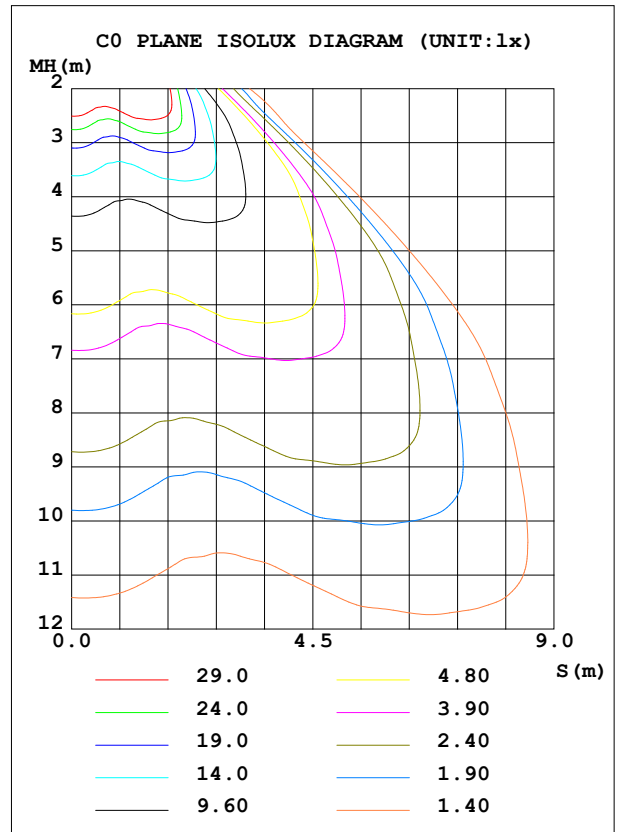
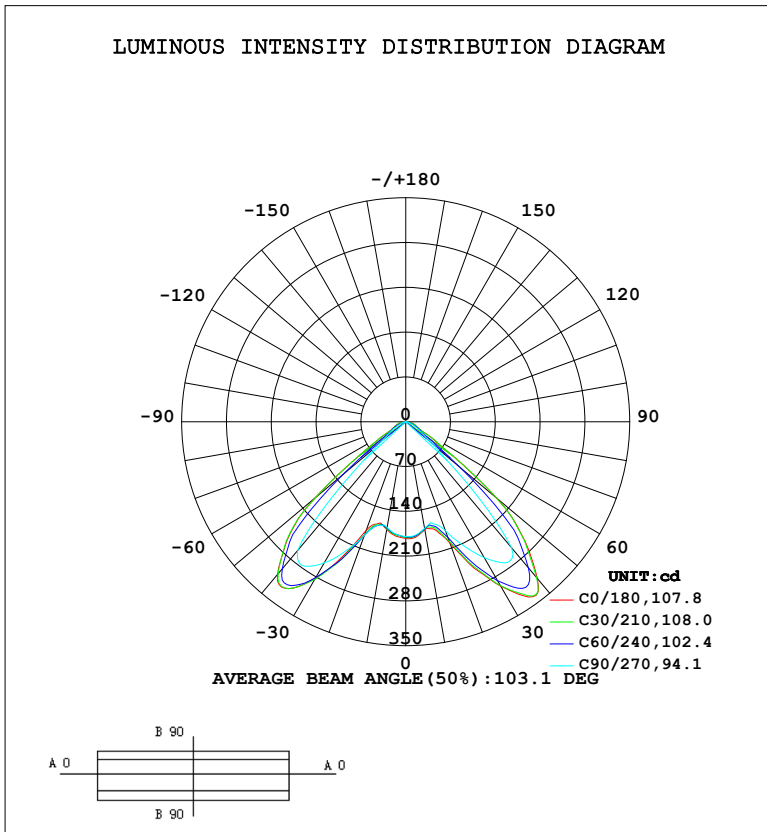


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:220.08V I:0.0609A P:7.3745W PF:0.5503 Freq:50.00Hz Lamp Flux:619.856x1 lm		
NAME: HYO-240R-7W 6000K	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	

DATA OF LAMP		PHOTOMETRIC DATA Eff: 84.05 lm/W			
MODEL		I <sub>max</sub> (cd)	341.4	S/MH (C0/180)	1.71
NOMINAL POWER (W)		LOR (%)	100.0	S/MH (C90/270)	1.44
RATED VOLTAGE (V)	--	TOTAL FLUX (lm)	619.86	η UP, DN (C0-180)	0.0, 49.9
NOMINAL FLUX (lm)	619.856	CIE CLASS	DIRECT	η UP, DN (C180-360)	0.0, 50.1
LAMPS INSIDE	1	η up (%)	0.0	CIBSE SHR NOM	1.00
TEST VOLTAGE (V)	--	η down (%)	100.0	CIBSE SHR MAX	1.00



C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: 10.0deg/s  
 Temperature: 25.3°C  
 Operators: DAMIN  
 Test Date: 2023-08-15

γ Range: 0 - 90DEG  
 γ Interval: 1.0DEG  
 Test System: EVERFINE GO-3000H\_V1 SYSTEM V2.00.463  
 Humidity: 65.0%  
 Test Distance: 9.000m [K=1.0000]  
 Remarks:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

$\gamma$	C0	C45	C90	C135	C180	C225	C270	C315	$\gamma$	$\Phi$ zone	$\Phi$ total	%lum, lamp
10	171.5	170.4	169.2	168.0	171.1	169.3	167.8	167.3	0- 10	16.66	16.66	2.69,2.69
20	201.9	194.0	181.0	176.4	180.2	189.8	188.7	194.1	10- 20	48.73	65.39	10.5,10.5
30	296.6	290.9	245.4	265.5	281.7	285.1	254.2	282.6	20- 30	108.8	174.2	28.1,28.1
40	319.8	316.8	257.1	297.3	311.8	307.7	262.6	299.9	30- 40	188.3	362.5	58.5,58.5
50	184.1	186.2	58.22	166.3	184.1	177.9	58.12	172.1	40- 50	171.6	534.1	86.2,86.2
60	30.30	27.66	22.28	25.78	27.81	30.20	21.47	27.21	50- 60	58.19	592.3	95.5,95.5
70	15.81	13.66	8.684	12.61	15.99	13.25	7.954	12.13	60- 70	17.95	610.2	98.4,98.4
80	8.791	2.769	0.6471	2.176	8.379	2.656	0.6444	2.021	70- 80	8.533	618.7	99.8,99.8
90	0.1253	0.0915	0.0617	0.0867	0.1426	0.0973	0.0617	0.0906	80- 90	1.120	619.9	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): 460.06 lm

%lum = 74.2%

%lamp = 74.2%

Conical surface Flux(120deg): 592.26 lm

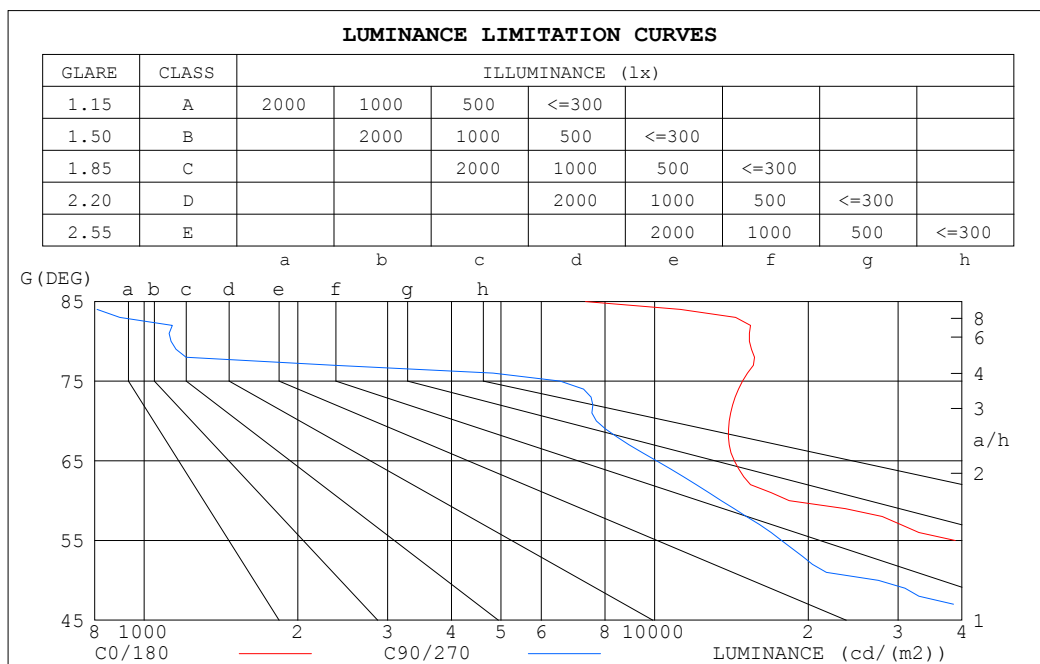
%lum = 95.5%

%lamp = 95.5%

C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: 10.0deg/s  
 Temperature:25.3°C  
 Operators:DAMIN  
 Test Date:2023-08-15

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 1.0DEG  
 Test System:EVERFINE GO-3000H\_V1 SYSTEM V2.00.463  
 Humidity:65.0%  
 Test Distance:9.000m [K=1.0000]  
 Remarks:

LUMINANCE LIMITATION CURVES

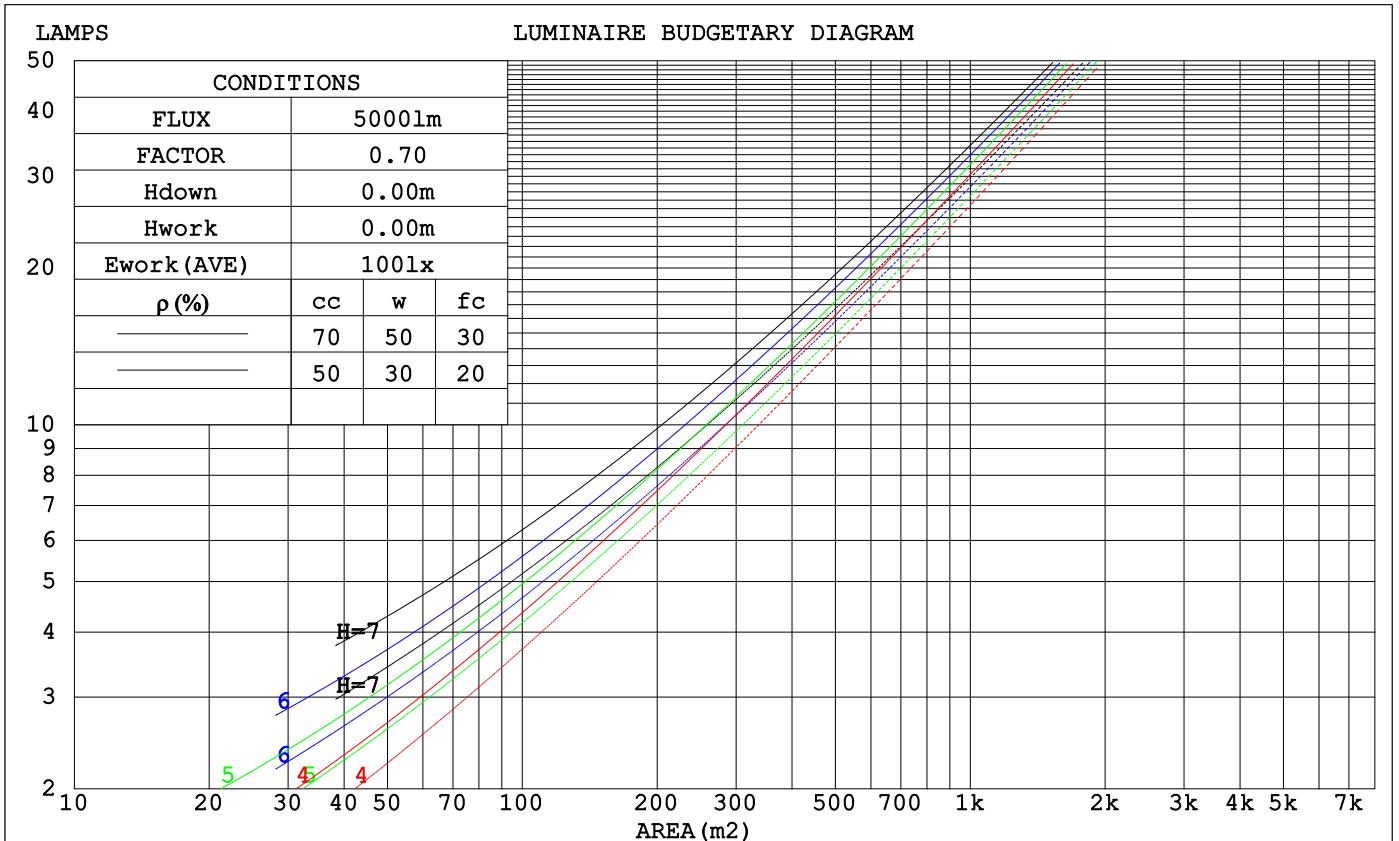


C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: 10.0deg/s  
 Temperature: 25.3°C  
 Operators: DAMIN  
 Test Date: 2023-08-15

γ Range: 0 - 90DEG  
 γ Interval: 1.0DEG  
 Test System: EVERFINE GO-3000H\_V1 SYSTEM V2.00.463  
 Humidity: 65.0%  
 Test Distance: 9.000m [K=1.0000]  
 Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

$\rho_{cc}$	80%			70%			50%			30%			10%			0
$\rho_w$	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
$\rho_{fc}$	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	1.08	1.04	1.01	1.05	1.02	.00	1.01	.99	.96	.97	.95	.94	.94	.92	.91	.89
2.0	.96	.91	.86	.94	.89	.85	.91	.87	.83	.88	.84	.81	.85	.82	.80	.78
3.0	.86	.79	.74	.85	.78	.73	.82	.76	.72	.79	.75	.71	.77	.73	.70	.68
4.0	.77	.70	.64	.76	.69	.63	.74	.68	.63	.71	.66	.62	.69	.65	.61	.59
5.0	.70	.62	.56	.68	.61	.55	.66	.60	.55	.65	.59	.54	.63	.58	.54	.52
6.0	.63	.55	.49	.62	.54	.49	.60	.53	.48	.59	.52	.48	.57	.52	.47	.45
7.0	.57	.49	.43	.56	.48	.43	.55	.48	.43	.53	.47	.42	.52	.46	.42	.40
8.0	.52	.44	.38	.51	.43	.38	.50	.43	.38	.48	.42	.38	.47	.42	.37	.36
9.0	.47	.39	.34	.47	.39	.34	.45	.39	.34	.44	.38	.34	.43	.38	.33	.32
10.0	.43	.36	.30	.43	.35	.30	.42	.35	.30	.41	.35	.30	.40	.34	.30	.28



C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: 10.0deg/s  
 Temperature:25.3°C  
 Operators:DAMIN  
 Test Date:2023-08-15

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 1.0DEG  
 Test System:EVERFINE GO-3000H\_V1 SYSTEM V2.00.463  
 Humidity:65.0%  
 Test Distance:9.000m [K=1.0000]  
 Remarks:

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	.240	.136	.043	.233	.133	.042	.220	.126	.040	.208	.120	.039	.197	.114	.037	
2.0	.235	.129	.040	.229	.126	.039	.218	.121	.038	.208	.117	.037	.198	.112	.035	
3.0	.226	.120	.036	.221	.118	.036	.211	.114	.035	.202	.111	.034	.193	.107	.033	
4.0	.215	.112	.033	.210	.110	.033	.202	.107	.032	.194	.104	.031	.186	.101	.031	
5.0	.204	.104	.030	.200	.103	.030	.192	.100	.029	.185	.098	.029	.178	.095	.029	
6.0	.193	.097	.028	.190	.096	.028	.183	.094	.027	.176	.092	.027	.170	.090	.027	
7.0	.183	.091	.026	.180	.090	.026	.174	.088	.025	.168	.086	.025	.163	.084	.025	
8.0	.174	.085	.024	.171	.084	.024	.165	.083	.024	.160	.081	.023	.155	.080	.023	
9.0	.165	.080	.022	.162	.079	.022	.157	.078	.022	.152	.076	.022	.148	.075	.022	
10.0	.157	.075	.021	.154	.074	.021	.150	.073	.021	.145	.072	.021	.141	.071	.020	

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	.175	.157	.140	.150	.135	.120	.103	.093	.083	.059	.054	.048	.019	.017	.016	
2.0	.165	.132	.105	.141	.114	.091	.097	.079	.063	.056	.046	.037	.018	.015	.012	
3.0	.156	.114	.081	.134	.098	.070	.092	.068	.049	.053	.040	.029	.017	.013	.009	
4.0	.148	.100	.063	.127	.087	.055	.088	.060	.039	.051	.035	.023	.016	.012	.008	
5.0	.142	.090	.051	.122	.077	.044	.084	.054	.031	.049	.032	.019	.016	.010	.006	
6.0	.135	.081	.042	.116	.070	.037	.080	.049	.026	.047	.029	.015	.015	.009	.005	
7.0	.130	.074	.035	.111	.064	.031	.077	.045	.022	.045	.027	.013	.014	.009	.004	
8.0	.124	.068	.030	.107	.059	.026	.074	.042	.019	.043	.025	.011	.014	.008	.004	
9.0	.119	.064	.026	.102	.055	.023	.071	.039	.016	.041	.023	.010	.013	.008	.003	
10.0	.114	.059	.023	.098	.052	.020	.068	.036	.014	.040	.021	.009	.013	.007	.003	

C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: 10.0deg/s  
 Temperature:25.3°C  
 Operators:DAMIN  
 Test Date:2023-08-15

γ Range: 0 - 90DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-3000H\_V1 SYSTEM V2.00.463  
 Humidity:65.0%  
 Test Distance:9.000m [K=1.0000]  
 Remarks:

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	27.3	28.6	27.5	28.8	29.0	25.2	26.5	25.4	26.7	26.9
3H	27.2	28.4	27.5	28.7	28.9	25.1	26.3	25.3	26.5	26.7
4H	27.2	28.4	27.5	28.6	28.8	25.0	26.2	25.3	26.4	26.7
6H	27.2	28.3	27.5	28.6	28.8	24.9	26.0	25.2	26.3	26.5
8H	27.2	28.3	27.5	28.5	28.8	24.9	25.9	25.2	26.2	26.5
12H	27.2	28.2	27.5	28.5	28.8	24.8	25.8	25.2	26.1	26.4
4H 2H	27.0	28.2	27.3	28.4	28.7	25.1	26.2	25.4	26.5	26.7
3H	27.0	28.0	27.4	28.3	28.6	25.0	26.0	25.4	26.3	26.6
4H	27.1	28.0	27.5	28.3	28.6	25.0	25.9	25.4	26.2	26.5
6H	27.2	28.0	27.6	28.3	28.7	24.9	25.7	25.3	26.0	26.4
8H	27.2	28.0	27.6	28.3	28.7	24.9	25.6	25.3	26.0	26.3
12H	27.2	27.9	27.6	28.3	28.7	24.8	25.5	25.3	25.9	26.3
8H 4H	27.0	27.7	27.4	28.1	28.5	24.9	25.7	25.4	26.0	26.4
6H	27.1	27.7	27.6	28.1	28.5	24.9	25.5	25.3	25.9	26.3
8H	27.2	27.7	27.6	28.1	28.6	24.8	25.3	25.3	25.8	26.2
12H	27.2	27.6	27.6	28.1	28.5	24.8	25.2	25.3	25.7	26.1
12H 4H	27.0	27.6	27.4	28.0	28.4	24.9	25.6	25.3	26.0	26.4
6H	27.1	27.6	27.5	28.0	28.5	24.8	25.4	25.3	25.8	26.2
8H	27.1	27.6	27.6	28.0	28.5	24.8	25.2	25.3	25.7	26.2

Variations with the observer position at spacings(CIE Pub.117):

S = 1.0H	+ 1.8 / - 3.2	+ 2.6 / - 5.7
1.5H	+ 1.2 / - 3.5	+ 2.4 / - 5.7
2.0H	+ 4.1 / - 5.1	+ 4.1 / - 3.9

CIE Pub.117, 619.9 lm Total Lamp Luminous Flux Corrected (8log(F/F0) = -1.7)  
 Area: 0.0033 m2

C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: 10.0deg/s  
 Temperature:25.3°C  
 Operators:DAMIN  
 Test Date:2023-08-15

γ Range: 0 - 90DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-3000H\_V1 SYSTEM V2.00.463  
 Humidity:65.0%  
 Test Distance:9.000m [K=1.0000]  
 Remarks:

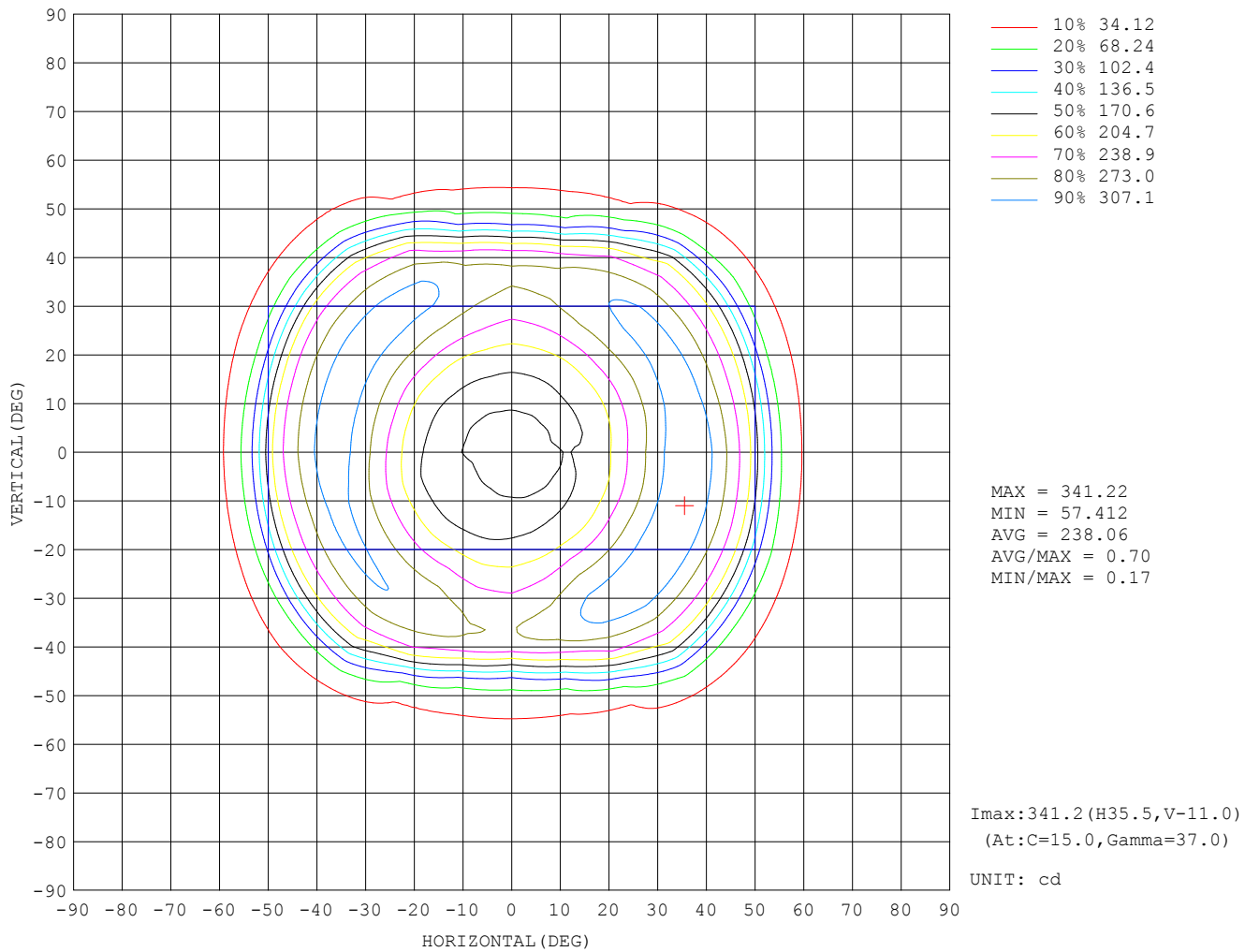
**UTILIZATION FACTORS TABLE**

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	65	55	49	64	55	48	63	54	48	43
0.80	76	66	60	75	66	60	73	65	59	53
1.00	85	76	70	84	75	69	82	76	69	63
1.25	91	83	78	90	83	77	88	81	76	70
1.50	96	88	83	94	87	82	92	86	81	75
2.00	102	95	90	100	94	89	97	92	88	81
2.50	104	98	94	102	97	93	99	95	91	84
3.00	107	102	98	105	100	96	101	97	94	87
4.00	110	105	102	107	104	100	103	100	98	90
5.00	111	108	104	109	106	103	105	102	100	91
ROOM INDEX	UF (total)									Direct
According to DIN EN 13032-2 2004			Suspended				SHRNOM = 1.25			

C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: 10.0deg/s  
 Temperature: 25.3°C  
 Operators: DAMIN  
 Test Date: 2023-08-15

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 1.0DEG  
 Test System: EVERFINE GO-3000H\_V1 SYSTEM V2.00.463  
 Humidity: 65.0%  
 Test Distance: 9.000m [K=1.0000]  
 Remarks:

ISOCANDELA DIAGRAM

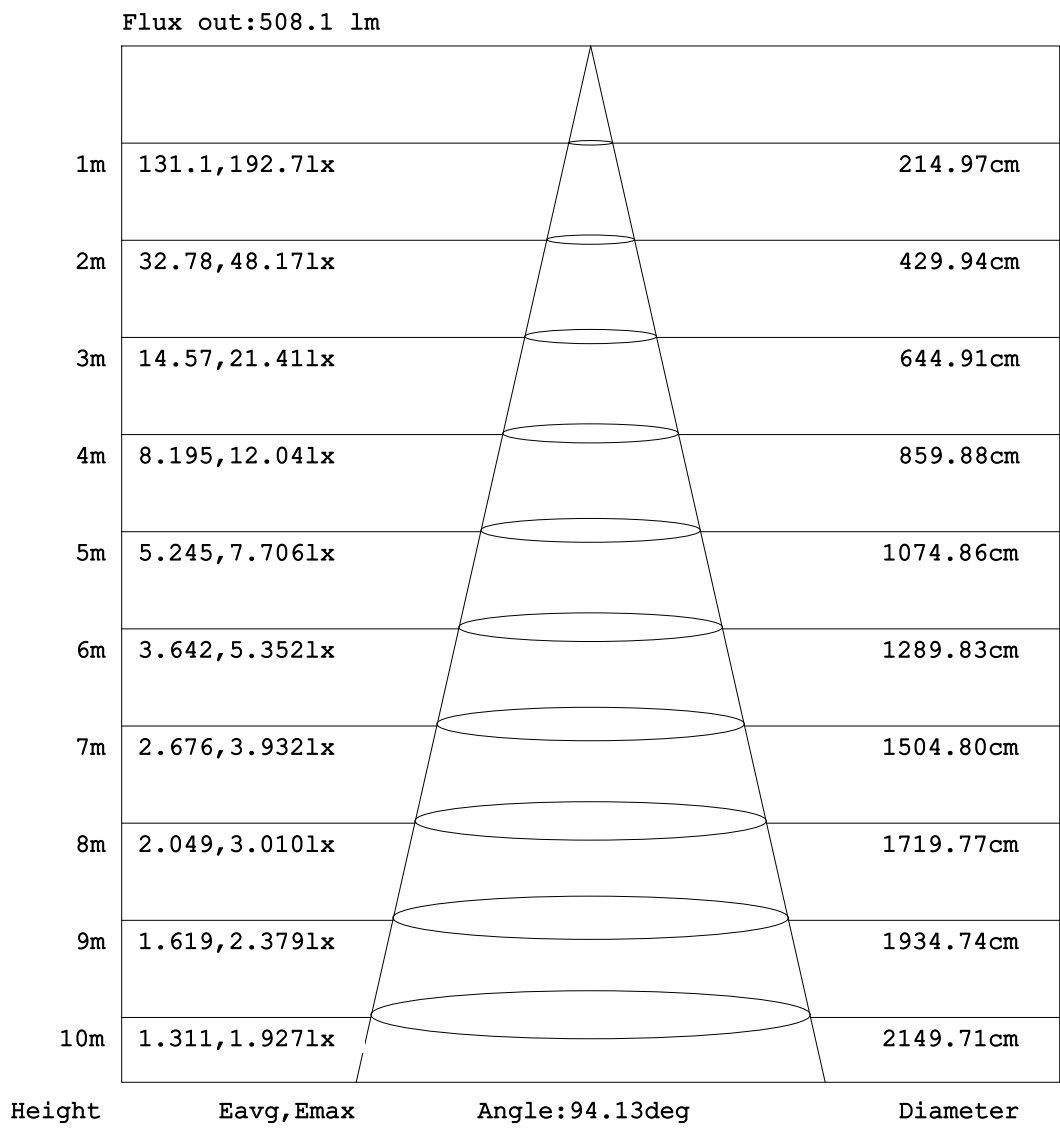


C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: 10.0deg/s  
 Temperature: 25.3°C  
 Operators: DAMIN  
 Test Date: 2023-08-15

γ Range: 0 - 90DEG  
 γ Interval: 1.0DEG  
 Test System: EVERFINE GO-3000H\_V1 SYSTEM V2.00.463  
 Humidity: 65.0%  
 Test Distance: 9.000m [K=1.0000]  
 Remarks:



**AAI Figure**

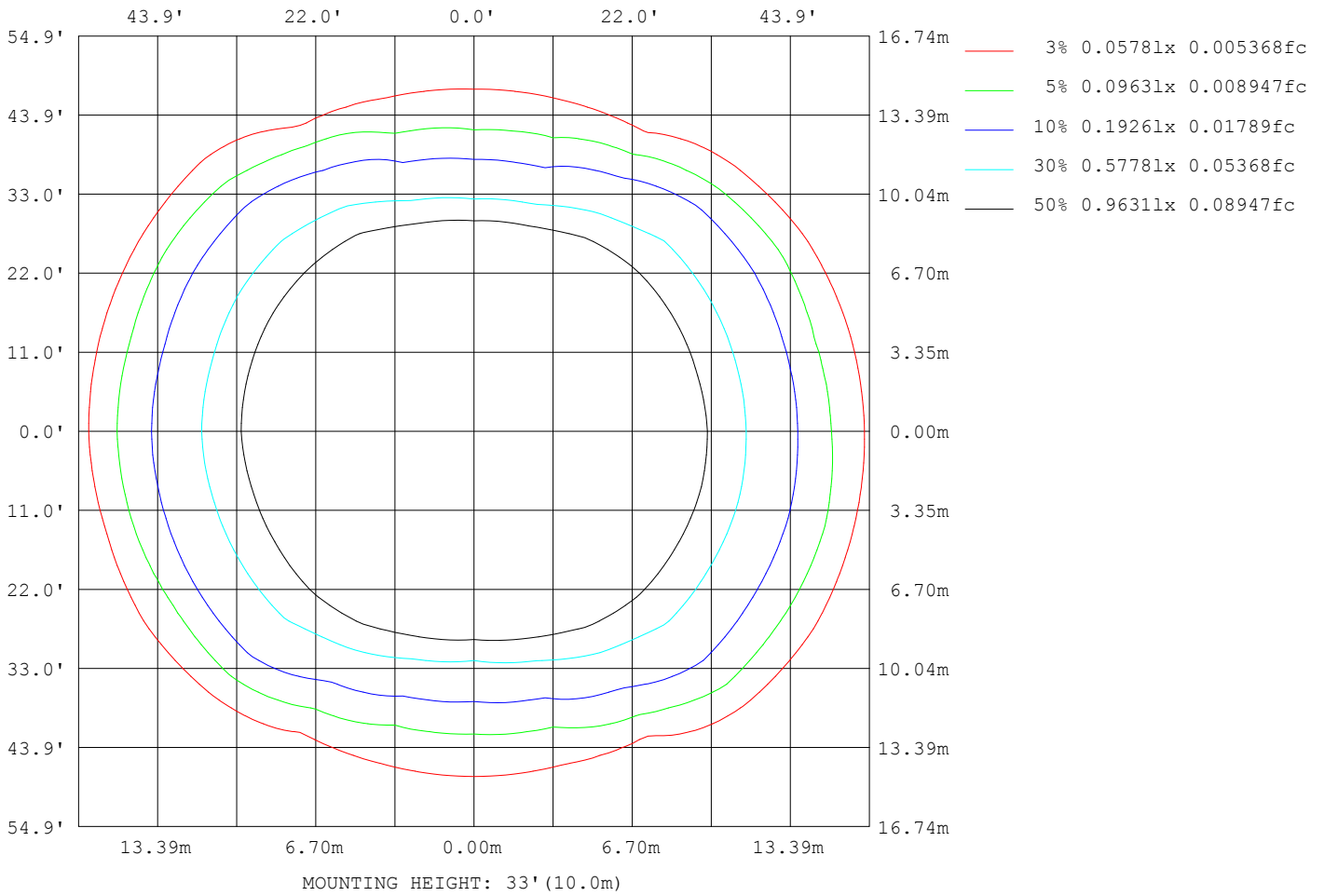


**Note:**The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: 10.0deg/s  
 Temperature:25.3°C  
 Operators:DAMIN  
 Test Date:2023-08-15

γ Range: 0 - 90DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-3000H\_V1 SYSTEM V2.00.463  
 Humidity:65.0%  
 Test Distance:9.000m [K=1.0000]  
 Remarks:

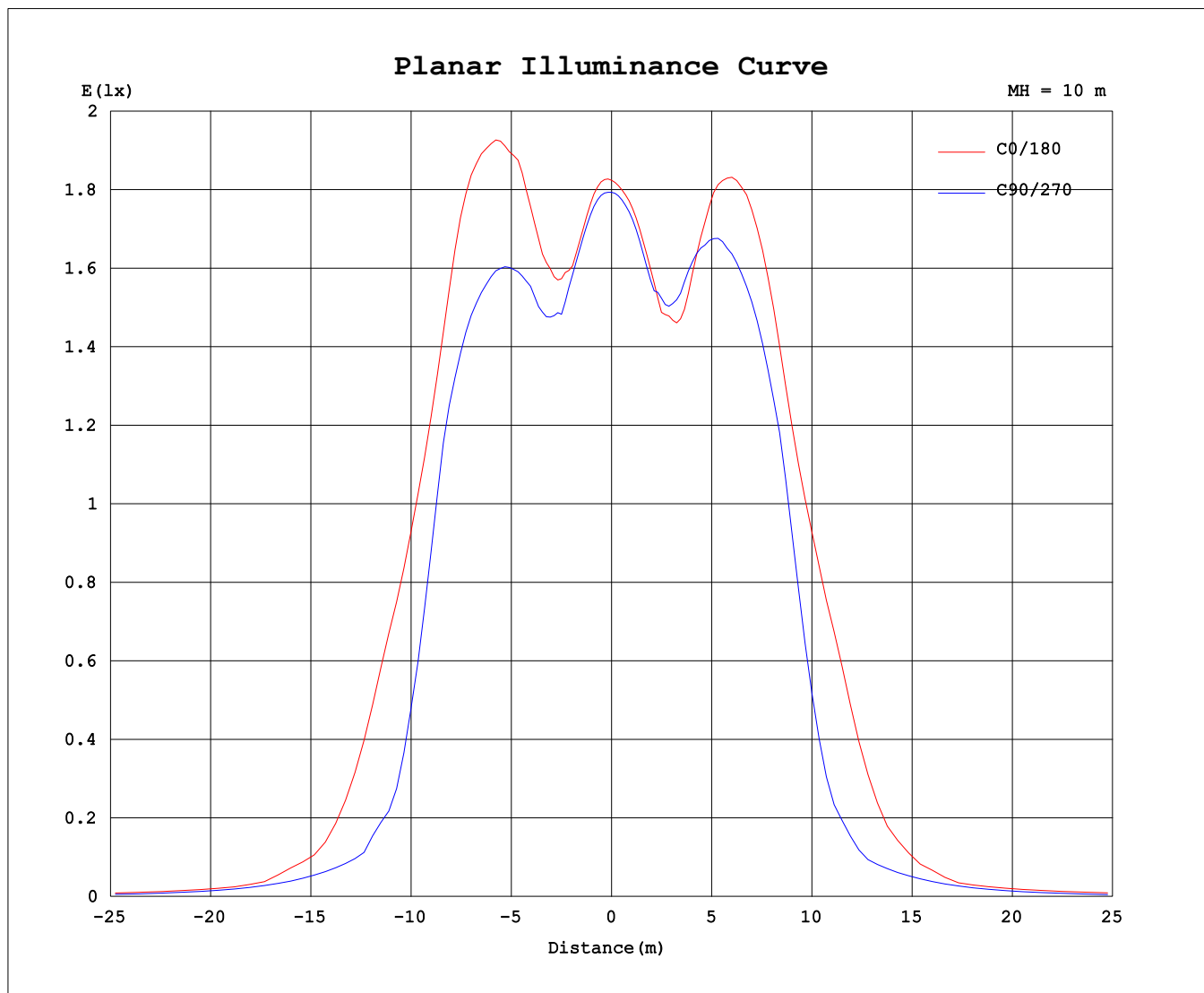
ISOLUX DIAGRAM



C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: 10.0deg/s  
 Temperature: 25.3°C  
 Operators: DAMIN  
 Test Date: 2023-08-15

γ Range: 0 - 90DEG  
 γ Interval: 1.0DEG  
 Test System: EVERFINE GO-3000H\_V1 SYSTEM V2.00.463  
 Humidity: 65.0%  
 Test Distance: 9.000m [K=1.0000]  
 Remarks:

### Planar Illuminance Curve



C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: 10.0deg/s  
Temperature:25.3°C  
Operators:DAMIN  
Test Date:2023-08-15

γ Range: 0 - 90DEG  
γ Interval: 1.0DEG  
Test System:EVERFINE GO-3000H\_V1 SYSTEM V2.00.463  
Humidity:65.0%  
Test Distance:9.000m [K=1.0000]  
Remarks:



