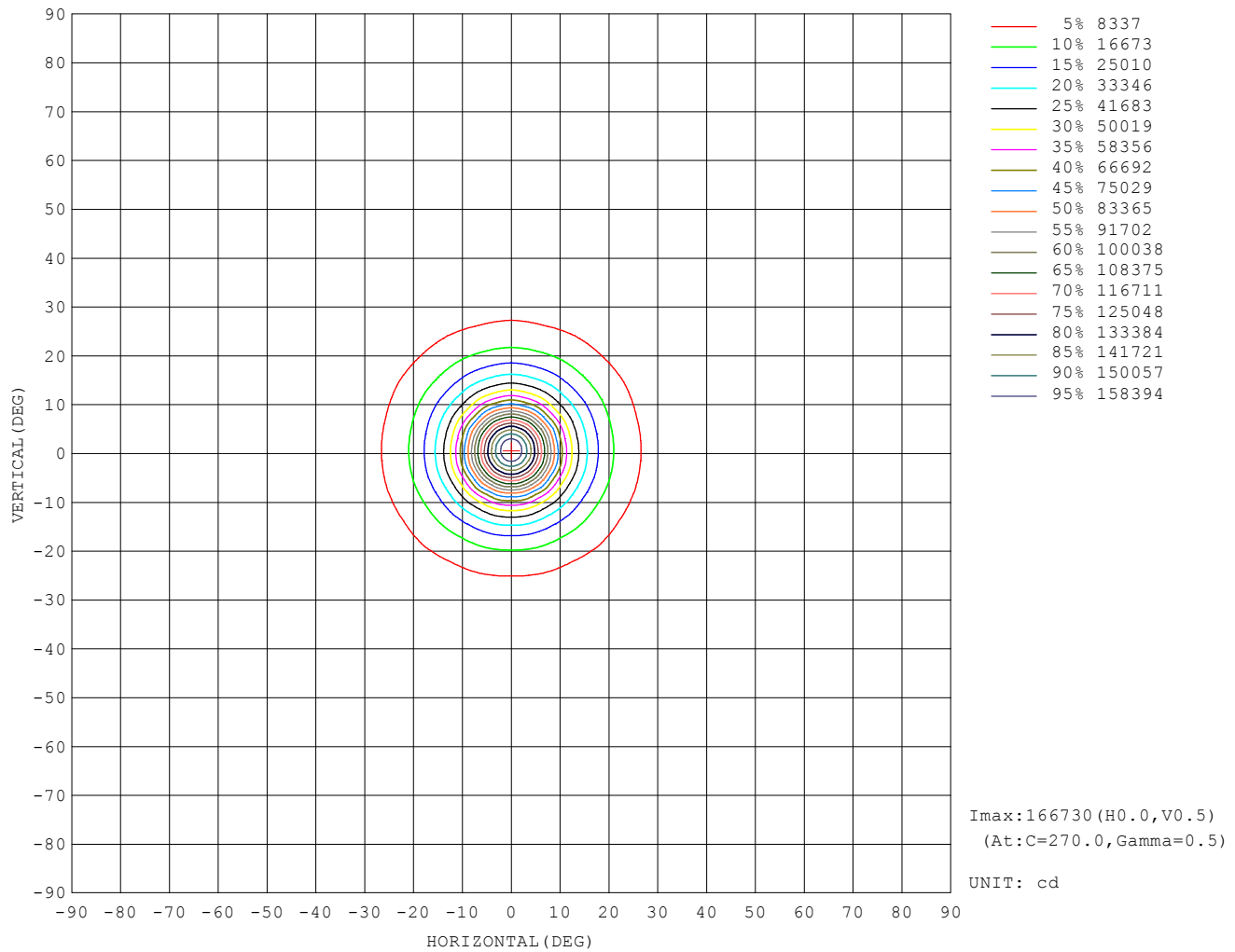
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	83	76	72	83	76	72	82	76	72	68
0.80	91	84	80	90	84	80	89	83	80	76
1.00	96	90	86	95	89	85	93	89	85	80
1.25	100	94	90	99	94	90	97	93	89	85
1.50	103	98	94	102	97	94	100	96	93	88
2.00	107	102	98	105	101	97	102	99	96	90
2.50	109	104	101	107	103	100	104	101	98	92
3.00	110	107	104	109	105	102	105	102	100	94
4.00	113	110	107	111	108	106	107	105	103	96
5.00	114	112	110	112	110	108	108	106	105	97
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

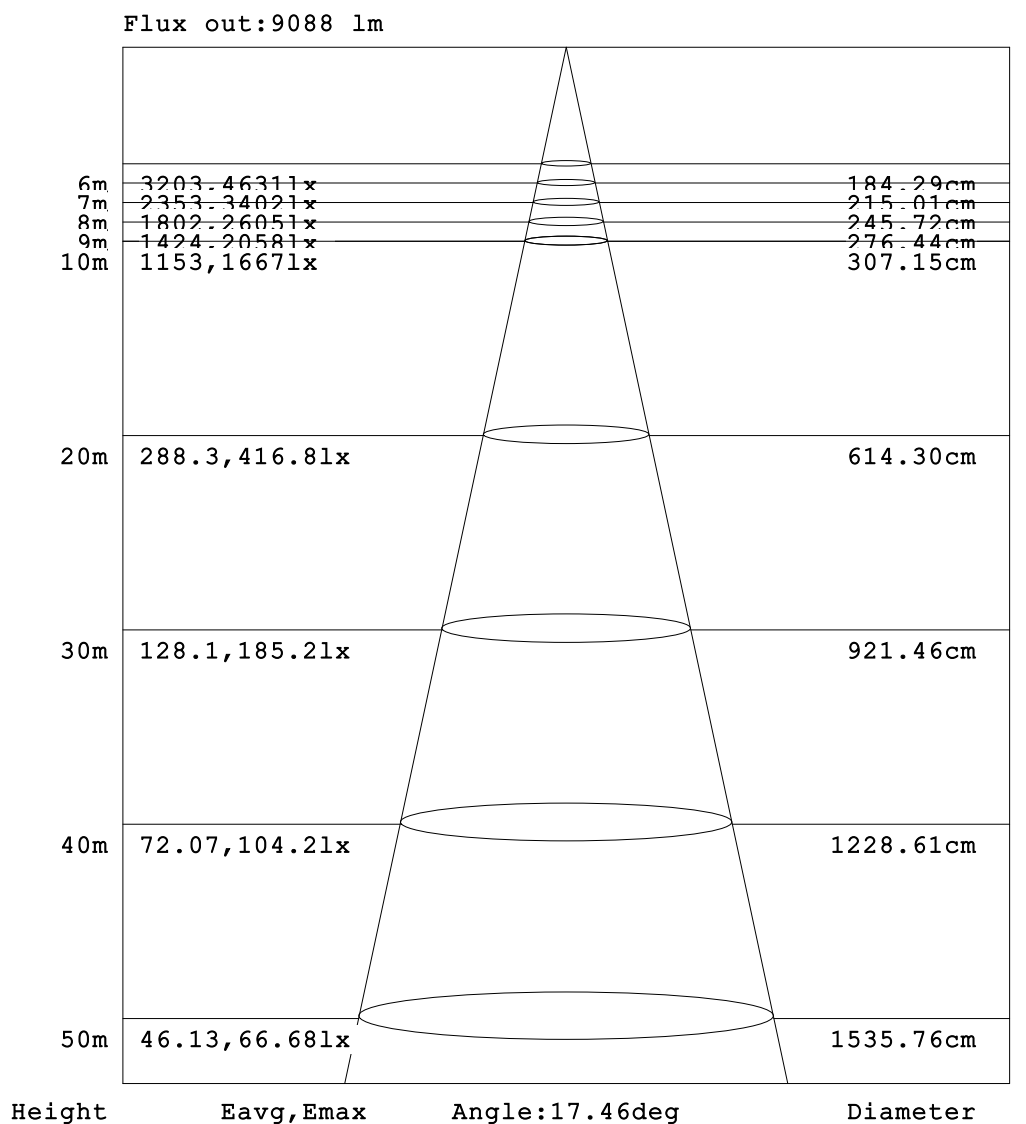
ISOCANDELA DIAGRAM



C Range: 0 - 360DEG
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:

AAI Figure



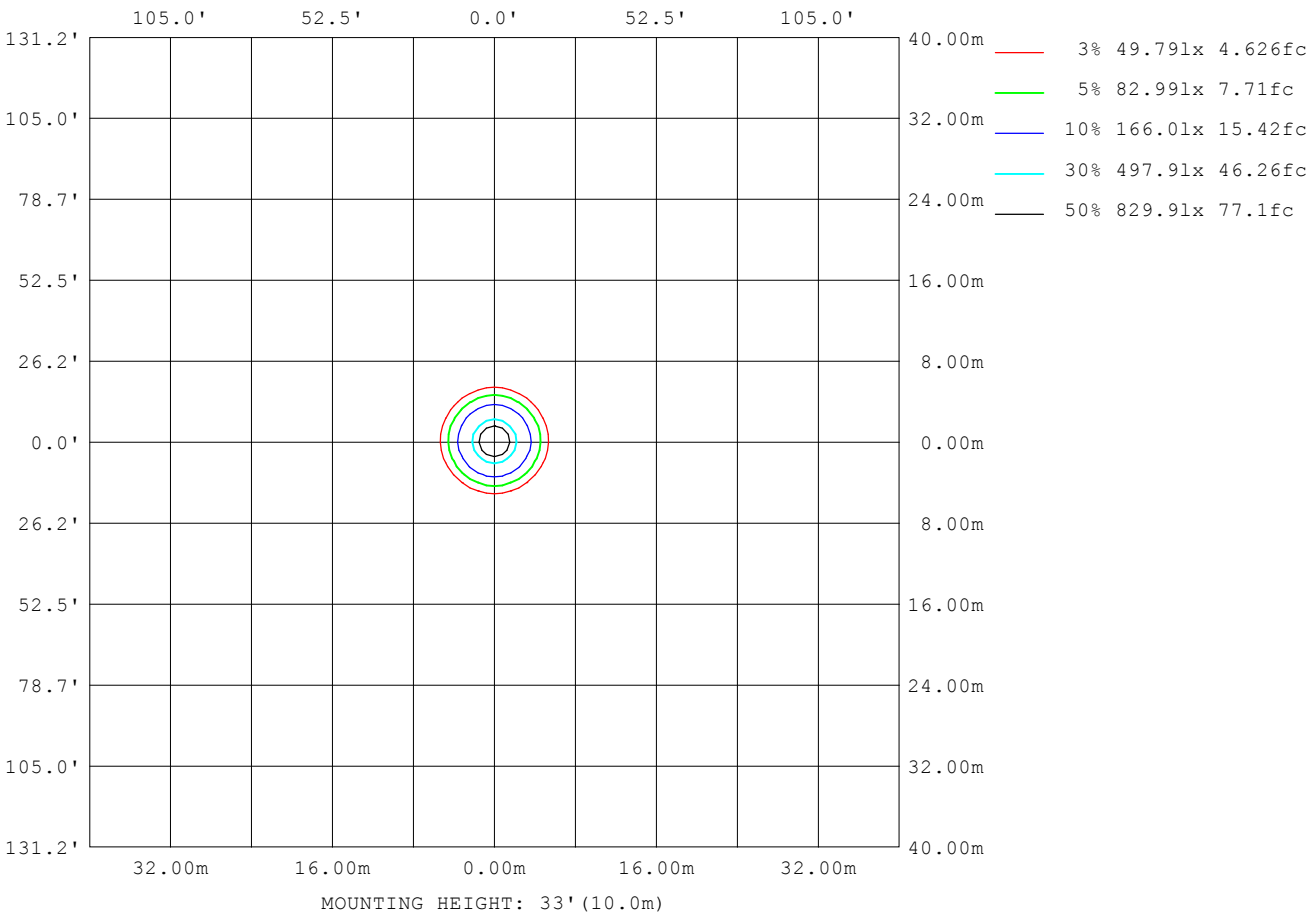
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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C Interval: 15.0DEG
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γ Range: 0 - 90DEG
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EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

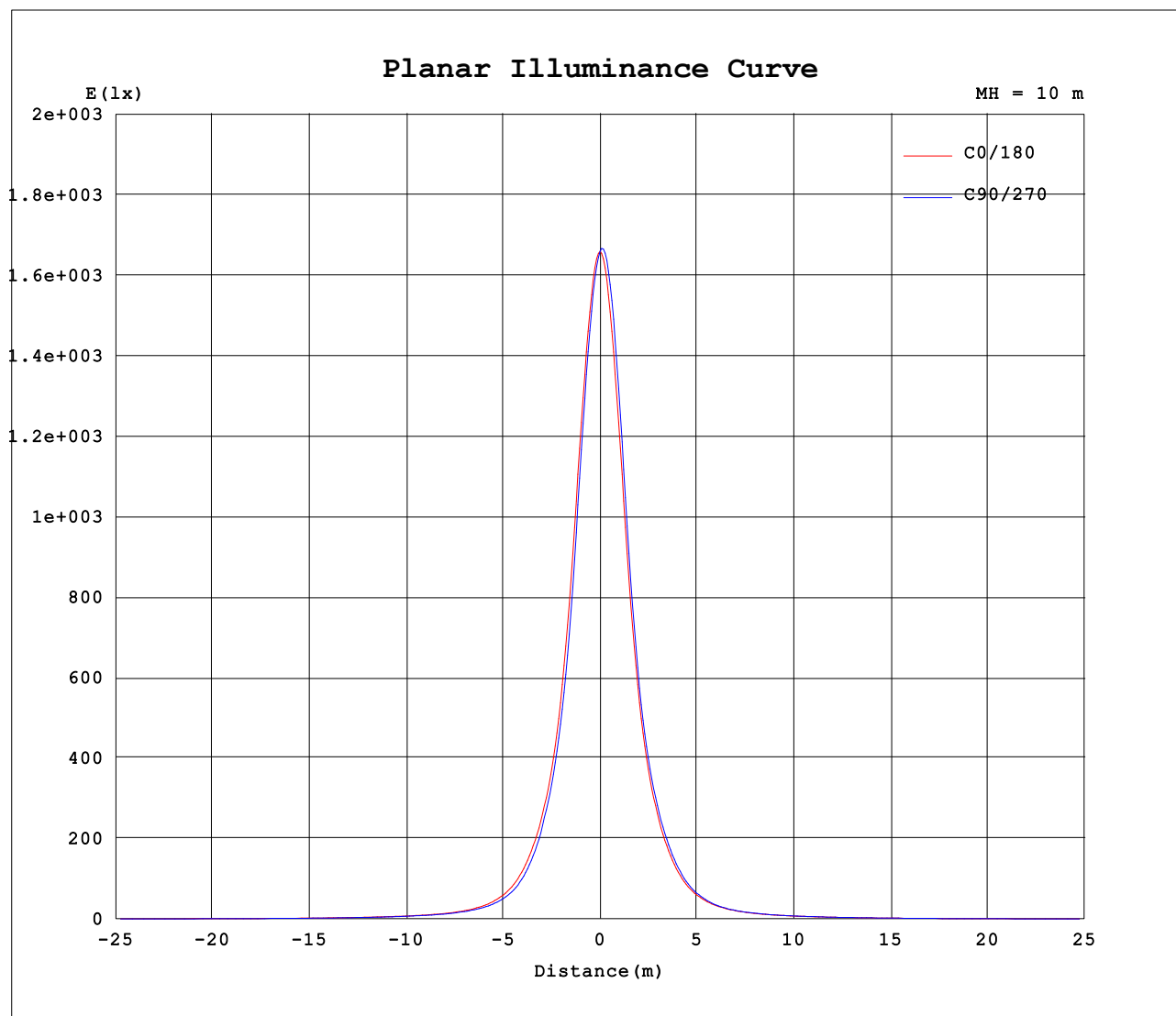
ISOLUX DIAGRAM



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
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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: