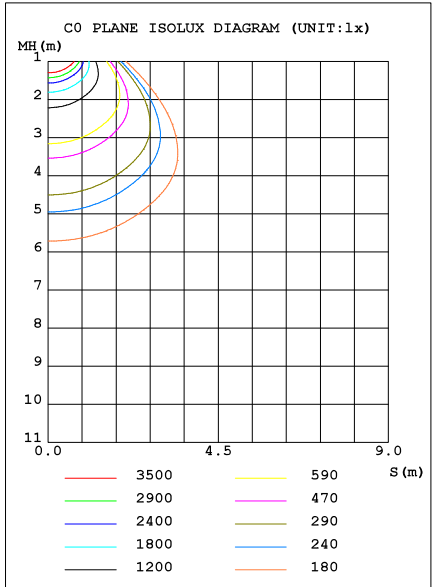
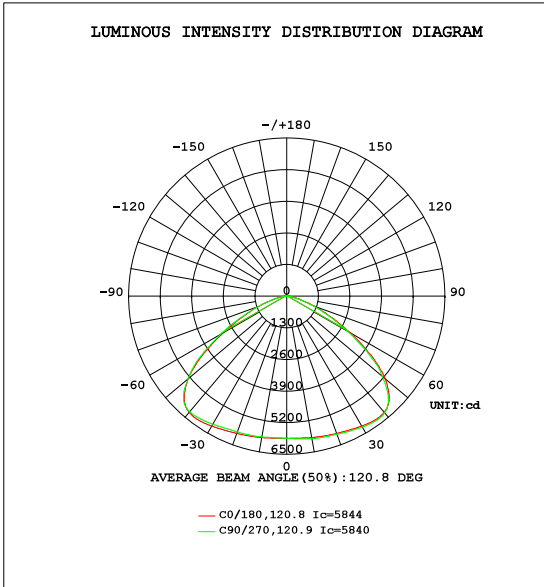


EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:230.0V I:0.450A P:100.9W PF:0.975 Freq:49.99Hz		
UTHDi:0.00% ITHDi:0.00% KDisp:0 Lamp Flux:20086.2x1 lm		
NAME:	HB80-120W (100W)	TYPE:
SPEC.:		WEIGHT:
MFR.:		DIM.:
		SUR.:
		Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 199.01 lm/W			
MODEL	/	Imax (cd)	6303	S/MH (C0/180)	1.63
NOMINAL POWER (W)	/	LOR (%)	100.0	S/MH (C90/270)	1.62
RATED VOLTAGE (V)	/	TOTAL FLUX (lm)	20086	$\eta$ UP, DN (C0-180)	0.0, 49.7
NOMINAL FLUX (lm)	20086.2	CIE CLASS	DIRECT	$\eta$ UP, DN (C180-360)	0.0, 50.3
LAMPS INSIDE	1	$\eta$ up (%)	0.0	CIBSE SHR NOM	1.75
TEST VOLTAGE (V)	230	$\eta$ down (%)	100.0	CIBSE SHR MAX	1.75



C Range: 0 - 360DEG  
C Interval: 22.5DEG  
Test Speed: HIGH  
Temperature: 25.3°C  
Operators: WJH  
Test Date: 2023-08-05

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 0.5DEG  
Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.00.465  
Humidity: 65.0%  
Test Distance: 9.350m [K=1.0000]  
Remarks:

EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

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**ZONAL FLUX DIAGRAM**

ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum, lamp
10	5901	5935	5952	5935	5901	5882	5873	5882	0- 10	561.1	561.1	2.79, 2.79
20	6006	6031	6036	6031	6006	5965	5936	5965	10- 20	1608	2249	11.2, 11.2
30	6166	6200	6212	6200	6166	6114	6075	6114	20- 30	2811	5060	25.2, 25.2
40	6236	6251	6263	6251	6236	6234	6201	6234	30- 40	3913	8973	44.7, 44.7
50	5281	5186	5139	5186	5281	5345	5283	5345	40- 50	4545	13518	67.3, 67.3
60	3007	2926	2904	2926	3007	3139	3140	3139	50- 60	3740	17258	85.9, 85.9
70	1200	1146	1126	1146	1200	1244	1255	1244	60- 70	2003	19262	95.9, 95.9
80	307.5	264.8	257.9	264.8	307.5	308.9	299.8	308.9	70- 80	701.0	19963	99.4, 99.4
90	38.97	10.38	10.41	10.38	38.97	24.61	9.932	24.61	80- 90	123.5	20086	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): 11243 lm

%lum = 56.0%

%lamp = 56.0%

Conical surface Flux(120deg): 17258 lm

%lum = 85.9%

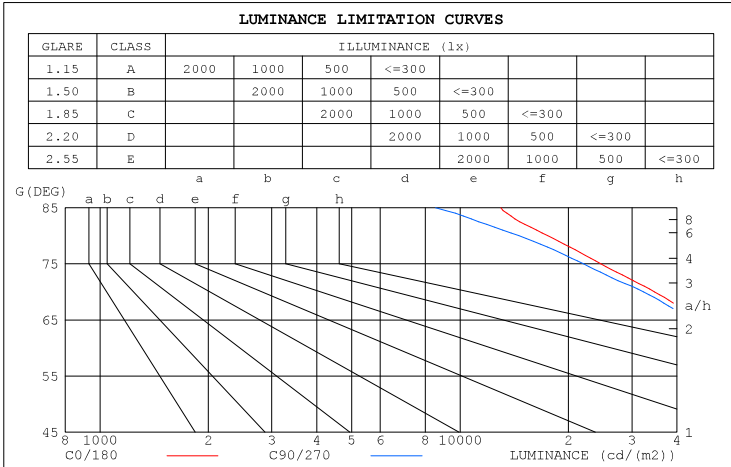
%lamp = 85.9%

C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature: 25.3°C  
 Operators: WJH  
 Test Date: 2023-08-05

γ Range: 0 - 90DEG  
 γ Interval: 0.5DEG  
 Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.00.465  
 Humidity: 65.0%  
 Test Distance: 9.350m [K=1.0000]  
 Remarks:

EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

LUMINANCE LIMITATION CURVES



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	12959	8543
80	17503	14564
75	24578	21985
70	34683	32297
65	46260	43951
60	59451	56955
55	72759	69755
50	81202	78412
45	83253	81945

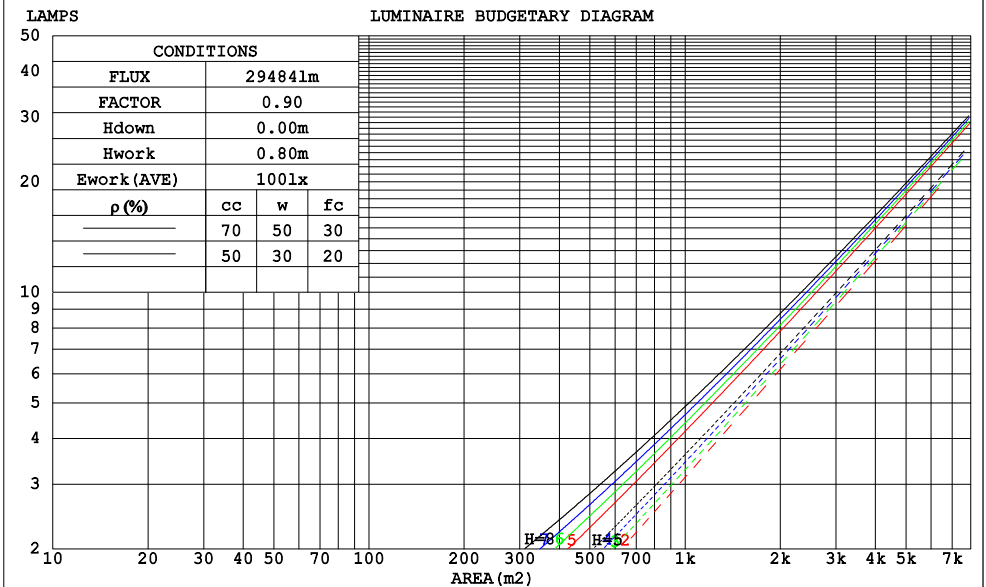
C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature: 25.3°C  
 Operators: WJH  
 Test Date: 2023-08-05

γ Range: 0 - 90DEG  
 γ Interval: 0.5DEG  
 Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.00.465  
 Humidity: 65.0%  
 Test Distance: 9.350m [K=1.0000]  
 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	1.05	1.02	.98	1.03	.00	.96	.99	.96	.93	.95	.93	.91	.92	.90	.88	.86
2.0	.93	.86	.81	.91	.85	.80	.87	.82	.78	.84	.80	.76	.81	.77	.74	.72
3.0	.81	.74	.67	.80	.73	.67	.77	.71	.66	.74	.69	.64	.72	.67	.63	.61
4.0	.72	.63	.57	.71	.63	.56	.68	.61	.56	.66	.60	.55	.64	.58	.54	.52
5.0	.64	.55	.49	.63	.55	.48	.61	.53	.48	.59	.52	.47	.57	.51	.47	.45
6.0	.57	.49	.42	.56	.48	.42	.55	.47	.42	.53	.46	.41	.51	.45	.41	.39
7.0	.52	.43	.37	.51	.43	.37	.49	.42	.36	.48	.41	.36	.47	.41	.36	.34
8.0	.47	.38	.33	.46	.38	.33	.45	.38	.32	.44	.37	.32	.43	.36	.32	.30
9.0	.43	.35	.29	.42	.34	.29	.41	.34	.29	.40	.33	.29	.39	.33	.29	.27
10.0	.39	.31	.26	.39	.31	.26	.38	.31	.26	.37	.30	.26	.36	.30	.26	.24



C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature: 25.3°C  
 Operators: WJH  
 Test Date: 2023-08-05

γ Range: 0 - 90DEG  
 γ Interval: 0.5DEG  
 Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.00.465  
 Humidity: 65.0%  
 Test Distance: 9.350m [K=1.0000]  
 Remarks:

EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

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**WEC AND CCEC**

<b>ρcc</b>	80%			70%			50%			30%			10%			0
<b>ρw</b>	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
<b>ρfc</b>	20%			20%			20%			20%			20%			0
<b>RCR</b>	RCR:Room Cavity Ratio						Wall Exitance Coefficients(WEC)									
0.0																
1.0	.280	.159	.050	.273	.155	.049	.259	.149	.048	.247	.143	.046	.236	.137	.044	
2.0	.272	.149	.046	.266	.146	.045	.254	.141	.044	.244	.137	.043	.234	.132	.042	
3.0	.257	.137	.041	.252	.135	.041	.242	.131	.040	.232	.127	.039	.223	.124	.038	
4.0	.241	.125	.037	.236	.124	.037	.227	.120	.036	.219	.117	.035	.211	.115	.035	
5.0	.225	.115	.033	.221	.113	.033	.213	.111	.033	.205	.108	.032	.198	.106	.032	
6.0	.211	.106	.030	.207	.104	.030	.200	.102	.030	.193	.100	.029	.187	.098	.029	
7.0	.197	.097	.028	.194	.097	.028	.187	.095	.027	.181	.093	.027	.176	.091	.027	
8.0	.185	.090	.025	.182	.090	.025	.176	.088	.025	.171	.086	.025	.166	.085	.025	
9.0	.174	.084	.023	.171	.083	.023	.166	.082	.023	.161	.081	.023	.156	.079	.023	
10.0	.164	.079	.022	.161	.078	.022	.157	.077	.022	.152	.076	.022	.148	.075	.021	

<b>ρcc</b>	80%			70%			50%			30%			10%			0
<b>ρw</b>	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
<b>ρfc</b>	20%			20%			20%			20%			20%			0
<b>RCR</b>	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	.178	.156	.137	.152	.134	.118	.104	.092	.081	.060	.053	.047	.019	.017	.015	
2.0	.170	.132	.100	.145	.114	.087	.100	.079	.061	.057	.046	.035	.018	.015	.012	
3.0	.162	.114	.076	.139	.099	.066	.095	.068	.046	.055	.040	.027	.018	.013	.009	
4.0	.155	.101	.060	.133	.087	.052	.091	.061	.036	.053	.036	.022	.017	.012	.007	
5.0	.148	.090	.048	.127	.078	.042	.088	.055	.029	.051	.032	.017	.016	.010	.006	
6.0	.141	.082	.040	.121	.071	.034	.084	.050	.024	.049	.029	.014	.016	.010	.005	
7.0	.135	.075	.033	.116	.065	.029	.080	.046	.021	.047	.027	.012	.015	.009	.004	
8.0	.129	.069	.029	.111	.060	.025	.077	.042	.018	.045	.025	.011	.014	.008	.004	
9.0	.123	.065	.025	.106	.056	.022	.073	.039	.016	.043	.023	.009	.014	.008	.003	
10.0	.117	.060	.022	.101	.052	.020	.070	.037	.014	.041	.022	.008	.013	.007	.003	

C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature:25.3℃  
 Operators:WJH  
 Test Date:2023-08-05

γ Range: 0 - 90DEG  
 γ Interval: 0.5DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.00.465  
 Humidity:65.0%  
 Test Distance:9.350m [K=1.0000]  
 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	27.8	29.3	28.1	29.5	29.7	27.7	29.2	27.9	29.4	29.6	
3H	28.4	29.8	28.7	30.0	30.3	28.2	29.6	28.5	29.8	30.1	
4H	28.5	29.8	28.8	30.1	30.3	28.3	29.6	28.6	29.9	30.1	
6H	28.5	29.8	28.9	30.0	30.3	28.3	29.5	28.6	29.8	30.1	
8H	28.5	29.7	28.9	30.0	30.3	28.3	29.4	28.6	29.7	30.0	
12H	28.5	29.6	28.8	29.9	30.2	28.2	29.4	28.6	29.6	30.0	
4H	2H	28.1	29.4	28.4	29.7	29.9	28.0	29.3	28.3	29.5	29.8
3H	28.8	29.9	29.1	30.2	30.5	28.6	29.8	29.0	30.0	30.3	
4H	29.0	30.0	29.3	30.3	30.6	28.8	29.8	29.1	30.1	30.4	
6H	29.0	29.9	29.4	30.3	30.6	28.8	29.7	29.2	30.1	30.4	
8H	29.0	29.9	29.5	30.2	30.6	28.8	29.6	29.2	30.0	30.4	
12H	29.0	29.8	29.5	30.2	30.6	28.8	29.5	29.2	29.9	30.3	
8H	4H	29.0	29.8	29.4	30.2	30.5	28.8	29.6	29.2	30.0	30.4
6H	29.1	29.8	29.5	30.2	30.6	28.9	29.6	29.3	30.0	30.4	
8H	29.1	29.7	29.6	30.1	30.6	28.9	29.5	29.3	29.9	30.4	
12H	29.1	29.6	29.6	30.1	30.6	28.9	29.4	29.3	29.8	30.3	
12H	4H	28.9	29.7	29.4	30.1	30.5	28.7	29.5	29.2	29.9	30.3
6H	29.1	29.7	29.5	30.1	30.5	28.8	29.5	29.3	29.9	30.3	
8H	29.1	29.6	29.6	30.1	30.5	28.9	29.4	29.3	29.8	30.3	
Variations with the observer position at spacings(CIE Pub.117):											
S = 1.0H	+ 0.4 / - 0.4					+ 0.4 / - 0.5					
1.5H	+ 0.4 / - 0.9					+ 0.4 / - 0.9					
2.0H	+ 1.0 / - 1.1					+ 1.0 / - 1.2					

CIE Pub.117, 20086 lm Total Lamp Luminous Flux Corrected (8log(F/F0) = 10.4)  
 Area: 0.1018 m2

C Range: 0 - 360DEG	γ Range: 0 - 90DEG
C Interval: 22.5DEG	γ Interval: 0.5DEG
Test Speed: HIGH	Test System:EVERFINE GO-2000A_V1 SYSTEM V2.00.465
Temperature:25.3℃	Humidity:65.0%
Operators:WJH	Test Distance:9.350m [K=1.0000]
Test Date:2023-08-05	Remarks:

**EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT**

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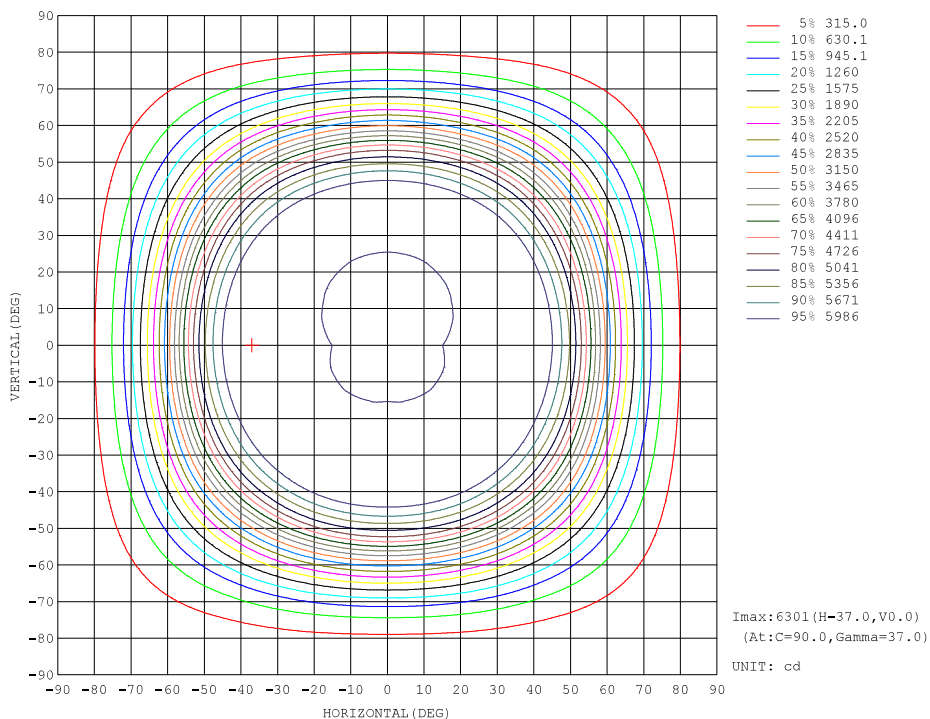
**UTILIZATION FACTORS TABLE**

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
<b>ROOM INDEX</b>	<b>UTILIZATION FACTORS (PERCENT) k(RI) x RCR = 5</b>									
k = 0.60	57	45	38	56	45	38	55	44	37	31
0.80	68	56	49	67	56	48	65	55	48	41
1.00	77	66	59	76	66	59	74	67	58	51
1.25	85	75	68	83	74	67	81	72	67	59
1.50	90	80	74	88	80	73	85	78	72	65
2.00	97	89	83	95	88	82	92	85	81	73
2.50	100	93	88	98	92	87	95	89	85	77
3.00	104	97	92	102	96	91	98	93	89	81
4.00	107	102	98	105	100	96	101	97	94	85
5.00	109	105	101	107	103	100	103	99	97	88
<b>ROOM INDEX</b>	<b>UF(total)</b>									<b>Direct</b>
According to DIN EN 13032-2 2004	Suspended						SHRNOM = 1.25			

C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature: 25.3°C  
 Operators: WJH  
 Test Date: 2023-08-05

γ Range: 0 - 90DEG  
 γ Interval: 0.5DEG  
 Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.00.465  
 Humidity: 65.0%  
 Test Distance: 9.350m [K=1.0000]  
 Remarks:

ISOCANDELA DIAGRAM

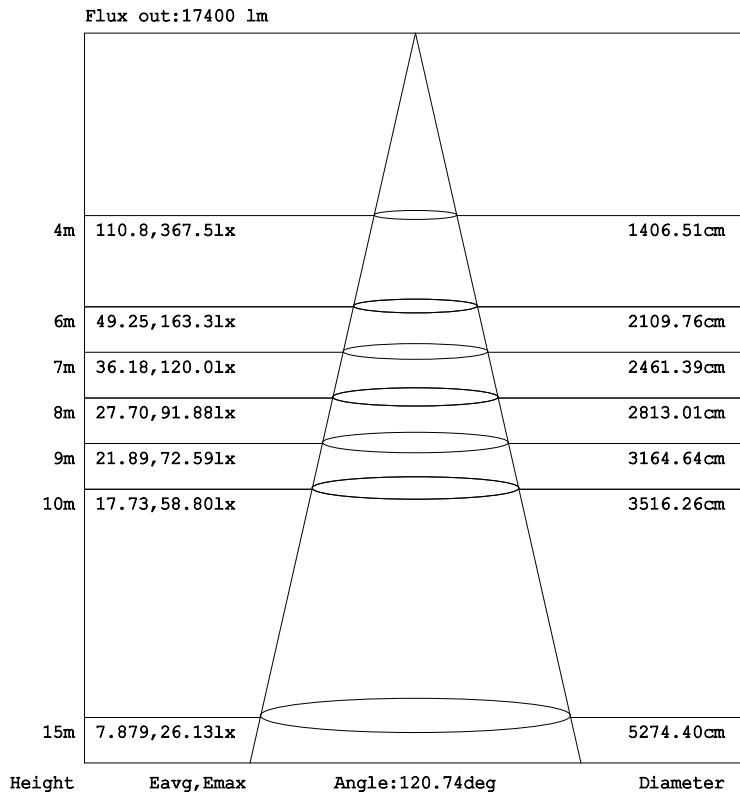


C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature: 25.3°C  
 Operators: WJH  
 Test Date: 2023-08-05

γ Range: 0 - 90DEG  
 γ Interval: 0.5DEG  
 Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.00.465  
 Humidity: 65.0%  
 Test Distance: 9.350m [K=1.0000]  
 Remarks:



AAI Figure

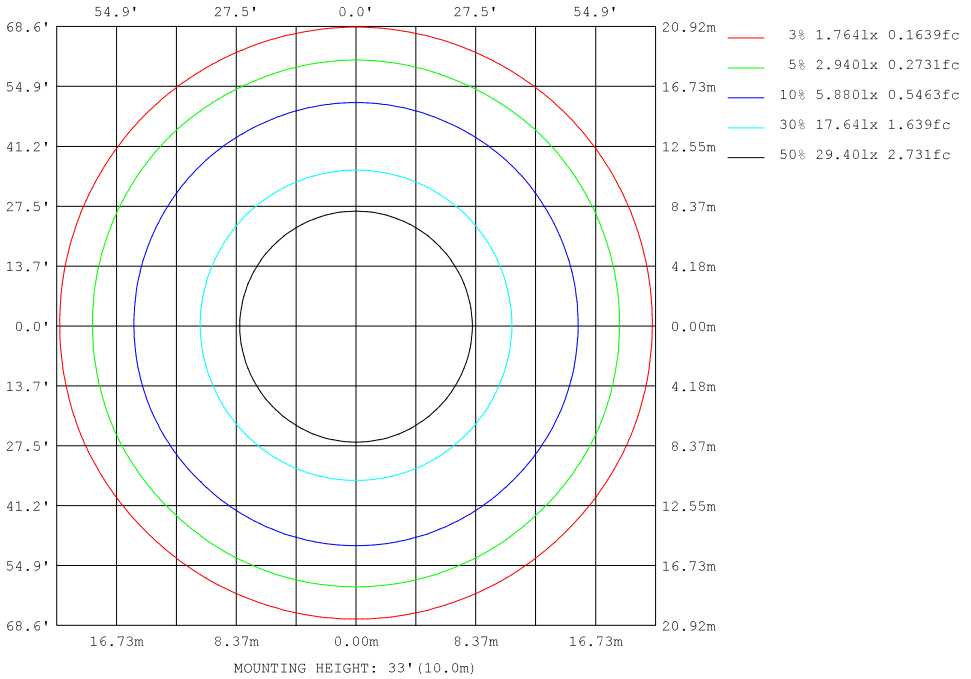


Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature:25.3°C  
 Operators:WJH  
 Test Date:2023-08-05

γ Range: 0 - 90DEG  
 γ Interval: 0.5DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.00.465  
 Humidity:65.0%  
 Test Distance:9.350m [K=1.0000]  
 Remarks:

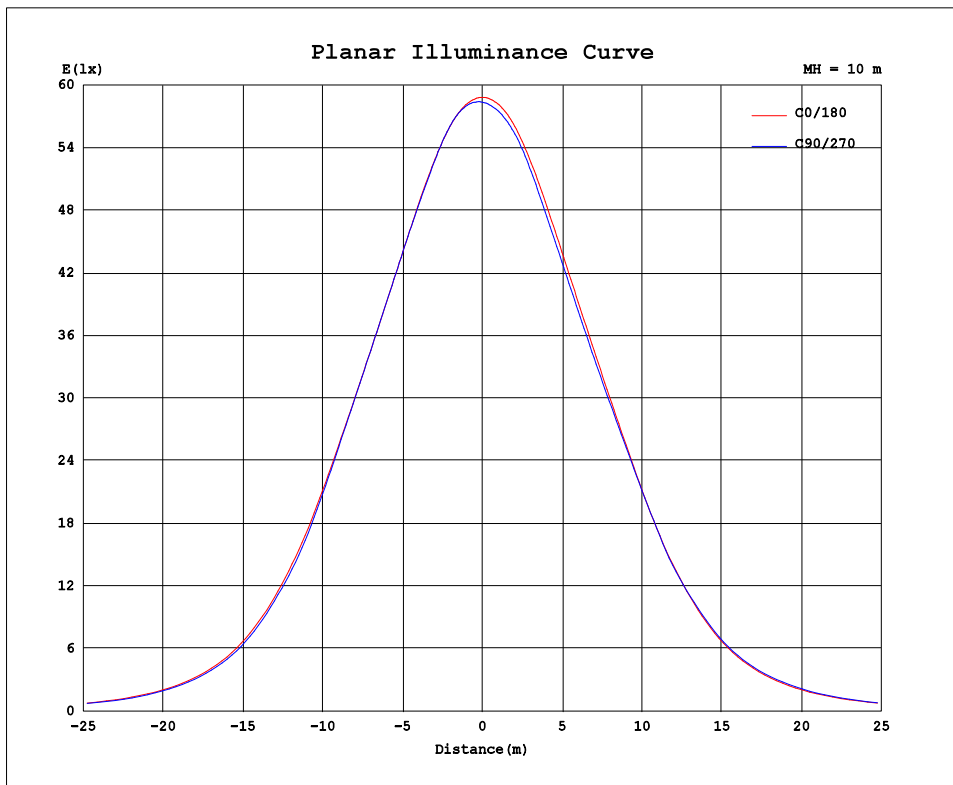
ISOLUX DIAGRAM



C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature: 25.3°C  
 Operators: WJH  
 Test Date: 2023-08-05

γ Range: 0 - 90DEG  
 γ Interval: 0.5DEG  
 Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.00.465  
 Humidity: 65.0%  
 Test Distance: 9.350m [K=1.0000]  
 Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG  
C Interval: 22.5DEG  
Test Speed: HIGH  
Temperature: 25.3°C  
Operators: WJH  
Test Date: 2023-08-05

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 0.5DEG  
Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.00.465  
Humidity: 65.0%  
Test Distance: 9.350m [K=1.0000]  
Remarks: