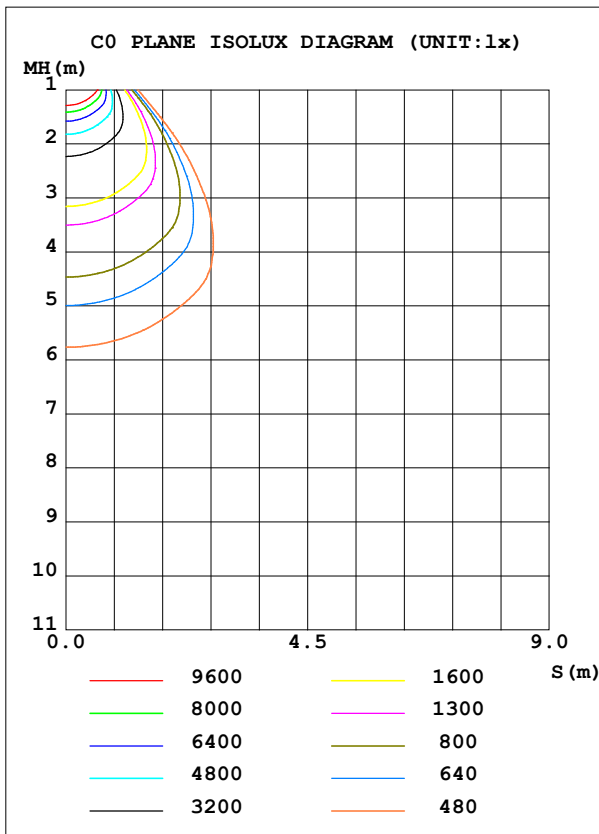
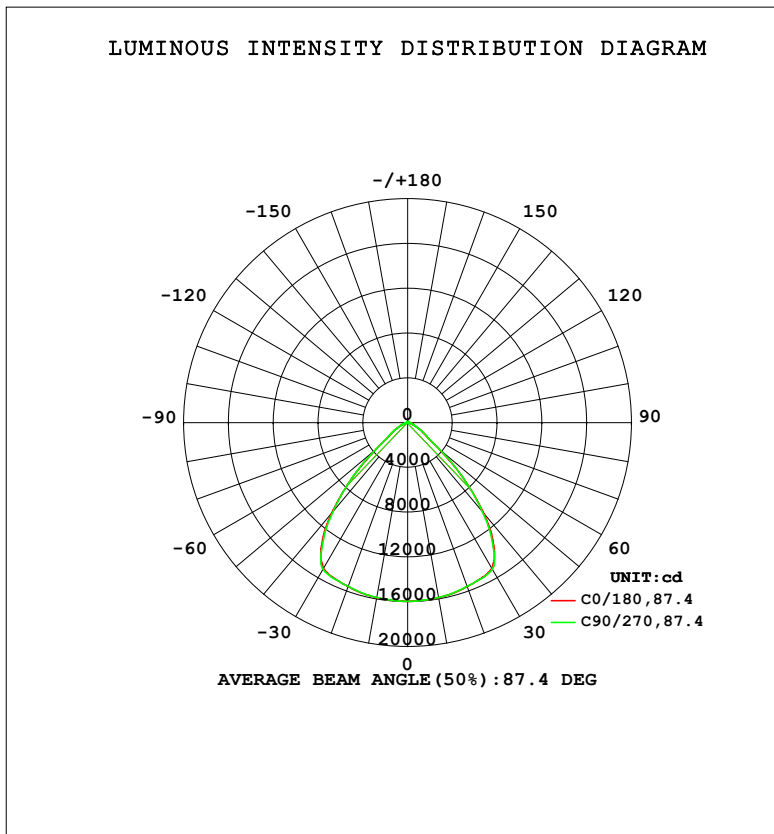


EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

LUMINAIRE PHOTOMETRIC TEST REPORT

Test: U:229.6V I:0.658A P:148.3W PF:0.982 Freq:50.01Hz UTHDi: 0.00% ITHDi: 0.00% KDisp: 0 Lamp Flux: 30260.7x1 lm		
NAME: HB68-150H-5070-H00198+H00C01A	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

DATA OF LAMP			PHOTOMETRIC DATA Eff: 204.08 lm/W			
MODEL	/		I _{max} (cd)	15958	S/MH (C0/180)	1.26
NOMINAL POWER (W)	/		LOR (%)	100.0	S/MH (C90/270)	1.25
RATED VOLTAGE (V)	/		TOTAL FLUX (lm)	30261	η UP, DN (C0-180)	0.5, 49.5
NOMINAL FLUX (lm)	30260.7		CIE CLASS	DIRECT	η UP, DN (C180-360)	0.5, 49.5
LAMPS INSIDE	1		η up (%)	1.1	CIBSE SHR NOM	1.25
TEST VOLTAGE (V)	/		η down (%)	98.9	CIBSE SHR MAX	1.30



C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature: 25.3°C
Operators: ZZX
Test Date: 2023-07-17

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γ Range: 0 - 180DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-R5000_V2 SYSTEM V2.00.465
Humidity:65.0%
Test Distance:26.000m [K=0.4556]
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	1588	1589	1587	1589	1588	1589	1587	1589	0- 10	1519	1519	5.02,5.02
20	1558	1560	1556	1560	1558	1560	1556	1560	10- 20	4461	5980	19.8,19.8
30	1504	1511	1511	1511	1504	1511	1511	1511	20- 30	7118	13098	43.3,43.3
40	1062	1059	1038	1059	1062	1059	1038	1059	30- 40	8237	21335	70.5,70.5
50	366.2	363.4	366.4	363.4	366.2	363.4	366.4	363.4	40- 50	5419	26754	88.4,88.4
60	136.7	135.1	135.4	135.1	136.7	135.1	135.4	135.1	50- 60	1902	28656	94.7,94.7
70	49.76	50.05	50.11	50.05	49.76	50.05	50.11	50.05	60- 70	829.5	29486	97.4,97.4
80	18.63	18.30	17.69	18.30	18.63	18.30	17.69	18.30	70- 80	339.7	29825	98.6,98.6
90	5.488	5.368	5.102	5.368	5.488	5.368	5.102	5.368	80- 90	114.3	29940	98.9,98.9
100	2.905	3.210	3.078	3.210	2.905	3.210	3.078	3.210	90-100	40.68	29980	99.1,99.1
110	3.173	3.318	3.072	3.318	3.173	3.318	3.072	3.318	100-110	31.87	30012	99.2,99.2
120	4.361	4.636	4.220	4.636	4.361	4.636	4.220	4.636	110-120	36.81	30049	99.3,99.3
130	6.096	6.403	6.380	6.403	6.096	6.403	6.380	6.403	120-130	46.94	30096	99.5,99.5
140	6.938	7.081	7.115	7.081	6.938	7.081	7.115	7.081	130-140	53.16	30149	99.6,99.6
150	7.360	7.542	7.588	7.542	7.360	7.542	7.588	7.542	140-150	46.02	30195	99.8,99.8
160	7.207	7.293	7.321	7.293	7.207	7.293	7.321	7.293	150-160	34.51	30230	99.9,99.9
170	8.641	8.661	8.650	8.661	8.641	8.661	8.650	8.661	160-170	22.39	30252	100,100
180	9.324	9.475	9.468	9.475	9.324	9.475	9.468	9.475	170-180	8.708	30261	100,100
DEG	LUMINOUS INTENSITY:X10cd									UNIT:lm		

Conical surface Flux(90deg): 24598 lm

%lum = 81.3%
%lamp = 81.3%

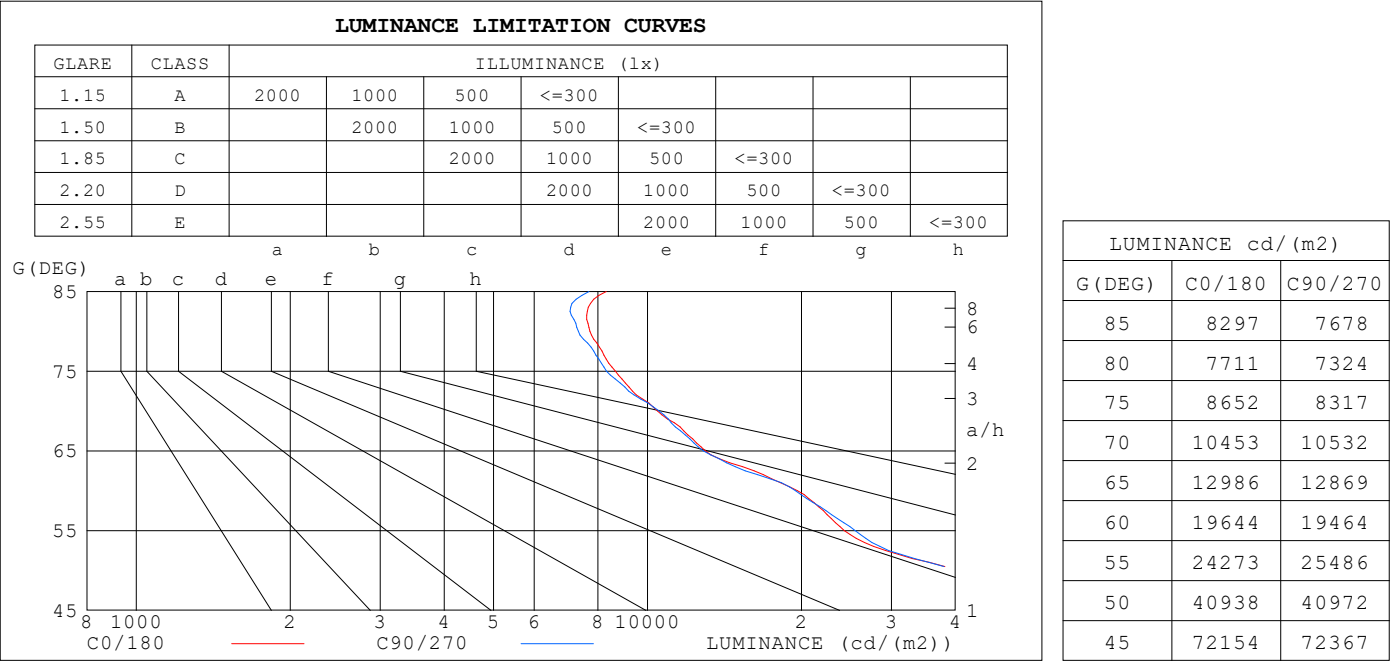
Conical surface Flux(120deg): 28656 lm

%lum = 94.7%
%lamp = 94.7%

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25.3℃
Operators:ZZX
Test Date:2023-07-17

γ Range: 0 - 180DEG
 γ Interval: 0.5DEG
 γ Test System:EVERFINE GO-R5000_V2 SYSTEM V2.00.465
Humidity:65.0%
Test Distance:26.000m [K=0.4556]
Remarks:

LUMINANCE LIMITATION CURVES



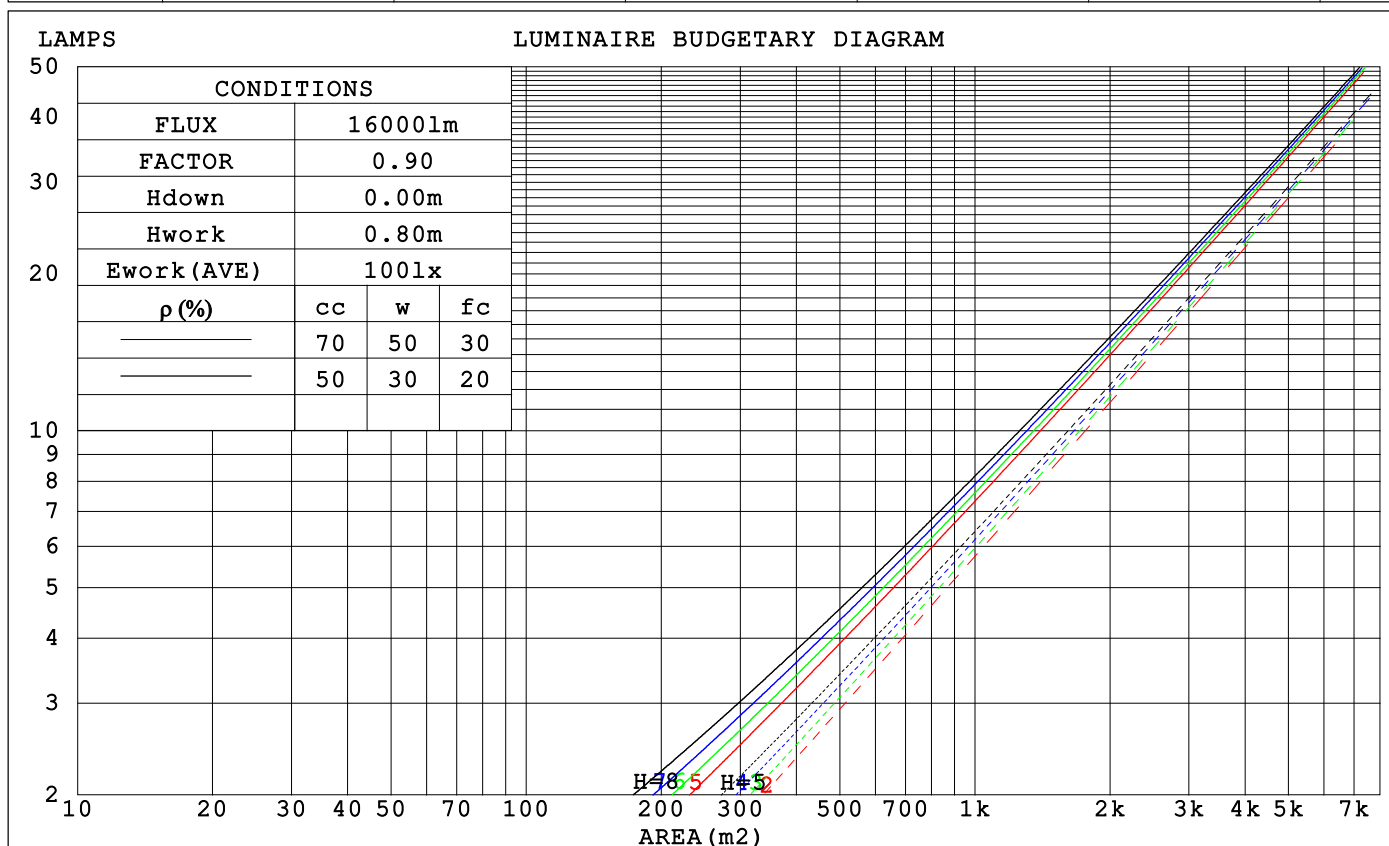
C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25.3℃
Operators:ZZX
Test Date:2023-07-17

γ Range: 0 - 180DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-R5000_V2 SYSTEM V2.00.465
Humidity:65.0%
Test Distance:26.000m [K=0.4556]
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	1.01	1.01	1.01	.99
1.0	1.08	1.05	1.02	1.06	1.03	1.01	1.02	.99	.97	.98	.96	.94	.94	.92	.91	.89
2.0	.98	.93	.89	.96	.92	.88	.93	.89	.85	.89	.86	.83	.86	.84	.82	.80
3.0	.89	.83	.78	.88	.82	.77	.85	.80	.76	.82	.78	.74	.79	.76	.73	.71
4.0	.81	.74	.69	.80	.73	.68	.77	.72	.67	.75	.70	.66	.73	.69	.66	.64
5.0	.74	.67	.61	.73	.66	.61	.71	.65	.60	.69	.64	.60	.67	.63	.59	.57
6.0	.68	.61	.55	.67	.60	.55	.65	.59	.54	.64	.58	.54	.62	.57	.53	.52
7.0	.62	.55	.50	.62	.55	.50	.60	.54	.49	.59	.53	.49	.57	.52	.49	.47
8.0	.58	.50	.45	.57	.50	.45	.56	.49	.45	.54	.49	.45	.53	.48	.44	.43
9.0	.53	.46	.41	.53	.46	.41	.52	.45	.41	.51	.45	.41	.50	.44	.41	.39
10.0	.50	.43	.38	.49	.42	.38	.48	.42	.38	.47	.41	.37	.46	.41	.37	.36



C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature: 25.3°C
Operators: ZZK
Test Date: 2023-07-17

γ Range: 0 - 180DEG
 γ Interval: 0.5DEG
Test System: EVERFINE GO-R5000_V2 SYSTEM V2.00.465
Humidity: 65.0%
Test Distance: 26.000m [K=0.4556]
Remarks:

EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

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	.223	.127	.040	.216	.123	.039	.202	.116	.037	.190	.110	.035	.179	.104	.033	
2.0	.216	.118	.036	.210	.116	.036	.198	.110	.034	.188	.105	.033	.178	.100	.032	
3.0	.206	.110	.033	.201	.107	.032	.191	.103	.031	.181	.099	.030	.173	.096	.030	
4.0	.196	.102	.030	.191	.100	.030	.182	.097	.029	.174	.093	.028	.166	.090	.027	
5.0	.185	.095	.027	.181	.093	.027	.173	.090	.027	.166	.088	.026	.159	.085	.026	
6.0	.176	.088	.025	.172	.087	.025	.165	.085	.025	.159	.082	.024	.152	.080	.024	
7.0	.167	.083	.023	.164	.082	.023	.157	.080	.023	.151	.078	.023	.146	.076	.022	
8.0	.159	.077	.022	.156	.077	.022	.150	.075	.021	.145	.073	.021	.140	.072	.021	
9.0	.151	.073	.020	.148	.072	.020	.143	.071	.020	.138	.069	.020	.134	.068	.020	
10.0	.144	.069	.019	.141	.068	.019	.137	.067	.019	.132	.066	.019	.128	.064	.018	

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	.199	.199	.199	.170	.170	.170	.116	.116	.116	.067	.067	.067	.021	.021	.021	
1.0	.182	.165	.149	.156	.142	.129	.107	.097	.089	.061	.056	.052	.020	.018	.017	
2.0	.170	.140	.115	.146	.121	.100	.100	.084	.070	.058	.049	.041	.018	.016	.013	
3.0	.160	.122	.092	.138	.105	.079	.094	.073	.056	.055	.043	.033	.018	.014	.011	
4.0	.152	.108	.075	.130	.093	.065	.090	.065	.046	.052	.038	.027	.017	.012	.009	
5.0	.144	.097	.062	.124	.084	.054	.085	.059	.038	.050	.034	.023	.016	.011	.007	
6.0	.138	.088	.053	.118	.077	.046	.082	.054	.033	.047	.032	.019	.015	.010	.006	
7.0	.132	.081	.046	.113	.070	.040	.078	.049	.028	.045	.029	.017	.015	.010	.006	
8.0	.126	.075	.041	.109	.065	.035	.075	.046	.025	.044	.027	.015	.014	.009	.005	
9.0	.121	.070	.036	.104	.061	.032	.072	.043	.022	.042	.025	.013	.014	.008	.004	
10.0	.116	.066	.033	.100	.058	.029	.069	.040	.020	.041	.024	.012	.013	.008	.004	

C Range: 0 - 360DEG
 C Interval: 22.5DEG
 Test Speed: HIGH
 Temperature:25.3℃
 Operators:ZZX
 Test Date:2023-07-17

γ Range: 0 - 180DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-R5000_V2 SYSTEM V2.00.465
 Humidity:65.0%
 Test Distance:26.000m [K=0.4556]
 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	19.4	20.7	19.8	21.0	21.4	19.5	20.7	19.9	21.1	21.4
3H	20.1	21.2	20.5	21.5	21.9	20.1	21.2	20.5	21.5	21.9
4H	20.3	21.3	20.7	21.7	22.1	20.2	21.2	20.6	21.6	22.0
6H	20.4	21.3	20.8	21.7	22.1	20.3	21.3	20.8	21.7	22.1
8H	20.4	21.3	20.9	21.7	22.2	20.4	21.2	20.8	21.7	22.1
12H	20.4	21.3	20.9	21.7	22.2	20.4	21.2	20.8	21.6	22.1
4H 2H	19.6	20.6	20.0	21.0	21.4	19.6	20.6	20.0	21.0	21.4
3H	20.4	21.2	20.8	21.6	22.1	20.3	21.2	20.8	21.6	22.0
4H	20.6	21.4	21.1	21.8	22.3	20.6	21.3	21.0	21.8	22.2
6H	20.9	21.5	21.3	22.0	22.5	20.8	21.4	21.3	21.9	22.4
8H	20.9	21.5	21.4	22.0	22.5	20.8	21.4	21.3	21.9	22.4
12H	21.0	21.5	21.5	22.0	22.5	20.9	21.4	21.4	21.9	22.4
8H 4H	20.7	21.3	21.2	21.7	22.2	20.6	21.2	21.1	21.7	22.2
6H	21.0	21.4	21.5	22.0	22.5	20.9	21.4	21.4	21.9	22.4
8H	21.1	21.5	21.6	22.0	22.6	21.0	21.4	21.5	21.9	22.5
12H	21.2	21.6	21.7	22.1	22.7	21.1	21.5	21.6	22.0	22.6
12H 4H	20.6	21.2	21.2	21.7	22.2	20.6	21.1	21.1	21.6	22.1
6H	20.9	21.4	21.5	21.9	22.4	20.9	21.3	21.4	21.8	22.4
8H	21.1	21.5	21.6	22.0	22.6	21.0	21.4	21.5	21.9	22.5
CIE190: 2010										

CIE190: 2010
Area: 0.1392 m2

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25.3℃
Operators:ZZX
Test Date:2023-07-17

γ Range: 0 - 180DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-R5000_V2 SYSTEM V2.00.465
Humidity:65.0%
Test Distance:26.000m [K=0.4556]
Remarks:

EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

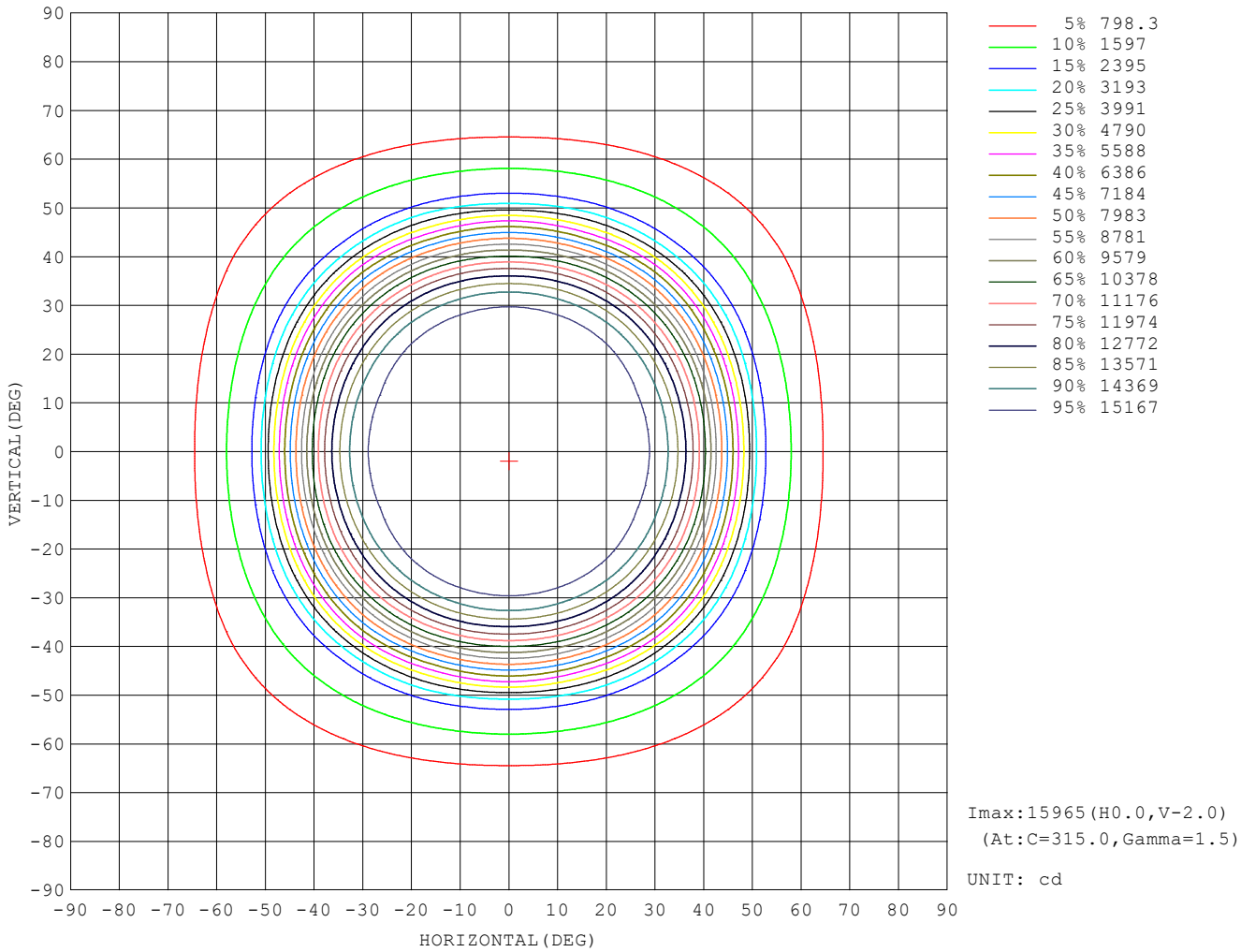
UTILIZATION FACTORS TABLE

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) $k(RI) \times RCR = 5$									
$k = 0.60$	73	64	59	72	64	59	71	63	58	54
0.80	82	74	68	81	73	68	80	73	68	63
1.00	89	81	76	88	81	76	86	81	75	70
1.25	95	88	83	94	87	82	91	86	82	76
1.50	99	92	87	97	91	87	95	90	86	80
2.00	103	98	93	102	97	93	99	94	91	85
2.50	106	101	97	104	99	96	101	97	94	87
3.00	108	103	100	106	102	99	102	99	96	89
4.00	111	107	104	108	105	102	104	102	99	91
5.00	112	109	106	110	107	105	106	103	101	93
ROOM INDEX	UF (total)									Direct
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: ZZX
 Test Date: 2023-07-17

γ Range: 0 - 180DEG
 γ Interval: 0.5DEG
 Test System: EVERFINE GO-R5000_V2 SYSTEM V2.00.465
 Humidity: 65.0%
 Test Distance: 26.000m [K=0.4556]
 Remarks:

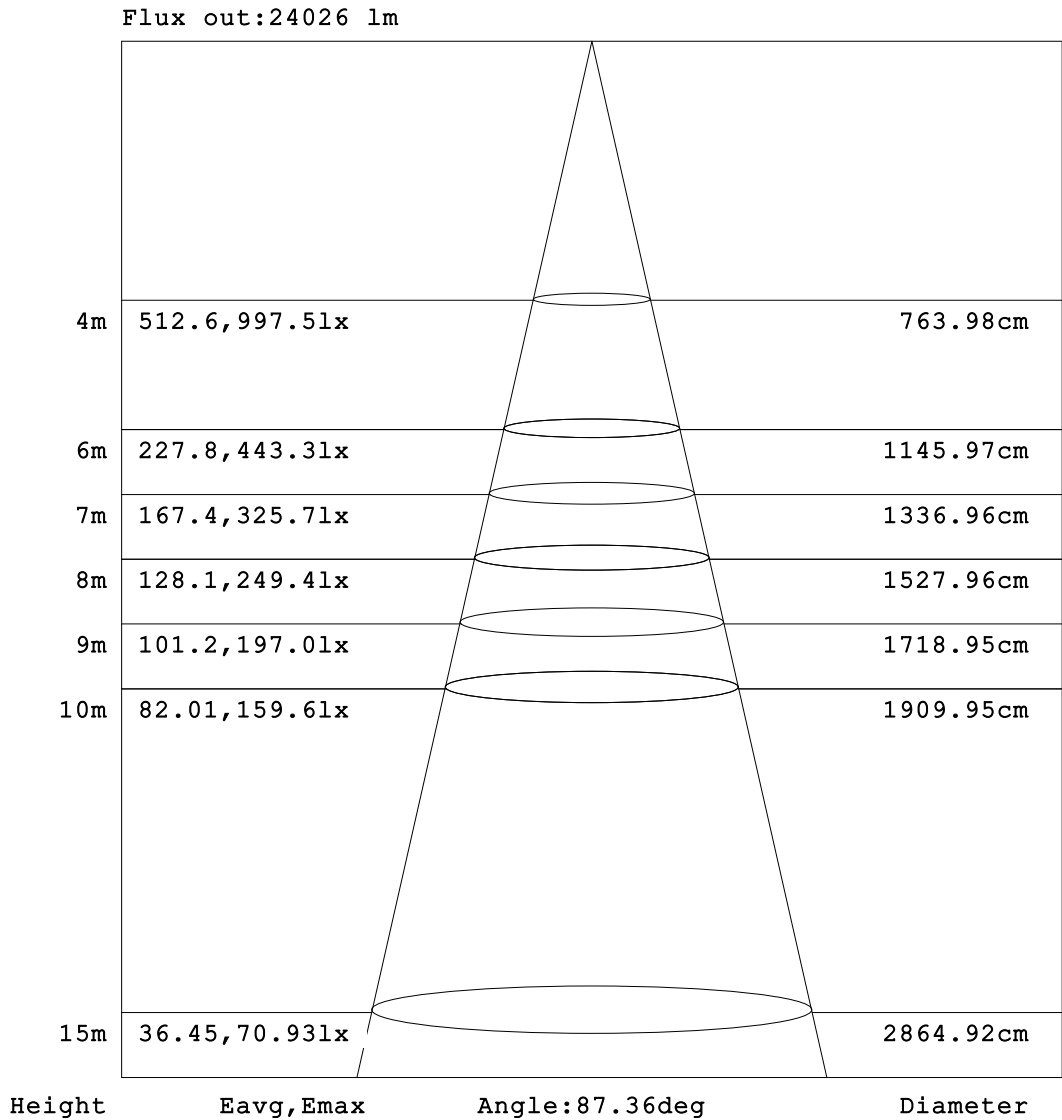
ISOCANDELA DIAGRAM



C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25.3℃
Operators:ZZX
Test Date:2023-07-17

γ Range: 0 - 180DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-R5000_V2 SYSTEM V2.00.465
Humidity:65.0%
Test Distance:26.000m [K=0.4556]
Remarks:

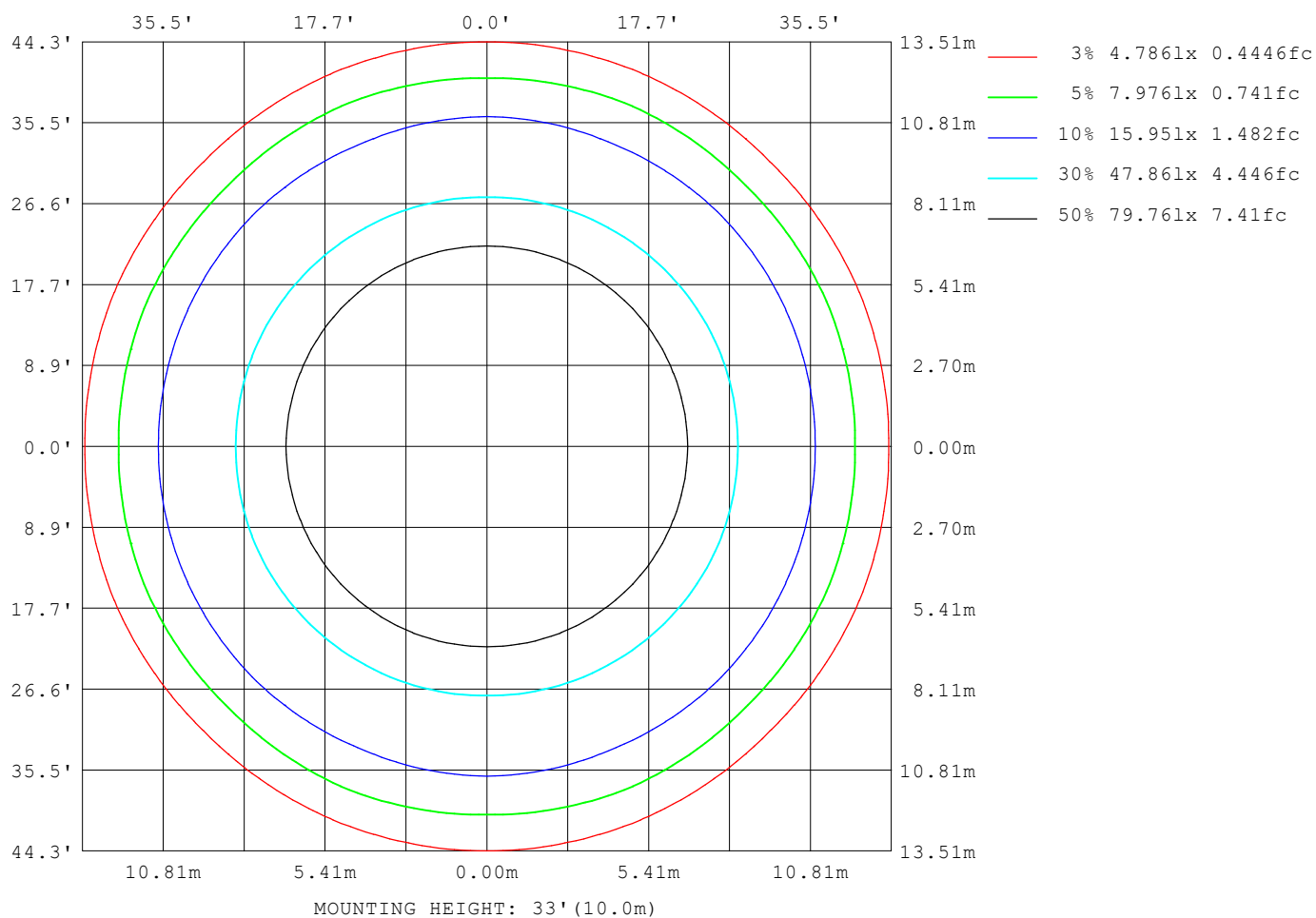
AAI Figure



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

EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

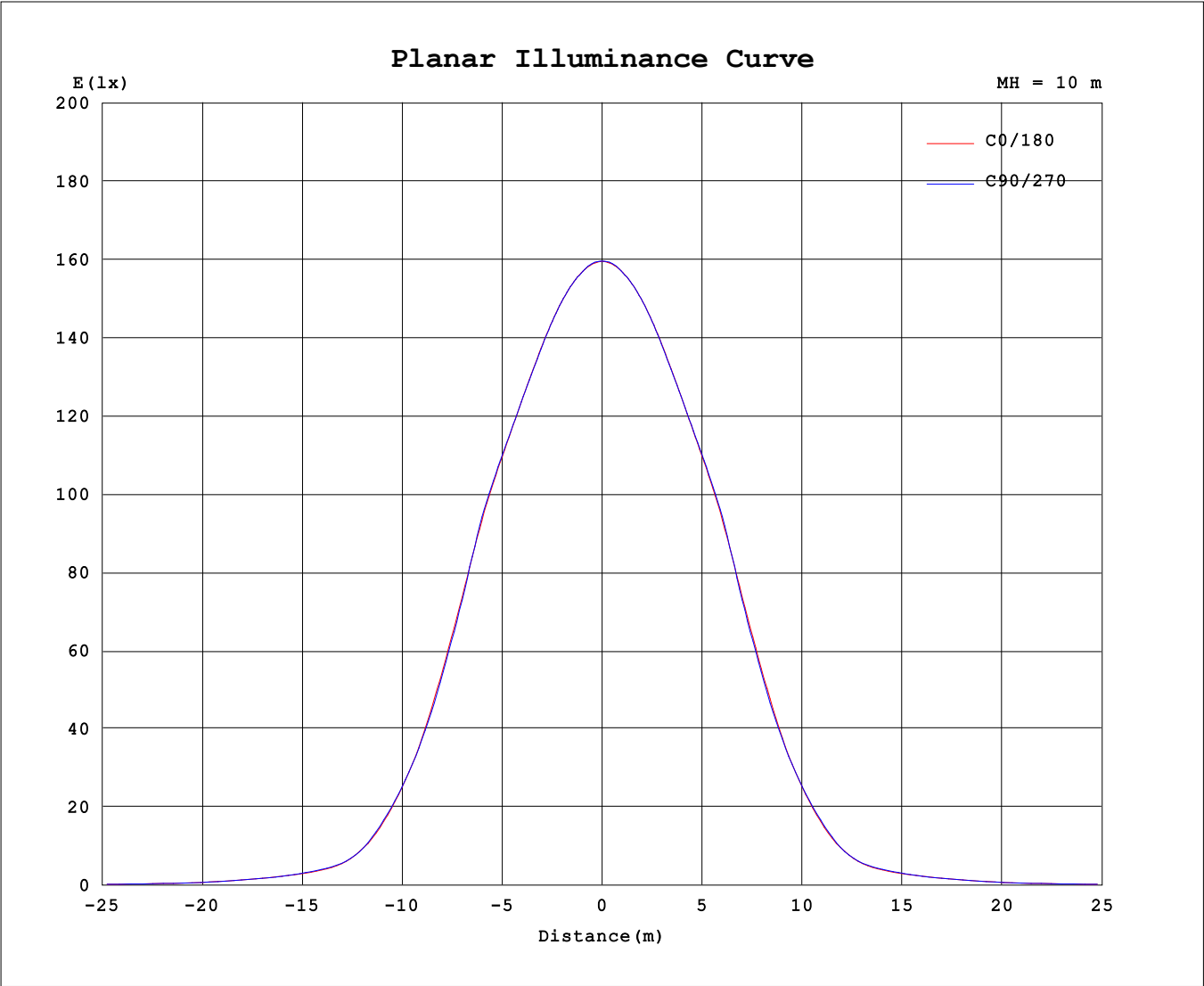
ISOLUX DIAGRAM



C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature: 25.3°C
Operators: ZZX
Test Date: 2023-07-17

γ Range: 0 - 180DEG
γ Interval: 0.5DEG
Test System: EVERFINE GO-R5000_V2 SYSTEM V2.00.465
Humidity: 65.0%
Test Distance: 26.000m [K=0.4556]
Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG	γ Range: 0 - 180DEG
C Interval: 22.5DEG	γ Interval: 0.5DEG
Test Speed: HIGH	Test System:EVERFINE GO-R5000_V2 SYSTEM V2.00.465
Temperature:25.3℃	Humidity:65.0%
Operators:ZZX	Test Distance:26.000m [K=0.4556]
Test Date:2023-07-17	Remarks: