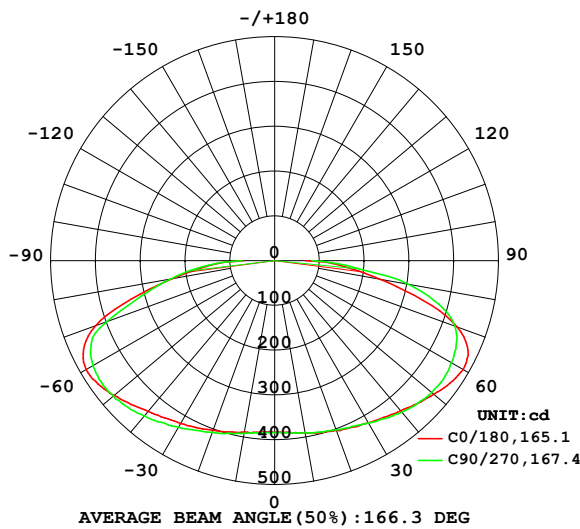


LUMINAIRE PHOTOMETRIC TEST REPORT

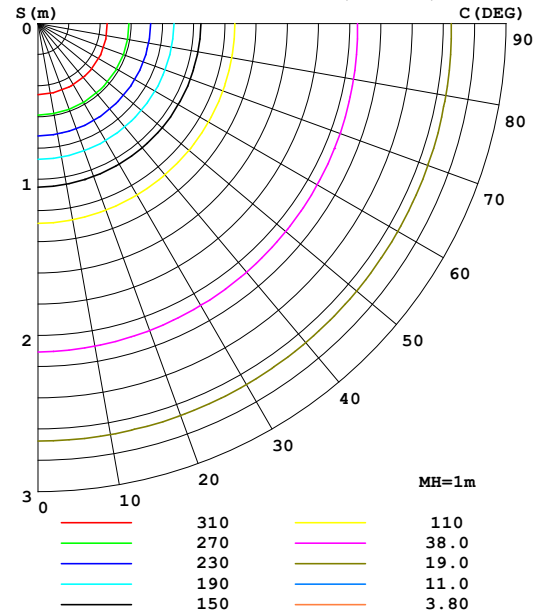
Test:U:240.4V I:0.0808A P:18.4W PF:0.9461 Freq:49.99Hz		
UTHDi:0.16% ITHDi:17.07% KDisp:0.9629 Lamp Flux:2382.2x1 lm		
NAME: HV5882T-18W-3000K	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Havit Lighting	SUR.:	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 129.68 lm/W			
MODEL		Imax (cd)	486.6	S/MH(C0/180)	1.73
NOMINAL POWER(W)	18	LOR(%)	100.0	S/MH(C90/270)	1.77
RATED VOLTAGE(V)	240	TOTAL FLUX(lm)	2382.2	η UP,DN(C0-180)	0.0,50.5
NOMINAL FLUX(lm)	2382.2	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,49.5
LAMPS INSIDE	1	η up (%)	0.0	CIBSE SHR NOM	2.00
TEST VOLTAGE(V)	240.35	η down (%)	100.0	CIBSE SHR MAX	2.00

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



PLANAR ISOLUX DIAGRAM(UNIT:lx)



C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2023-09-12

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
Test System:EVERFINE GO-SPEX500_V1 SYSTEM V2.00.453
Humidity:65.0%
Test Distance:3.090m [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	390.7	390.7	390.2	389.7	388.6	391.6	391.6	391.4	0- 10	36.96	36.96	1.55,1.55
20	403.0	402.7	401.8	401.7	403.4	406.2	408.1	405.7	10- 20	112.8	149.8	6.29,6.29
30	418.5	418.0	419.0	416.6	419.9	423.7	429.6	422.8	20- 30	191.1	340.9	14.3,14.3
40	437.8	437.6	441.3	436.7	439.7	443.3	452.9	445.4	30- 40	271.2	612.0	25.7,25.7
50	464.3	457.5	458.4	460.0	468.7	468.3	470.8	472.1	40- 50	351.5	963.6	40.4,40.4
60	485.9	469.0	456.1	481.0	485.8	480.1	468.6	485.8	50- 60	424.2	1388	58.3,58.3
70	433.7	434.2	428.1	450.9	425.5	403.8	399.3	412.4	60- 70	457.0	1845	77.4,77.4
80	238.8	271.5	302.0	269.5	231.5	230.6	235.2	230.4	70- 80	359.7	2204	92.5,92.5
90	69.06	74.60	83.02	73.71	69.52	63.72	73.23	68.83	80- 90	177.8	2382	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): 777.89 lm

%lum = 32.7%

%lamp = 32.7%

Conical surface Flux(130deg): 1617.5 lm

%lum = 67.9%

%lamp = 67.9%

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2023-09-12

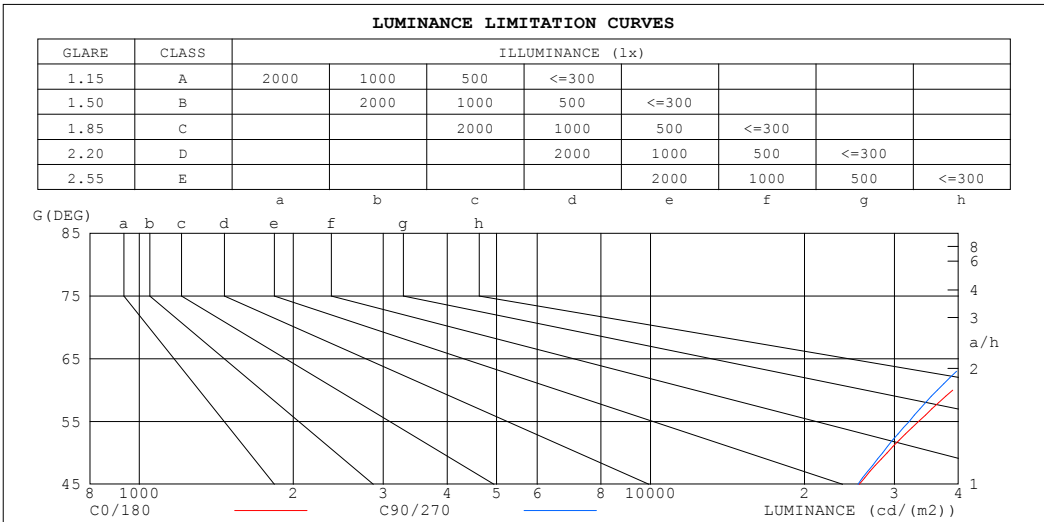
γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-SPEX500_V1 SYSTEM V2.00.453
Humidity:65.0%
Test Distance:3.090m [K=1.0000]
Remarks:

IES Indoor Report

Photometric Filename:HV5882T-18W-3000K.IES

LUMINANCE LIMITATION CURVES

Test:U:240.4V I:0.0808A P:18.4W PF:0.9461 Freq:49.99Hz		
UTHDi:0.16% ITHDi:17.07% KDisp:0.9629 Lamp Flux:2382.2x1 lm		
NAME: HV5882T-18W-3000K	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Havit Lighting	SUR.:	Shielding Angle:



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	72459	82604
80	55221	69394
75	53221	58644
70	50911	49944
65	45251	42198
60	39016	36398
55	33414	32042
50	29001	28455
45	25584	25463

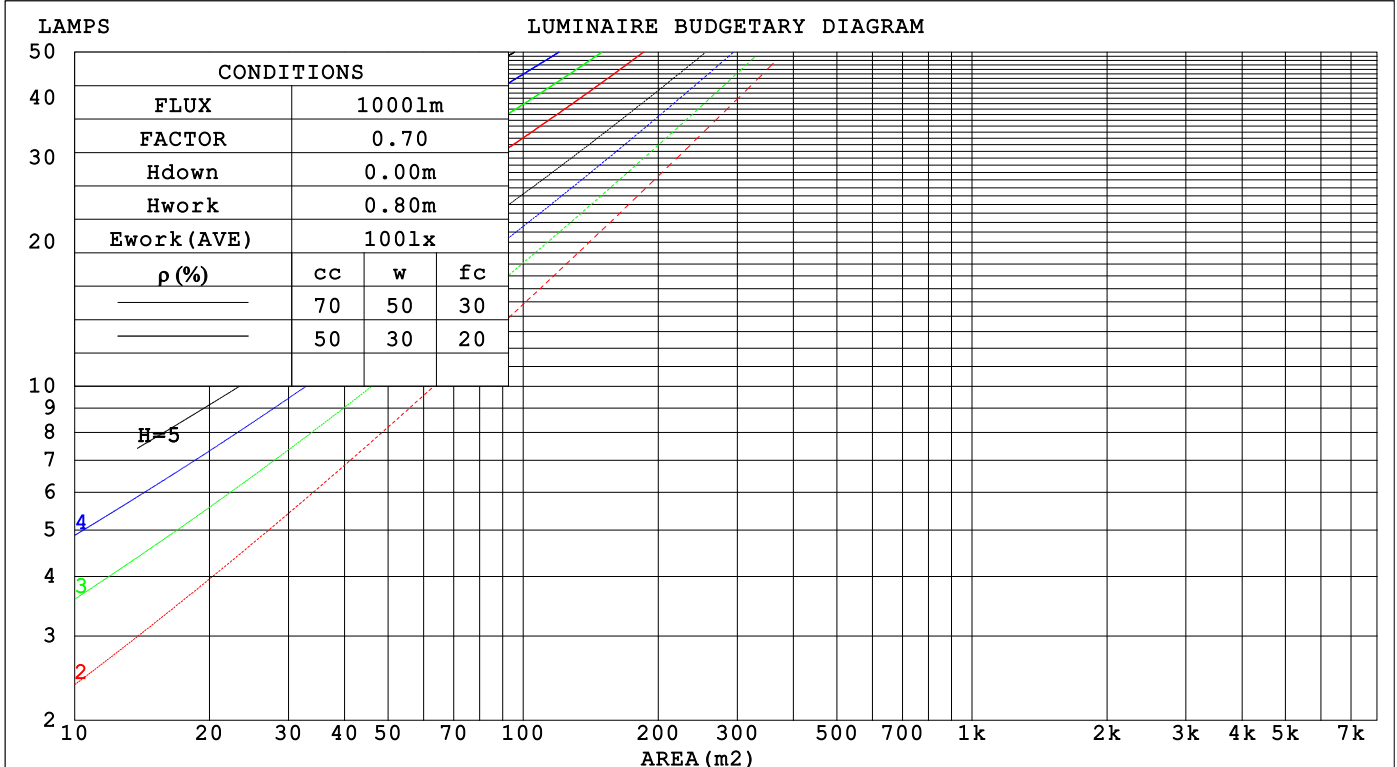
C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2023-09-12

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
Test System:EVERFINE GO-SPEX500_V1 SYSTEM V2.00.453
Humidity:65.0%
Test Distance:3.090m [K=1.0000]
Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:240.4V I:0.0808A P:18.4W PF:0.9461 Freq:49.99Hz		
UTHDi:0.16% ITHDi:17.07% KDisp:0.9629		Lamp Flux:2382.2x1 lm
NAME: HV5882T-18W-3000K	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Havit Lighting	SUR.:	Shielding Angle:

ρcc	80%			70%			50%			30%			10%			0
ρw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρfc	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	.97	.91	.86	.95	.90	.85	.91	.86	.82	.87	.83	.79	.83	.80	.77	.74
2.0	.81	.72	.65	.79	.71	.64	.75	.68	.62	.72	.66	.61	.69	.64	.59	.57
3.0	.69	.59	.51	.67	.58	.50	.64	.56	.49	.61	.54	.48	.58	.52	.47	.45
4.0	.60	.49	.41	.58	.48	.40	.55	.47	.40	.53	.45	.39	.50	.44	.38	.36
5.0	.52	.41	.34	.51	.41	.33	.49	.40	.33	.46	.39	.32	.44	.38	.32	.30
6.0	.46	.36	.28	.45	.35	.28	.43	.34	.28	.41	.33	.27	.40	.33	.27	.25
7.0	.41	.31	.24	.40	.31	.24	.39	.30	.24	.37	.29	.24	.36	.29	.23	.21
8.0	.37	.28	.21	.37	.27	.21	.35	.27	.21	.34	.26	.21	.32	.26	.20	.18
9.0	.34	.25	.19	.33	.24	.18	.32	.24	.18	.31	.24	.18	.30	.23	.18	.16
10.0	.31	.22	.17	.31	.22	.16	.29	.22	.16	.28	.21	.16	.27	.21	.16	.14



C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2023-09-12

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-SPEX500_V1 SYSTEM V2.00.453
Humidity:65.0%
Test Distance:3.090m [K=1.0000]
Remarks:

WEC AND CCEC

Test:U:240.4V I:0.0808A P:18.4W PF:0.9461 Freq:49.99Hz		
UTHDi:0.16% ITHDi:17.07% KDisp:0.9629 Lamp Flux:2382.2x1 lm		
NAME: HV5882T-18W-3000K	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Havit Lighting	SUR.:	Shielding Angle:

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	.433	.246	.078	.425	.243	.077	.412	.236	.075	.399	.230	.074	.387	.224	.072		
2.0	.380	.208	.064	.373	.206	.063	.361	.201	.062	.349	.196	.061	.338	.191	.060		
3.0	.337	.179	.054	.331	.177	.053	.320	.173	.053	.309	.169	.052	.300	.166	.051		
4.0	.301	.156	.046	.296	.155	.046	.286	.152	.045	.277	.149	.045	.268	.146	.044		
5.0	.271	.138	.040	.267	.137	.040	.258	.134	.040	.250	.132	.039	.242	.129	.039		
6.0	.247	.124	.035	.243	.123	.035	.235	.120	.035	.228	.118	.035	.221	.116	.035		
7.0	.226	.112	.032	.223	.111	.032	.216	.109	.031	.209	.107	.031	.203	.105	.031		
8.0	.208	.102	.029	.205	.101	.029	.199	.099	.028	.193	.098	.028	.188	.096	.028		
9.0	.193	.093	.026	.190	.093	.026	.185	.091	.026	.180	.090	.026	.175	.089	.026		
10.0	.180	.086	.024	.177	.086	.024	.172	.084	.024	.168	.083	.024	.163	.082	.024		

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	.189	.155	.125	.162	.133	.107	.111	.092	.074	.064	.053	.043	.020	.017	.014		
2.0	.184	.131	.087	.158	.113	.076	.108	.078	.053	.062	.046	.031	.020	.015	.010		
3.0	.177	.115	.065	.152	.099	.056	.104	.069	.039	.060	.040	.023	.019	.013	.008		
4.0	.170	.102	.051	.146	.088	.044	.100	.062	.031	.058	.036	.018	.019	.012	.006		
5.0	.162	.092	.041	.139	.080	.036	.096	.056	.025	.055	.033	.015	.018	.011	.005		
6.0	.154	.084	.034	.132	.073	.030	.091	.051	.021	.053	.030	.013	.017	.010	.004		
7.0	.146	.077	.029	.125	.067	.026	.087	.047	.018	.050	.028	.011	.016	.009	.004		
8.0	.138	.072	.026	.119	.062	.022	.082	.044	.016	.048	.026	.010	.016	.008	.003		
9.0	.131	.067	.023	.113	.058	.020	.078	.041	.014	.046	.024	.008	.015	.008	.003		
10.0	.125	.062	.021	.108	.054	.018	.075	.038	.013	.044	.023	.008	.014	.007	.003		

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2023-09-12

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-SPEX500_V1 SYSTEM V2.00.453
Humidity:65.0%
Test Distance:3.090m [K=1.0000]
Remarks:

UGR(Unified Glare Rating) Table

Test:U:240.4V I:0.0808A P:18.4W PF:0.9461 Freq:49.99Hz										
UTHDi:0.16% ITHDi:17.07% KDisp:0.9629 Lamp Flux:2382.2x1 lm										
NAME: HV5882T-18W-3000K					TYPE:			WEIGHT:		
SPEC.:					DIM.:			SERIAL No.:		
MFR.: Havit Lighting					SUR.:			Shielding Angle:		
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	25.8	27.6	26.0	27.8	28.0	25.5	27.3	25.8	27.5	27.8
3H	28.7	30.4	29.1	30.7	30.9	28.5	30.2	28.9	30.5	30.7
4H	30.0	31.6	30.3	31.9	32.2	30.0	31.6	30.4	31.9	32.2
6H	31.0	32.5	31.3	32.8	33.1	31.4	32.9	31.7	33.2	33.5
8H	31.4	32.9	31.8	33.2	33.5	31.9	33.4	32.3	33.7	34.0
12H	31.8	33.2	32.2	33.5	33.9	32.4	33.8	32.7	34.1	34.4
4H 2H	26.8	28.4	27.1	28.7	29.0	26.6	28.3	27.0	28.5	28.8
3H	29.9	31.3	30.3	31.7	32.0	29.8	31.2	30.1	31.5	31.8
4H	31.3	32.6	31.7	33.0	33.3	31.3	32.7	31.7	33.0	33.4
6H	32.4	33.6	32.8	34.0	34.4	32.8	34.0	33.2	34.4	34.8
8H	32.9	34.0	33.3	34.4	34.8	33.4	34.6	33.9	34.9	35.3
12H	33.4	34.4	33.8	34.8	35.2	33.9	35.0	34.4	35.4	35.8
8H 4H	31.9	33.0	32.3	33.4	33.8	31.9	33.1	32.3	33.4	33.8
6H	33.2	34.2	33.7	34.6	35.0	33.6	34.5	34.0	35.0	35.4
8H	33.8	34.7	34.3	35.1	35.6	34.3	35.2	34.8	35.6	36.1
12H	34.5	35.2	35.0	35.7	36.2	35.0	35.8	35.5	36.2	36.7
12H 4H	32.0	33.0	32.4	33.4	33.8	32.0	33.1	32.4	33.5	33.9
6H	33.4	34.3	33.9	34.7	35.2	33.7	34.6	34.2	35.0	35.5
8H	34.1	34.9	34.6	35.3	35.8	34.6	35.3	35.1	35.8	36.3
Variations with the observer position at spacings(CIE Pub.117):										
S = 1.0H	+ 0.1 / - 0.1					+ 0.1 / - 0.1				
1.5H	+ 0.2 / - 0.2					+ 0.2 / - 0.2				
2.0H	+ 0.2 / - 0.4					+ 0.2 / - 0.3				

CIE Pub.117, 2382 lm Total Lamp Luminous Flux Corrected (8log(F/F0) = 3.0)
Area: 0.025 m2

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2023-09-12

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-SPEX500_V1 SYSTEM V2.00.453
Humidity:65.0%
Test Distance:3.090m [K=1.0000]
Remarks:

UTILIZATION FACTORS TABLE

Test:U:240.4V I:0.0808A P:18.4W PF:0.9461 Freq:49.99Hz		
UTHDi:0.16% ITHDi:17.07% KDisp:0.9629 Lamp Flux:2382.2x1 lm		
NAME: HV5882T-18W-3000K	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Havit Lighting	SUR.:	Shielding Angle:

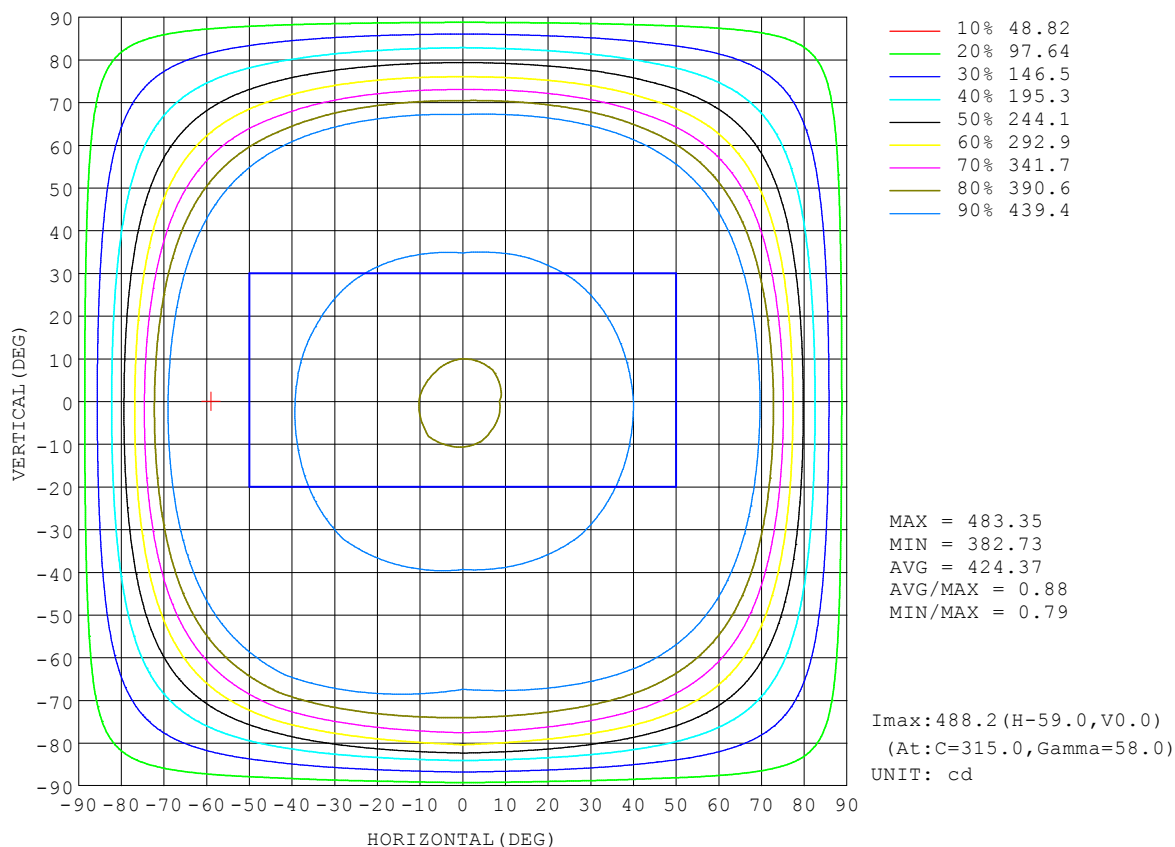
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	47	34	26	47	34	26	45	33	26	18
0.80	57	43	34	56	42	34	54	41	33	25
1.00	65	51	42	63	50	42	61	53	41	32
1.25	72	59	50	71	58	49	67	57	49	40
1.50	78	65	56	76	64	55	72	62	54	45
2.00	86	75	66	84	73	65	80	71	64	54
2.50	91	81	72	89	79	71	84	76	70	60
3.00	95	86	78	93	84	77	88	81	75	65
4.00	101	93	86	98	91	85	93	87	82	72
5.00	104	97	91	101	95	90	96	91	87	76
ROOM INDEX	UF (total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2023-09-12

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 γ Test System:EVERFINE GO-SPEX500_V1 SYSTEM V2.00.453
Humidity:65.0%
Test Distance:3.090m [K=1.0000]
Remarks:

ISOCANDELA DIAGRAM

Test:U:240.4V I:0.0808A P:18.4W PF:0.9461 Freq:49.99Hz UTHDi:0.16% ITHDi:17.07% KDisp:0.9629 Lamp Flux:2382.2x1 lm		
NAME: HV5882T-18W-3000K	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Havit Lighting	SUR.:	Shielding Angle:

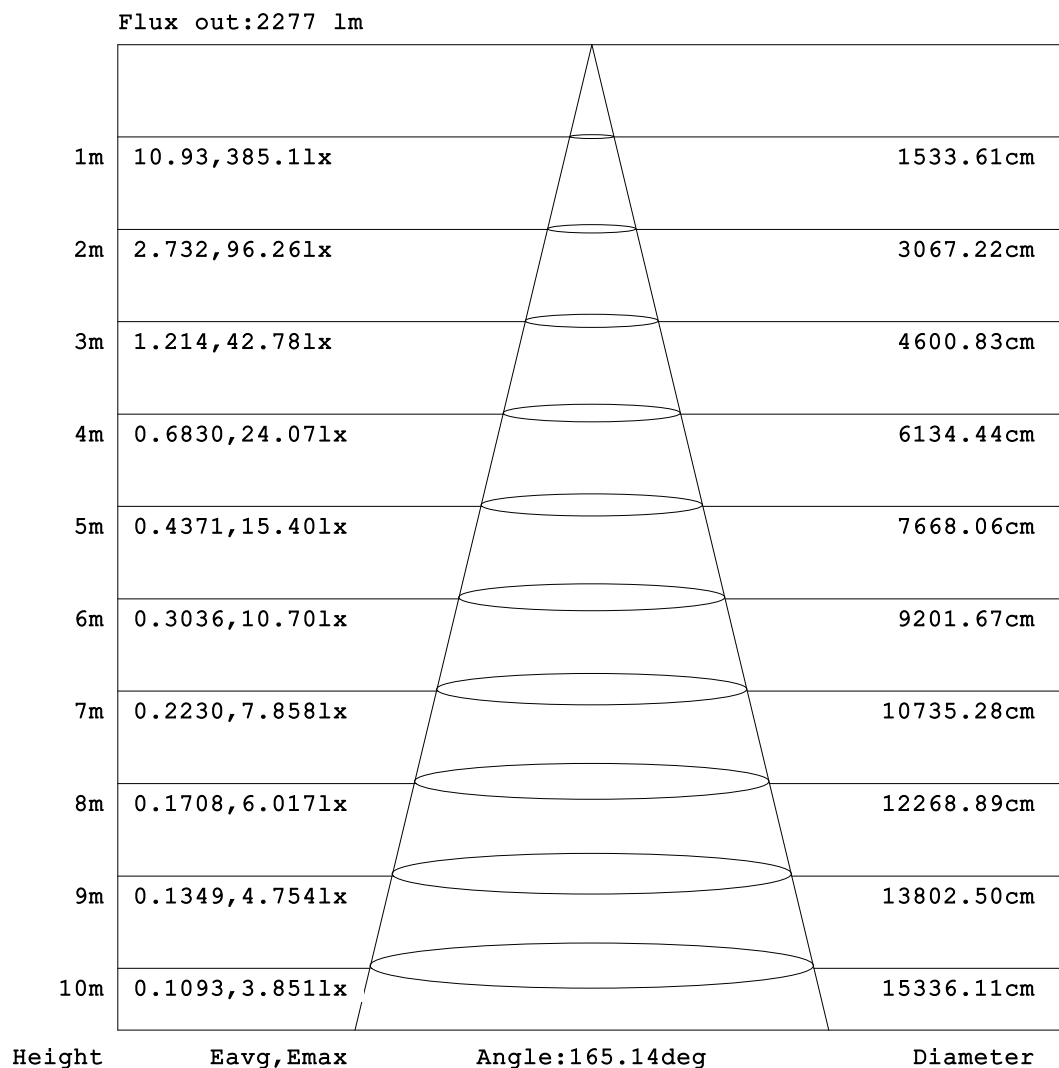


C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2023-09-12

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-SPEX500_V1 SYSTEM V2.00.453
Humidity:65.0%
Test Distance:3.090m [K=1.0000]
Remarks:

AAI Figure

Test:U:240.4V I:0.0808A P:18.4W PF:0.9461 Freq:49.99Hz		
UTHDi:0.16% ITHDi:17.07% KDisp:0.9629 Lamp Flux:2382.2x1 lm		
NAME: HV5882T-18W-3000K	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Havit Lighting	SUR.:	Shielding Angle:



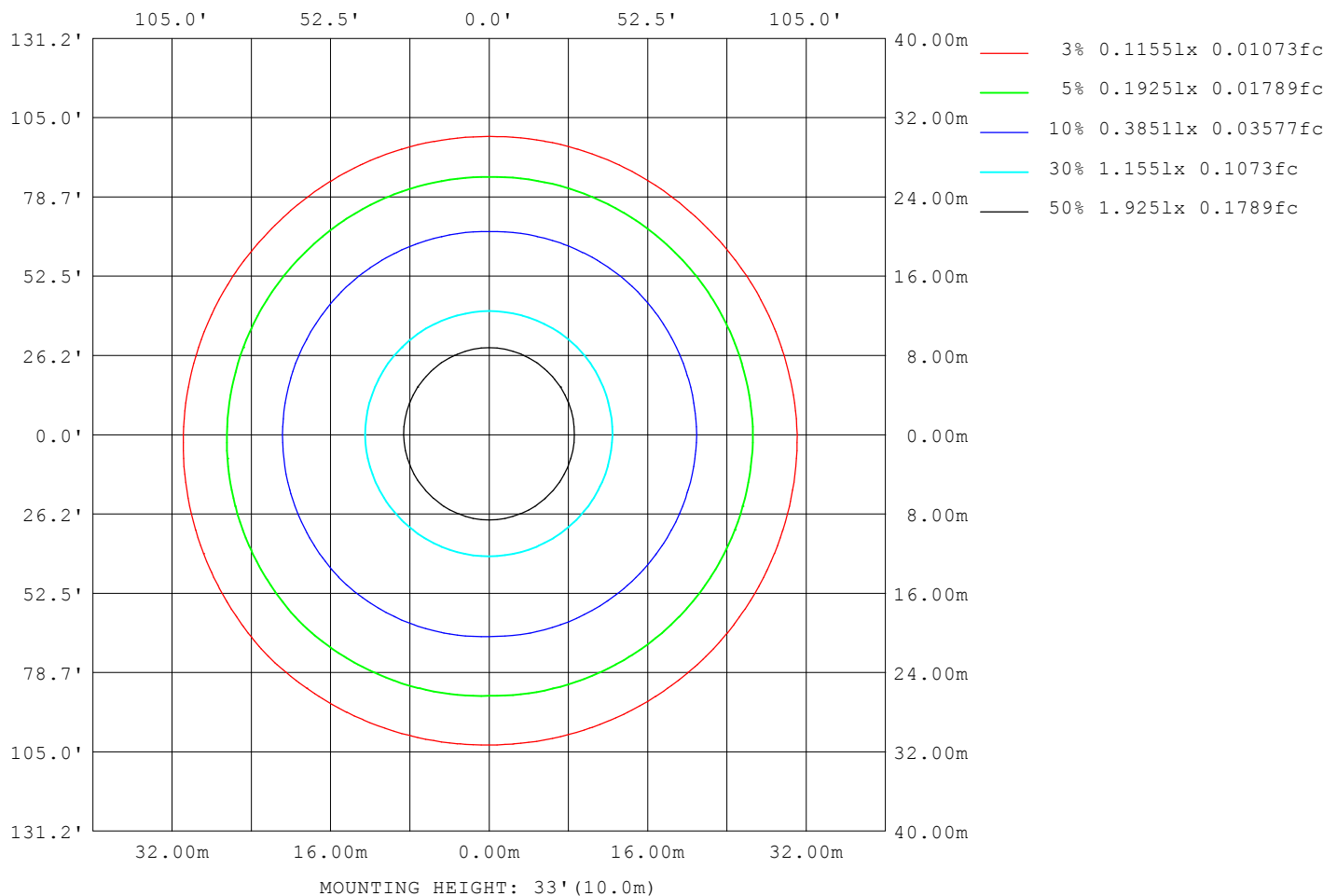
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2023-09-12

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-SPEX500_V1 SYSTEM V2.00.453
Humidity:65.0%
Test Distance:3.090m [K=1.0000]
Remarks:

ISOLUX DIAGRAM

Test:U:240.4V I:0.0808A P:18.4W PF:0.9461 Freq:49.99Hz		
UTHDi:0.16% ITHDi:17.07% KDisp:0.9629 Lamp Flux:2382.2x1 lm		
NAME: HV5882T-18W-3000K	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Havit Lighting	SUR.:	Shielding Angle:



C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2023-09-12

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-SPEX500_V1 SYSTEM V2.00.453
 Humidity:65.0%
 Test Distance:3.090m [K=1.0000]
 Remarks:

LED Avg.L Report

Test:U:240.4V I:0.0808A P:18.4W PF:0.9461 Freq:49.99Hz UTHDi:0.16% ITHDi:17.07% KDisp:0.9629 Lamp Flux:2382.2x1 lm		
NAME: HV5882T-18W-3000K	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Havit Lighting	SUR.:	Shielding Angle:

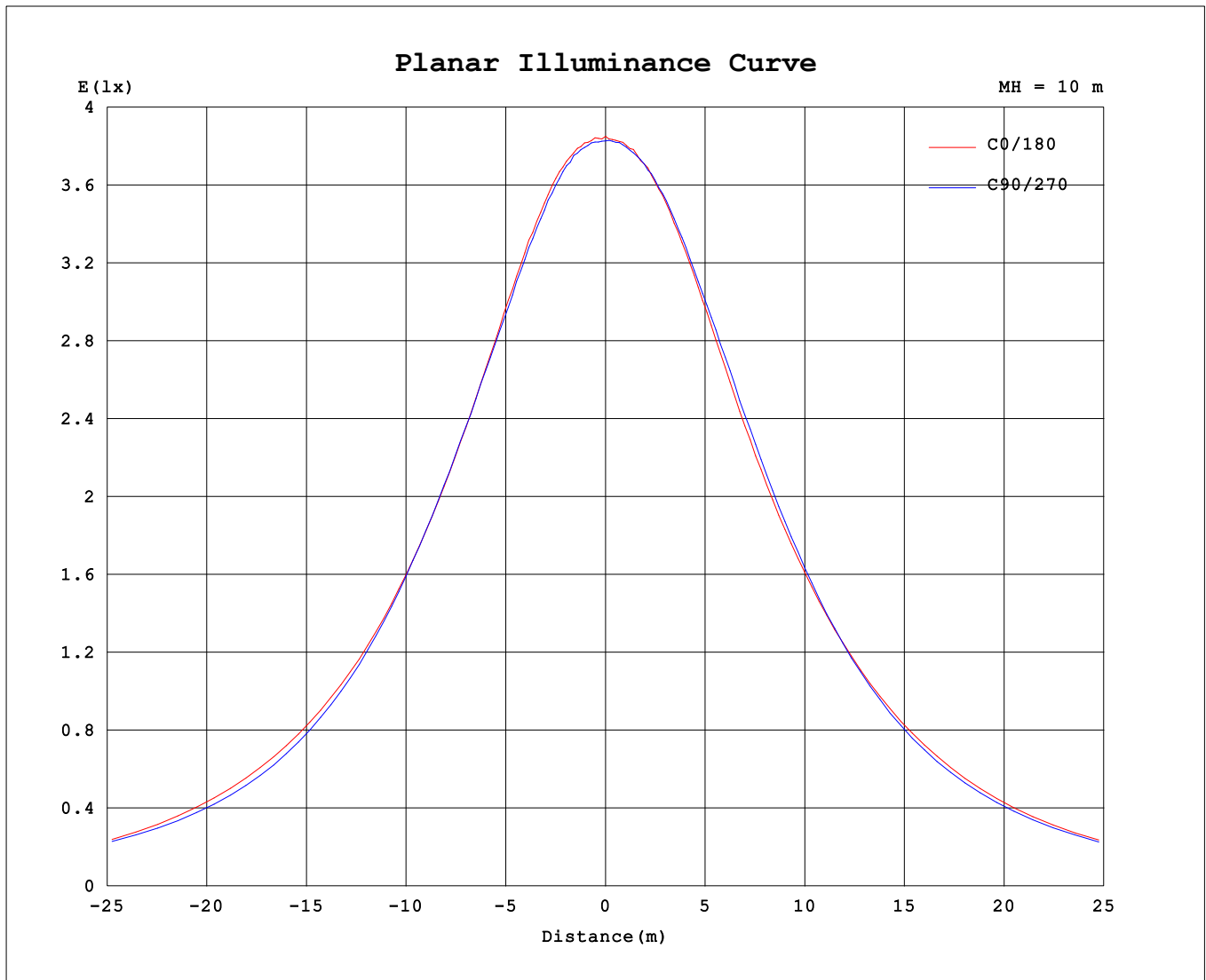
AvgL	cd/m2
L_0~180 (65) av	44837
L_0~180 (75) av	52115
L_0~180 (85) av	71439
L_90~270 (65) av	42591
L_90~270 (75) av	53225
L_90~270 (85) av	78806
L_45 (65) av	44458
L_45 (75) av	53083
L_45 (85) av	73475

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2023-09-12

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-SPEX500_V1 SYSTEM V2.00.453
Humidity:65.0%
Test Distance:3.090m [K=1.0000]
Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2023-09-12

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
Test System:EVERFINE GO-SPEX500_V1 SYSTEM V2.00.453
Humidity:65.0%
Test Distance:3.090m [K=1.0000]
Remarks:

Test:U:240.4V I:0.0808A P:18.4W PF:0.9461 Freq:49.99Hz UTHDi:0.16% ITHDi:17.07% KDisp:0.9629 Lamp Flux:2382.2x1 lm		
NAME: HV5882T-18W-3000K	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Havit Lighting	SUR.:	Shielding Angle:

UNIT: cd

[illegible]

```

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-SPEX500_V1 SYSTEM V2.00.453
Humidity:65.0%
Test Distance:3.090m [K=1.0000]
Remarks:

```