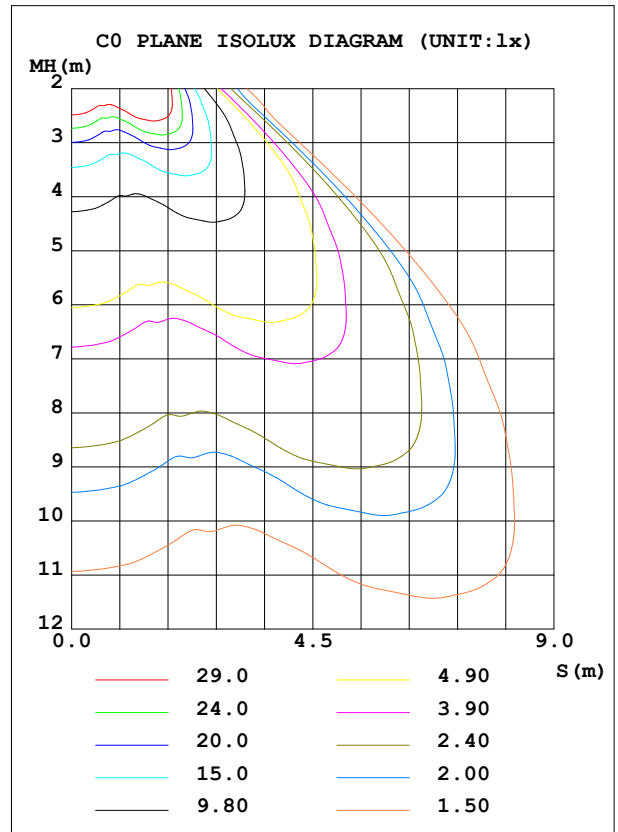
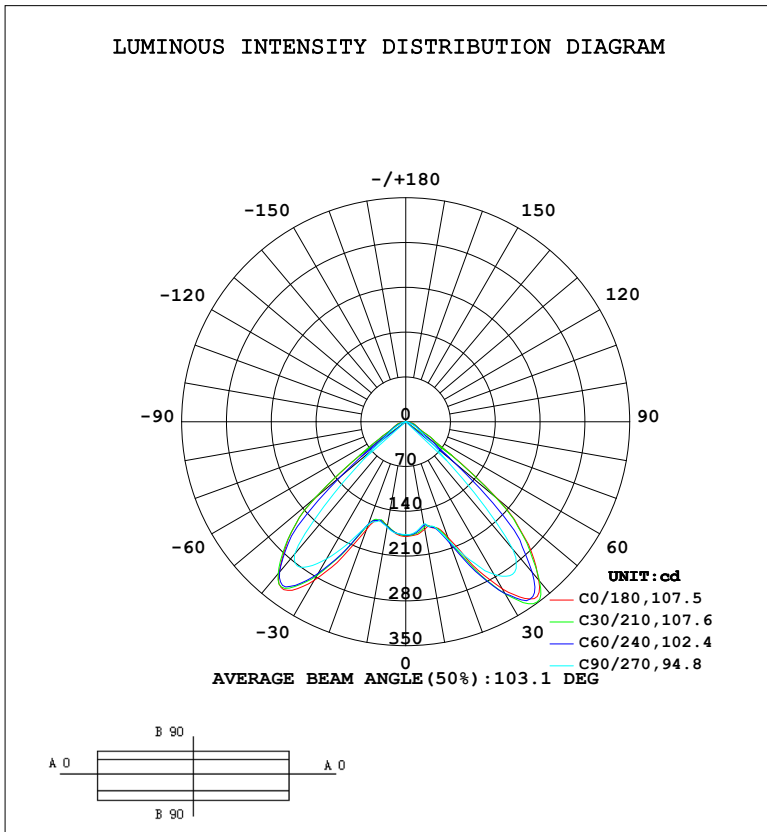


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:220.17V I:0.0608A P:7.3562W PF:0.5491 Freq:50.00Hz		
Lamp Flux:631.649x1 lm		
NAME: HYO-240R-7W 4000K	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	

DATA OF LAMP		PHOTOMETRIC DATA			
MODEL		Imax (cd)	349.9	S/MH (C0/180)	1.72
NOMINAL POWER (W)		LOR (%)	100.0	S/MH (C90/270)	1.47
RATED VOLTAGE (V)	--	TOTAL FLUX (lm)	631.65	η UP, DN (C0-180)	0.0, 50.3
NOMINAL FLUX (lm)	631.649	CIE CLASS	DIRECT	η UP, DN (C180-360)	0.0, 49.7
LAMPS INSIDE	1	η up (%)	0.0	CIBSE SHR NOM	0.75
TEST VOLTAGE (V)	--	η down (%)	100.0	CIBSE SHR MAX	0.95



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:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum, lamp
10	170.6	166.4	162.3	161.0	165.2	165.2	167.4	168.2	0- 10	16.34	16.34	2.59,2.59
20	191.9	198.0	198.4	191.3	178.9	170.8	170.4	178.4	10- 20	47.84	64.18	10.2,10.2
30	301.3	312.3	275.0	294.9	285.9	276.5	247.7	282.3	20- 30	110.0	174.2	27.6,27.6
40	323.3	328.4	260.4	304.1	307.8	311.5	270.1	323.1	30- 40	194.6	368.8	58.4,58.4
50	186.7	185.5	59.22	173.7	183.6	175.2	69.37	191.5	40- 50	175.1	543.9	86.1,86.1
60	30.03	28.43	22.52	26.70	30.08	31.70	23.39	30.53	50- 60	59.07	603.0	95.5,95.5
70	16.72	14.05	8.717	12.97	16.56	13.99	8.249	13.16	60- 70	18.93	621.9	98.5,98.5
80	8.253	2.756	0.6934	2.270	7.675	2.671	0.6549	1.870	70- 80	8.678	630.6	99.8,99.8
90	0.1243	0.0964	0.0655	0.0925	0.1436	0.0973	0.0646	0.0906	80- 90	1.044	631.6	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): 468.46 lm

%lum = 74.2%

%lamp = 74.2%

Conical surface Flux(120deg): 603 lm

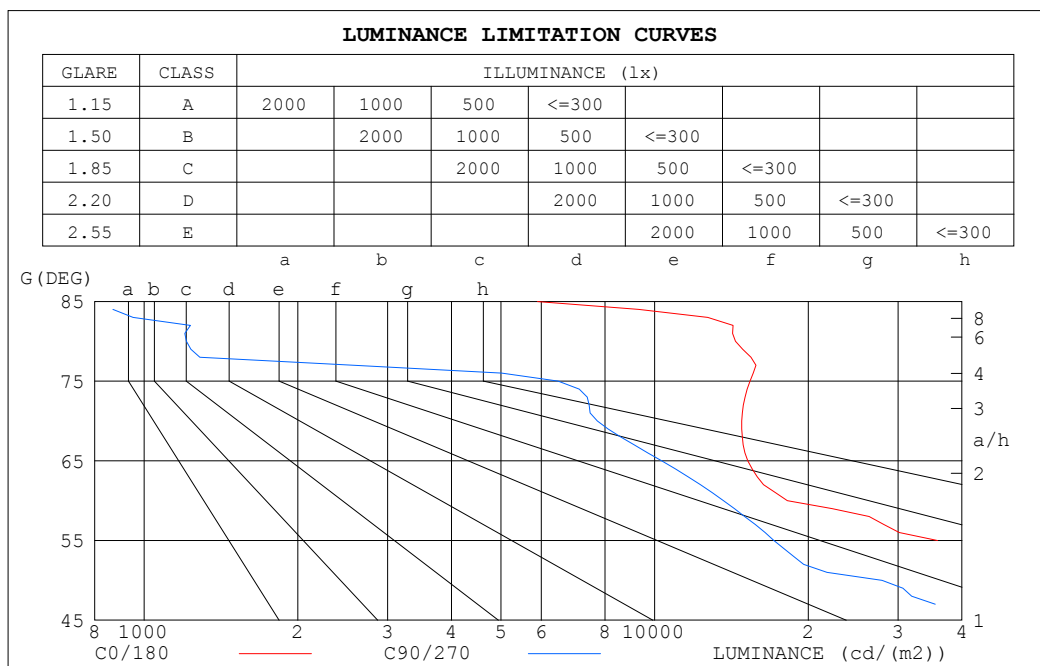
%lum = 95.5%

%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

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:

LUMINANCE LIMITATION CURVES



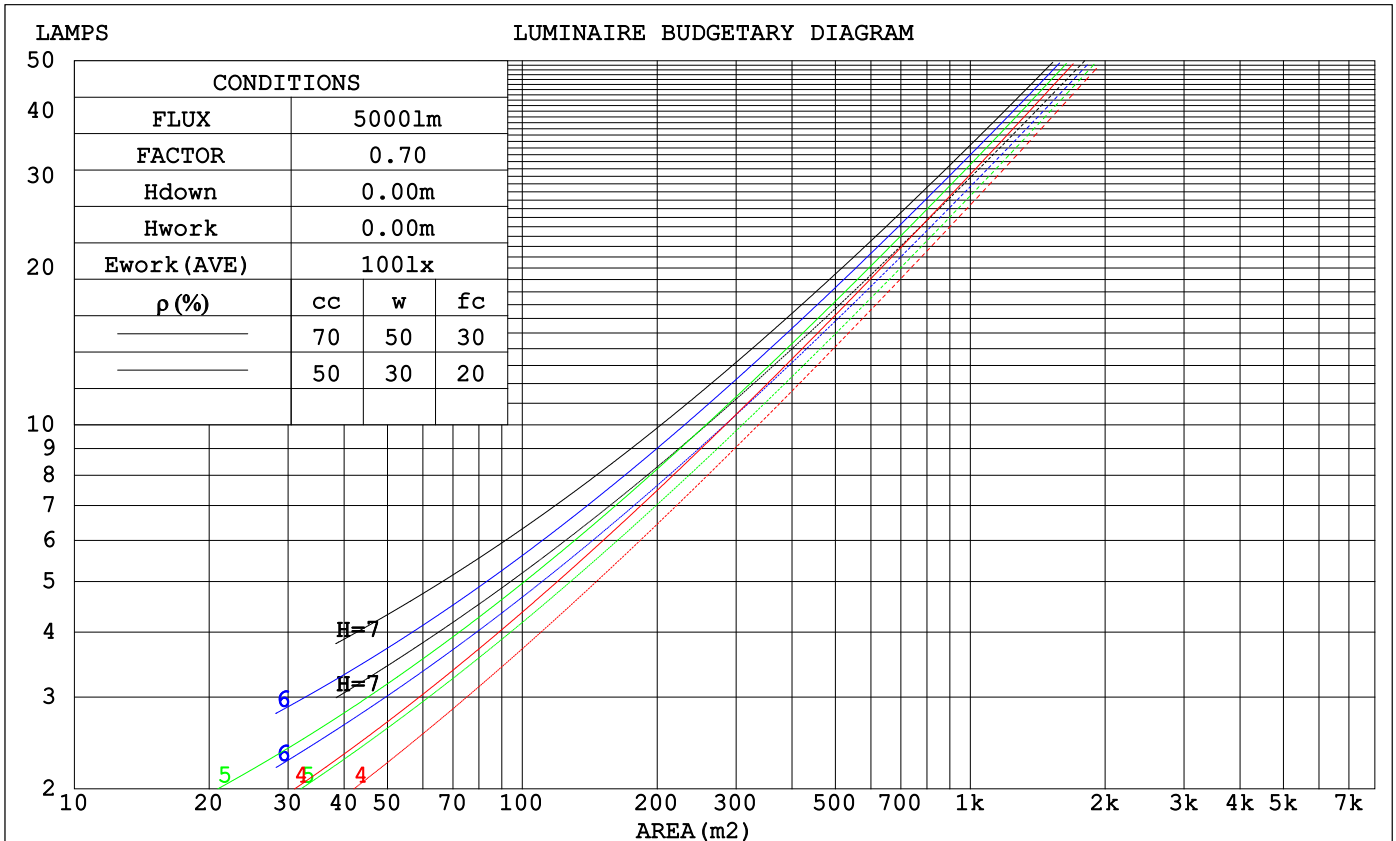
LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	5896	739
80	14403	1210
75	15381	6471
70	14816	7723
65	15230	10328
60	18200	13646
55	35839	17135
50	88016	27917
45	116270	54177

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

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	1.08	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	.79	.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	.67	.62	.71	.66	.62	.69	.65	.61	.59
5.0	.69	.61	.55	.68	.61	.55	.66	.60	.55	.64	.59	.54	.63	.58	.54	.52
6.0	.63	.54	.49	.62	.54	.48	.60	.53	.48	.58	.52	.48	.57	.51	.47	.45
7.0	.57	.48	.43	.56	.48	.43	.54	.47	.42	.53	.47	.42	.52	.46	.42	.40
8.0	.51	.43	.38	.51	.43	.38	.49	.43	.38	.48	.42	.37	.47	.41	.37	.35
9.0	.47	.39	.34	.46	.39	.34	.45	.38	.34	.44	.38	.33	.43	.37	.33	.31
10.0	.43	.35	.30	.42	.35	.30	.41	.35	.30	.41	.34	.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

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:

WEC AND CCEC

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						Wall Exitance Coefficients(WEC)									
0.0																
1.0	.240	.137	.043	.233	.133	.042	.220	.126	.040	.209	.120	.039	.198	.115	.037	
2.0	.236	.129	.040	.230	.127	.039	.219	.122	.038	.209	.117	.037	.199	.113	.035	
3.0	.226	.121	.036	.221	.119	.036	.211	.115	.035	.202	.111	.034	.194	.107	.033	
4.0	.216	.112	.033	.211	.110	.033	.202	.107	.032	.194	.104	.031	.187	.101	.031	
5.0	.205	.104	.030	.200	.103	.030	.193	.100	.030	.186	.098	.029	.179	.096	.029	
6.0	.194	.097	.028	.190	.096	.028	.183	.094	.027	.177	.092	.027	.171	.090	.027	
7.0	.184	.091	.026	.180	.090	.026	.174	.088	.025	.168	.086	.025	.163	.085	.025	
8.0	.174	.085	.024	.171	.084	.024	.166	.083	.024	.160	.081	.023	.155	.080	.023	
9.0	.165	.080	.022	.163	.079	.022	.158	.078	.022	.153	.077	.022	.148	.075	.022	
10.0	.157	.075	.021	.155	.075	.021	.150	.074	.021	.146	.072	.021	.142	.071	.020	

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						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	.080	.134	.098	.070	.092	.068	.049	.053	.040	.029	.017	.013	.009	
4.0	.149	.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	.136	.081	.042	.117	.070	.037	.080	.049	.026	.047	.029	.015	.015	.009	.005	
7.0	.130	.074	.035	.112	.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	.103	.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	27.2	28.6	27.5	28.8	29.0	25.2	26.6	25.5	26.8	27.0
3H	27.2	28.4	27.5	28.7	28.9	25.1	26.4	25.4	26.6	26.8
4H	27.2	28.4	27.5	28.6	28.9	25.1	26.2	25.4	26.5	26.7
6H	27.2	28.3	27.5	28.6	28.8	25.0	26.1	25.3	26.3	26.6
8H	27.2	28.2	27.5	28.5	28.8	24.9	26.0	25.2	26.2	26.5
12H	27.2	28.2	27.5	28.5	28.7	24.9	25.9	25.2	26.2	26.4
4H 2H	27.0	28.2	27.3	28.4	28.7	25.1	26.3	25.4	26.5	26.8
3H	27.1	28.1	27.4	28.3	28.6	25.1	26.1	25.4	26.4	26.6
4H	27.1	28.0	27.5	28.3	28.7	25.0	25.9	25.4	26.3	26.6
6H	27.2	28.0	27.6	28.3	28.7	25.0	25.7	25.3	26.1	26.4
8H	27.2	27.9	27.6	28.3	28.7	24.9	25.6	25.3	26.0	26.4
12H	27.2	27.9	27.6	28.2	28.6	24.9	25.5	25.3	25.9	26.3
8H 4H	27.0	27.7	27.4	28.1	28.5	25.0	25.7	25.4	26.1	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	24.9	25.4	25.3	25.8	26.3
12H	27.2	27.6	27.6	28.1	28.5	24.8	25.3	25.3	25.7	26.2
12H 4H	27.0	27.6	27.4	28.0	28.4	25.0	25.6	25.4	26.0	26.4
6H	27.1	27.6	27.5	28.0	28.5	24.9	25.4	25.3	25.8	26.3
8H	27.1	27.6	27.6	28.0	28.5	24.8	25.3	25.3	25.7	26.2
Variations with the observer position at spacings(CIE Pub.117):										
S = 1.0H	+ 1.9 / - 3.4					+ 2.5 / - 5.9				
1.5H	+ 1.3 / - 4.0					+ 2.6 / - 5.9				
2.0H	+ 4.3 / - 5.0					+ 4.0 / - 3.6				

CIE Pub.117, 631.6 lm Total Lamp Luminous Flux Corrected (8log(F/F0) = -1.6)
 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:

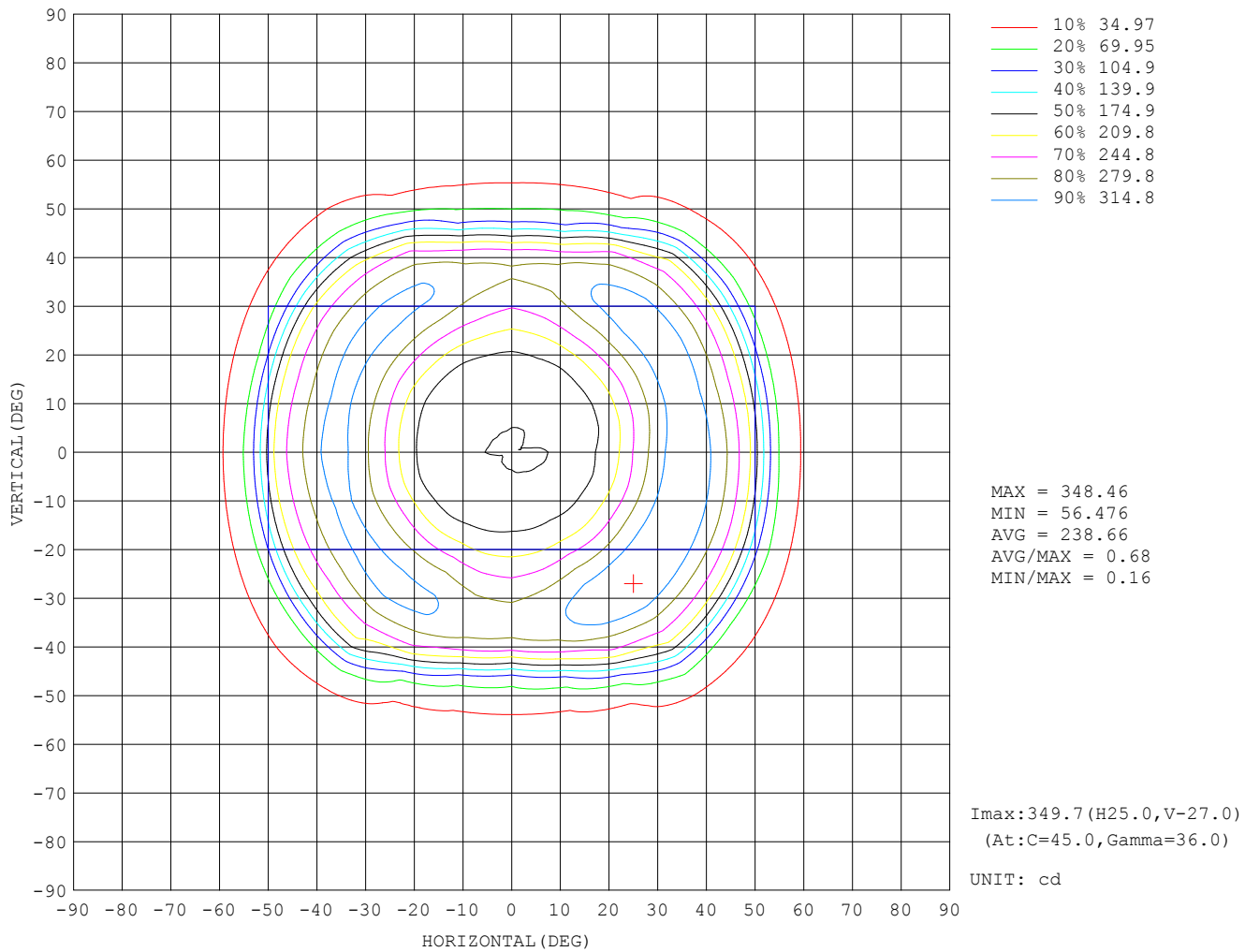
UTILIZATION FACTORS TABLE

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	48	64	54	48	63	54	48	42
0.80	76	66	60	75	65	59	73	65	59	53
1.00	85	76	70	84	75	69	82	76	69	63
1.25	91	83	77	90	82	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	97	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

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:

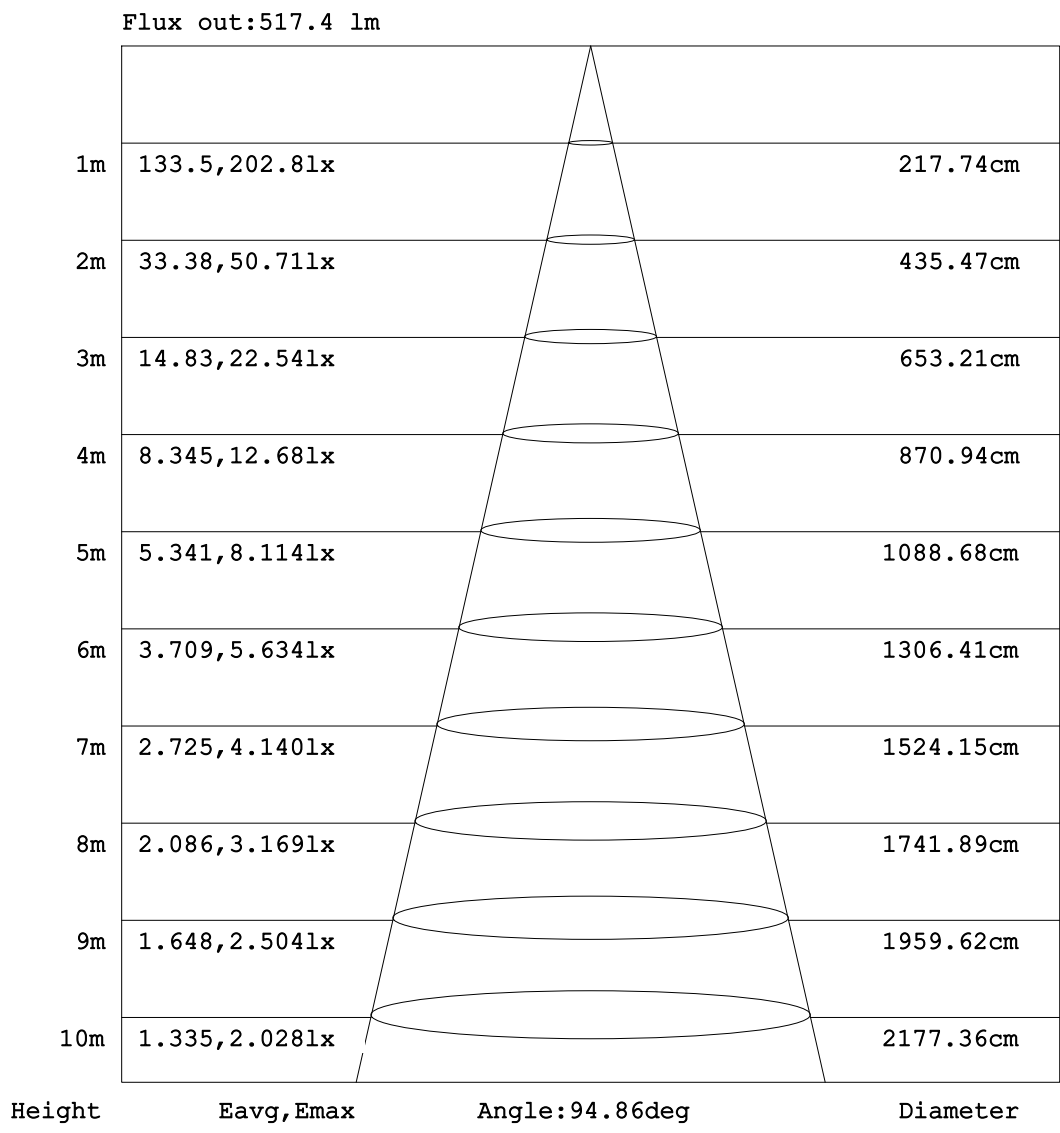
ISOCANDELA DIAGRAM



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

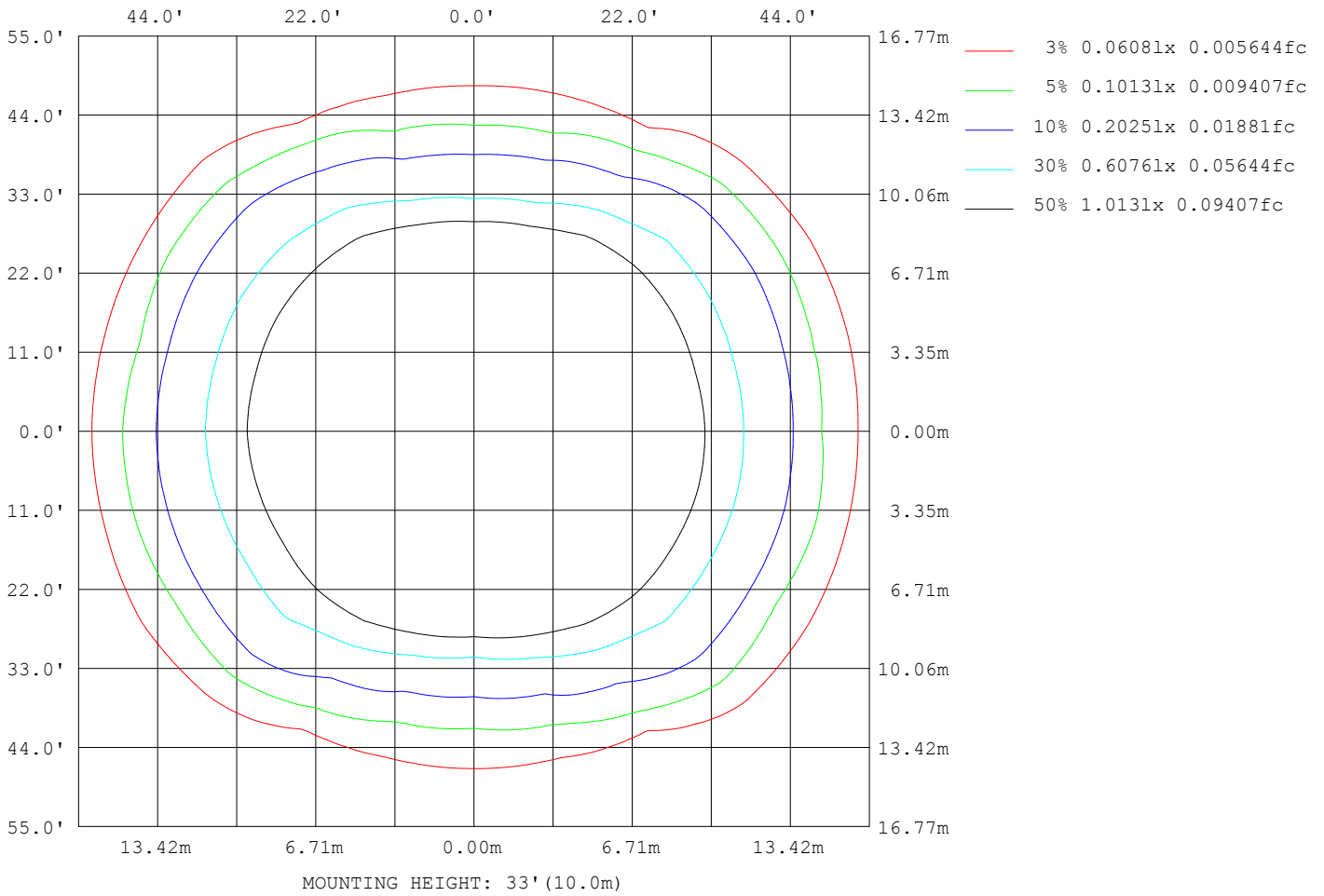


Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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:

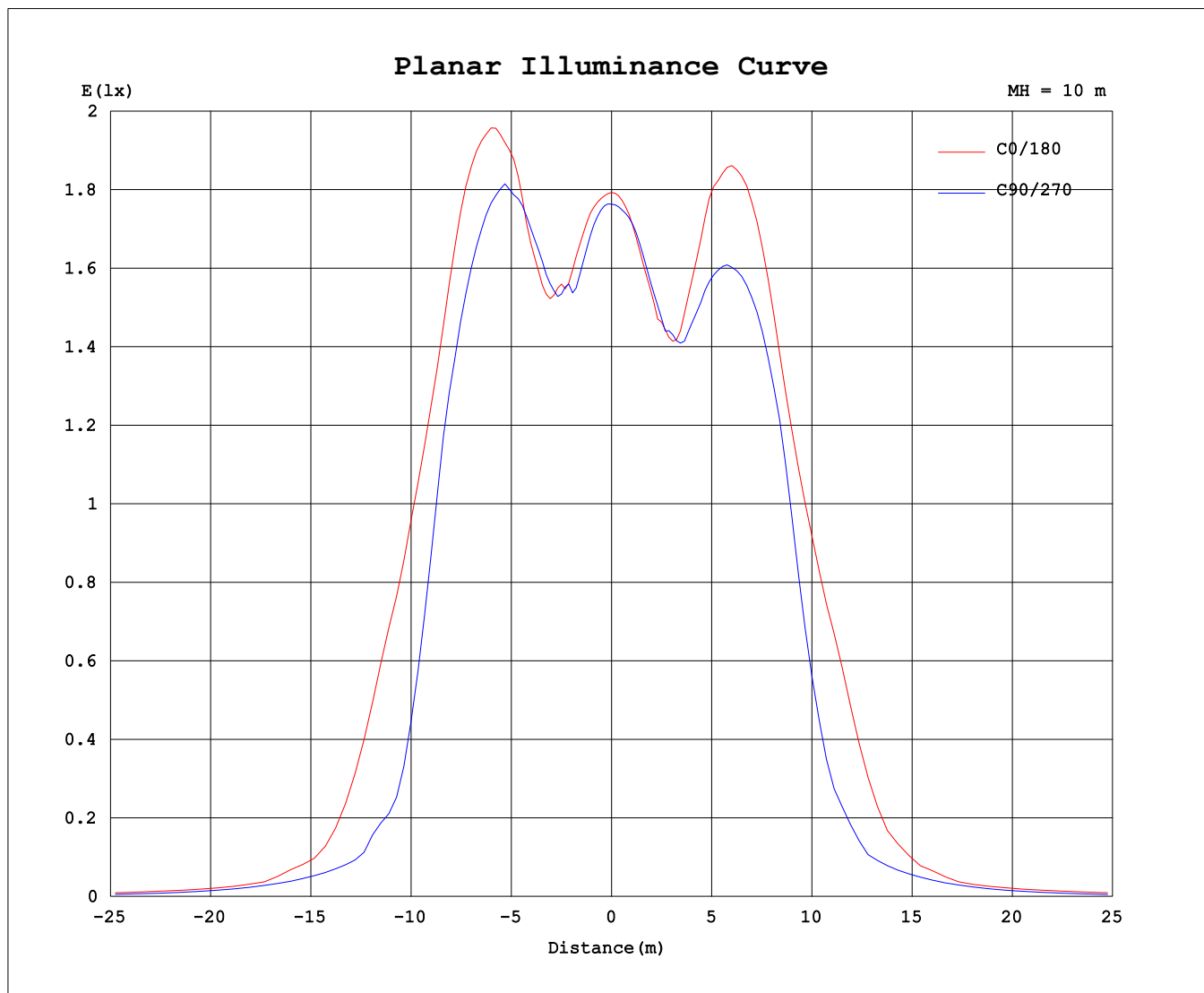
ISOLUX DIAGRAM



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:

