

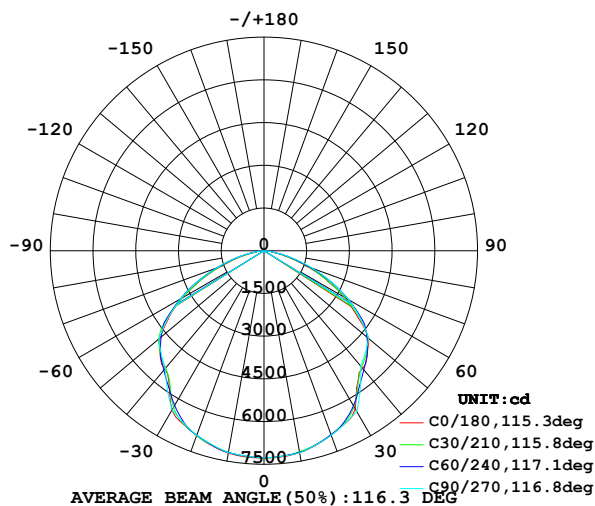
EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

LUMINAIRE PHOTOMETRIC TEST REPORT

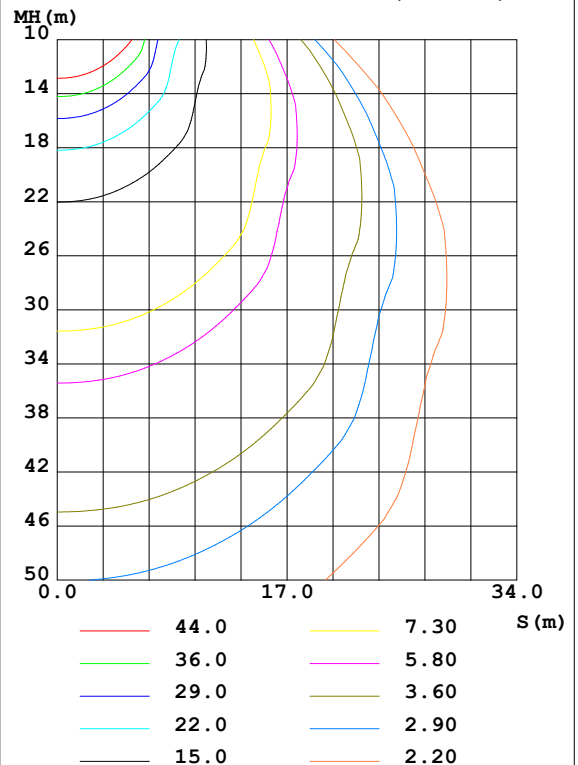
Test:U:219.9V I:0.6912A P:149.8W PF:0.9803 Lamp Flux:20735.3x1 lm		
NAME: HB15-150W NW	TYPE:	WEIGHT:7.2KG
SPEC.:	DIM.: $\phi 460 \times 178\text{mm}$	SERIAL No.:1
MFR.:	SUR.: $\phi 380\text{mm}$	PROTECTION ANGLE:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 138.40 lm/W			
MODEL	HB15-150W	I _{max} (cd)	7276	S/MH (C0/180)	1.27
NOMINAL POWER (W)	150	LOR (%)	100.0	S/MH (C90/270)	1.30
RATED VOLTAGE (V)	220	TOTAL FLUX (lm)	20735	η UP, DN (C0-180)	0.0, 50.0
NOMINAL FLUX (lm)	20735.3	CIE CLASS	DIRECT	η UP, DN (C180-360)	0.0, 50.0
LAMPS INSIDE	1	η up (%)	0.0	CIBSE SHR NOM	1.25
TEST VOLTAGE (V)	220	η down (%)	100.0	CIBSE SHR MAX	1.35

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators:
 Test Date: 2020-11-27

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.290
 Humidity: 65.0%
 Test Distance: 11.677m [K=0.9829]
 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
5	7268	7244	7238	7239	7261	7241	7243	7247	0- 5	173.5	173.5	0.84,0.84
10	7211	7185	7200	7171	7195	7174	7209	7189	5- 10	516.4	689.9	3.33,3.33
15	7084	7076	7050	7057	7063	7058	7054	7079	10- 15	845.1	1535	7.4,7.4
20	6913	6897	6900	6885	6891	6871	6899	6892	15- 20	1149	2684	12.9,12.9
25	6714	6722	6678	6730	6709	6691	6707	6714	20- 25	1424	4108	19.8,19.8
30	6462	6379	6455	6322	6407	6359	6515	6403	25- 30	1656	5764	27.8,27.8
35	5807	5819	5922	5777	5718	5784	5898	5846	30- 35	1793	7558	36.4,36.4
40	5397	5387	5389	5470	5394	5328	5281	5366	35- 40	1865	9423	45.4,45.4
45	5161	5132	5105	5196	5120	5075	5039	5101	40- 45	1951	11374	54.9,54.9
50	4771	4835	4821	4816	4805	4754	4798	4796	45- 50	2001	13375	64.5,64.5
55	4067	4176	4108	4046	3998	4122	4120	4189	50- 55	1940	15315	73.9,73.9
60	3343	3350	3396	3277	3253	3341	3442	3432	55- 60	1723	17038	82.2,82.2
65	2455	2530	2576	2528	2409	2535	2628	2583	60- 65	1426	18464	89,89
70	1647	1728	1756	1735	1586	1750	1813	1812	65- 70	1073	19536	94.2,94.2
75	908.0	955.4	1091	961.2	887.7	938.1	1105	982.3	70- 75	704.2	20241	97.6,97.6
80	363.7	458.3	425.7	464.4	339.5	430.5	395.9	457.5	75- 80	368.4	20609	99.4,99.4
85	75.96	82.41	0	84.09	79.41	69.92	0	71.78	80- 85	118.2	20727	100,100
90	22.05	0	0	0	28.30	0	0	0	85- 90	8.189	20735	100,100
95									90- 95			
100									95-100			
105									100-105			
110									105-110			
115									110-115			
120									115-120			
125									120-125			
130									125-130			
135									130-135			
140									135-140			
145									140-145			
150									145-150			
155									150-155			
160									155-160			
165									160-165			
170									165-170			
175									170-175			
180									175-180			
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:2020-11-27

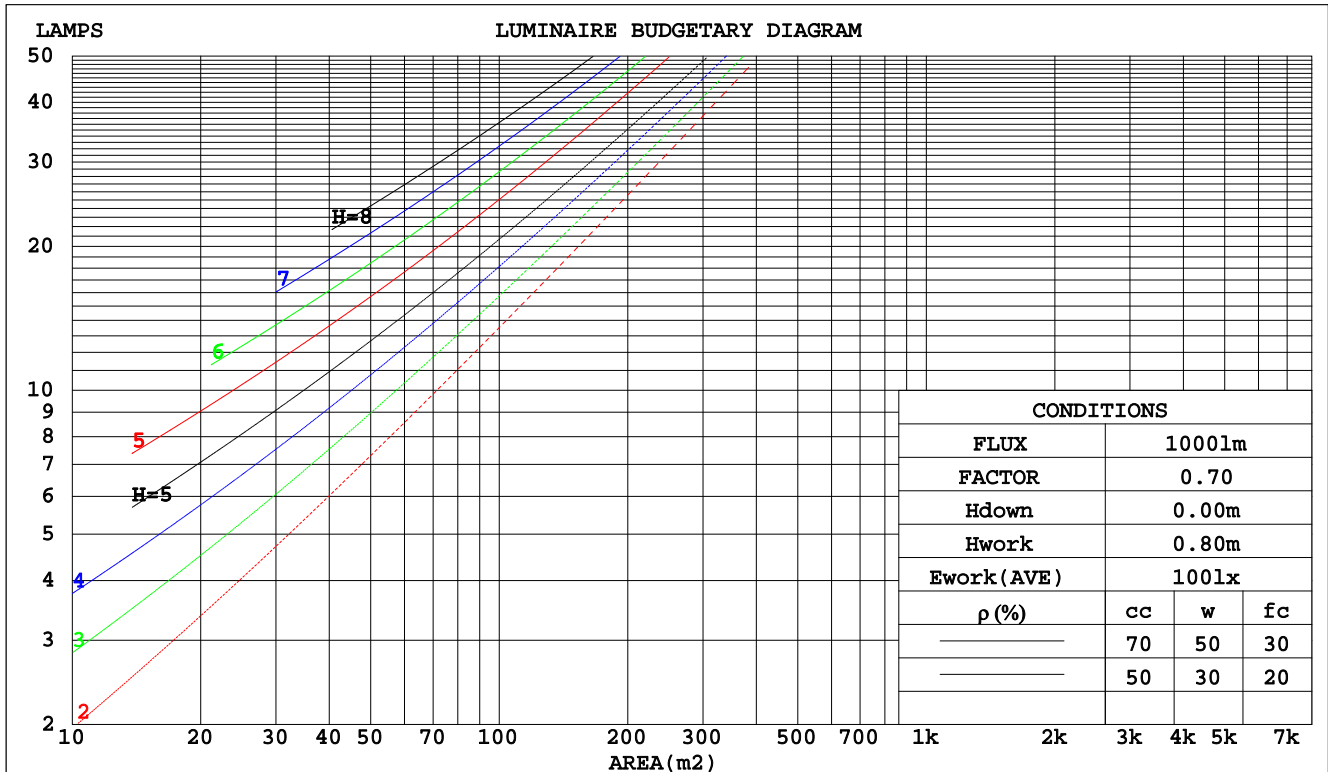
γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 γ Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.290
 Humidity:65.0%
 Test Distance:11.677m [K=0.9829]
 Remarks:

EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:219.9V I:0.6912A P:149.8W PF:0.9803 Lamp Flux:20735.3x1 lm		
NAME: HB15-150W NW	TYPE:	WEIGHT:7.2KG
SPEC.:	DIM.: $\phi 460 \times 178\text{mm}$	SERIAL No.:1
MFR.:	SUR.: $\phi 380\text{mm}$	PROTECTION ANGLE:

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	1.05	1.01	.97	1.03	.99	.96	.99	.96	.93	.95	.92	.90	.91	.89	.87	.85
2.0	.92	.85	.80	.90	.84	.79	.86	.81	.77	.83	.79	.75	.80	.77	.74	.71
3.0	.81	.73	.66	.79	.72	.66	.76	.70	.65	.73	.68	.63	.71	.66	.62	.60
4.0	.71	.63	.56	.70	.62	.56	.68	.61	.55	.65	.59	.54	.63	.58	.54	.51
5.0	.64	.55	.48	.63	.54	.48	.61	.53	.47	.59	.52	.47	.57	.51	.46	.44
6.0	.57	.48	.42	.56	.48	.42	.55	.47	.42	.53	.46	.41	.51	.45	.41	.39
7.0	.52	.43	.37	.51	.43	.37	.50	.42	.37	.48	.41	.36	.47	.41	.36	.34
8.0	.47	.39	.33	.47	.39	.33	.45	.38	.33	.44	.37	.32	.43	.37	.32	.30
9.0	.43	.35	.30	.43	.35	.30	.42	.34	.29	.41	.34	.29	.40	.34	.29	.27
10.0	.40	.32	.27	.39	.32	.27	.38	.31	.27	.38	.31	.27	.37	.31	.26	.25



C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:2020-11-27

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.290
 Humidity:65.0%
 Test Distance:11.677m [K=0.9829]
 Remarks:

EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

WEC AND CCEC

Test:U:219.9V I:0.6912A P:149.8W PF:0.9803 Lamp Flux:20735.3x1 lm								
NAME: HB15-150W NW				TYPE:			WEIGHT:7.2KG	
SPEC.:				DIM.: φ460*178mm			SERIAL No.:1	
MFR.:				SUR.:φ380mm			PROTECTION 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						Wall Exitance Coefficients(WEC)									
0.0																
1.0	.288	.164	.052	.281	.161	.051	.268	.154	.049	.256	.148	.047	.245	.142	.046	
2.0	.279	.153	.047	.273	.150	.046	.261	.145	.045	.250	.140	.044	.240	.136	.043	
3.0	.262	.139	.042	.256	.137	.041	.246	.133	.040	.236	.130	.040	.228	.126	.039	
4.0	.244	.127	.037	.239	.125	.037	.230	.122	.036	.221	.119	.036	.213	.116	.035	
5.0	.226	.115	.033	.222	.114	.033	.214	.111	.033	.207	.109	.032	.200	.107	.032	
6.0	.211	.106	.030	.207	.105	.030	.200	.102	.030	.193	.100	.029	.187	.098	.029	
7.0	.197	.097	.028	.193	.096	.027	.187	.095	.027	.181	.093	.027	.175	.091	.027	
8.0	.184	.090	.025	.181	.089	.025	.175	.088	.025	.170	.086	.025	.165	.085	.025	
9.0	.173	.084	.023	.170	.083	.023	.165	.082	.023	.160	.080	.023	.155	.079	.023	
10.0	.163	.078	.022	.160	.077	.022	.156	.076	.021	.151	.075	.021	.147	.074	.021	

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						Ceiling Cavity Exitance Coefficients(CCEC)									
0.0	.190	.190	.190	.163	.163	.163	.111	.111	.111	.064	.064	.064	.020	.020	.020	
1.0	.179	.156	.136	.153	.134	.117	.105	.092	.081	.060	.053	.047	.019	.017	.015	
2.0	.170	.132	.100	.146	.114	.086	.100	.079	.060	.058	.046	.035	.019	.015	.011	
3.0	.163	.114	.075	.140	.099	.065	.096	.068	.046	.055	.040	.027	.018	.013	.009	
4.0	.155	.101	.059	.133	.087	.051	.092	.061	.036	.053	.036	.021	.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	.046	.027	.012	.015	.009	.004	
8.0	.128	.069	.029	.110	.060	.025	.076	.042	.018	.044	.025	.011	.014	.008	.004	
9.0	.122	.064	.025	.105	.056	.022	.073	.039	.016	.043	.023	.009	.014	.008	.003	
10.0	.117	.060	.023	.101	.052	.020	.070	.037	.014	.041	.022	.008	.013	.007	.003	

C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:2020-11-27

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.290
 Humidity:65.0%
 Test Distance:11.677m [K=0.9829]
 Remarks:

EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

UGR(Unified Glare Rating) Table

Test:U:219.9V I:0.6912A P:149.8W PF:0.9803 Lamp Flux:20735.3x1 lm											
NAME: HB15-150W NW					TYPE:			WEIGHT:7.2KG			
SPEC.:					DIM.: $\varnothing 460*178\text{mm}$			SERIAL No.:1			
MFR.:					SUR.: $\varnothing 380\text{mm}$			PROTECTION 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	27.4	28.9	27.7	29.1	29.4	27.6	29.1	27.8	29.3	29.5	
	3H	28.5	29.9	28.8	30.1	30.4	28.7	30.1	29.0	30.4	30.6
	4H	28.8	30.1	29.1	30.3	30.6	29.1	30.4	29.4	30.7	30.9
	6H	28.8	30.1	29.2	30.3	30.6	29.2	30.5	29.6	30.7	31.0
	8H	28.8	30.0	29.1	30.3	30.6	29.2	30.4	29.6	30.7	31.0
	12H	28.8	29.9	29.1	30.2	30.5	29.2	30.3	29.5	30.6	30.9
4H	2H	28.0	29.3	28.3	29.5	29.8	28.1	29.4	28.4	29.6	29.9
	3H	29.2	30.3	29.5	30.6	30.9	29.4	30.5	29.7	30.8	31.1
	4H	29.5	30.6	29.9	30.9	31.2	29.8	30.9	30.2	31.2	31.5
	6H	29.6	30.5	30.0	30.9	31.3	30.0	31.0	30.4	31.3	31.7
	8H	29.6	30.5	30.0	30.8	31.2	30.1	30.9	30.5	31.3	31.7
	12H	29.6	30.4	30.0	30.8	31.2	30.0	30.8	30.4	31.2	31.6
8H	4H	29.6	30.5	30.0	30.8	31.2	29.9	30.8	30.4	31.2	31.5
	6H	29.8	30.5	30.2	30.9	31.3	30.2	30.9	30.6	31.3	31.7
	8H	29.8	30.4	30.3	30.9	31.3	30.2	30.9	30.7	31.3	31.7
	12H	29.8	30.3	30.3	30.8	31.3	30.2	30.7	30.7	31.2	31.7
12H	4H	29.6	30.4	30.0	30.8	31.2	29.9	30.7	30.3	31.1	31.5
	6H	29.8	30.4	30.3	30.8	31.3	30.2	30.8	30.7	31.2	31.7
	8H	29.8	30.4	30.3	30.8	31.3	30.2	30.8	30.7	31.2	31.7
Variations with the observer position at spacings:											
S = 1.0H	+ 0.2 / - 0.3					+ 0.2 / - 0.3					
1.5H	+ 0.4 / - 0.6					+ 0.3 / - 0.5					
2.0H	+ 0.5 / - 0.4					+ 0.4 / - 0.5					

CIE Pub.117 Corrected 20735 lm Total Lamp Luminous Flux.(8log(F/F0) = 10.5)

C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:2020-11-27

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.290
 Humidity:65.0%
 Test Distance:11.677m [K=0.9829]
 Remarks:

EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

UTILIZATION FACTORS TABLE

Test:U:219.9V I:0.6912A P:149.8W PF:0.9803 Lamp Flux:20735.3x1 lm		
NAME: HB15-150W NW	TYPE:	WEIGHT:7.2KG
SPEC.:	DIM.: $\varnothing 460 \times 178 \text{mm}$	SERIAL No.:1
MFR.:	SUR.: $\varnothing 380 \text{mm}$	PROTECTION 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	58	46	39	57	46	39	56	45	39	32
0.80	68	56	49	67	56	49	65	55	49	42
1.00	77	66	59	76	65	58	73	67	58	51
1.25	84	74	67	83	73	67	80	72	66	59
1.50	89	80	73	88	79	72	85	77	71	64
2.00	96	88	82	94	87	81	91	85	79	72
2.50	100	93	87	98	91	86	94	88	84	76
3.00	103	97	92	101	95	90	97	92	88	80
4.00	107	102	97	105	100	96	101	97	93	85
5.00	109	105	101	107	103	100	103	99	96	87
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:2020-11-27

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.290
 Humidity:65.0%
 Test Distance:11.677m [K=0.9829]
 Remarks:

EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

ISOCANDELA DIAGRAM

Test:U:219.9V I:0.6912A P:149.8W PF:0.9803 Lamp Flux:20735.3x1 lm		
NAME: HB15-150W NW	TYPE:	WEIGHT:7.2KG
SPEC.:	DIM.: $\phi 460 \times 178\text{mm}$	SERIAL No.:1
MFR.:	SUR.: $\phi 380\text{mm}$	PROTECTION ANGLE:

Conical surface Flux(90deg):

11374 lm

%lum = 54.9%

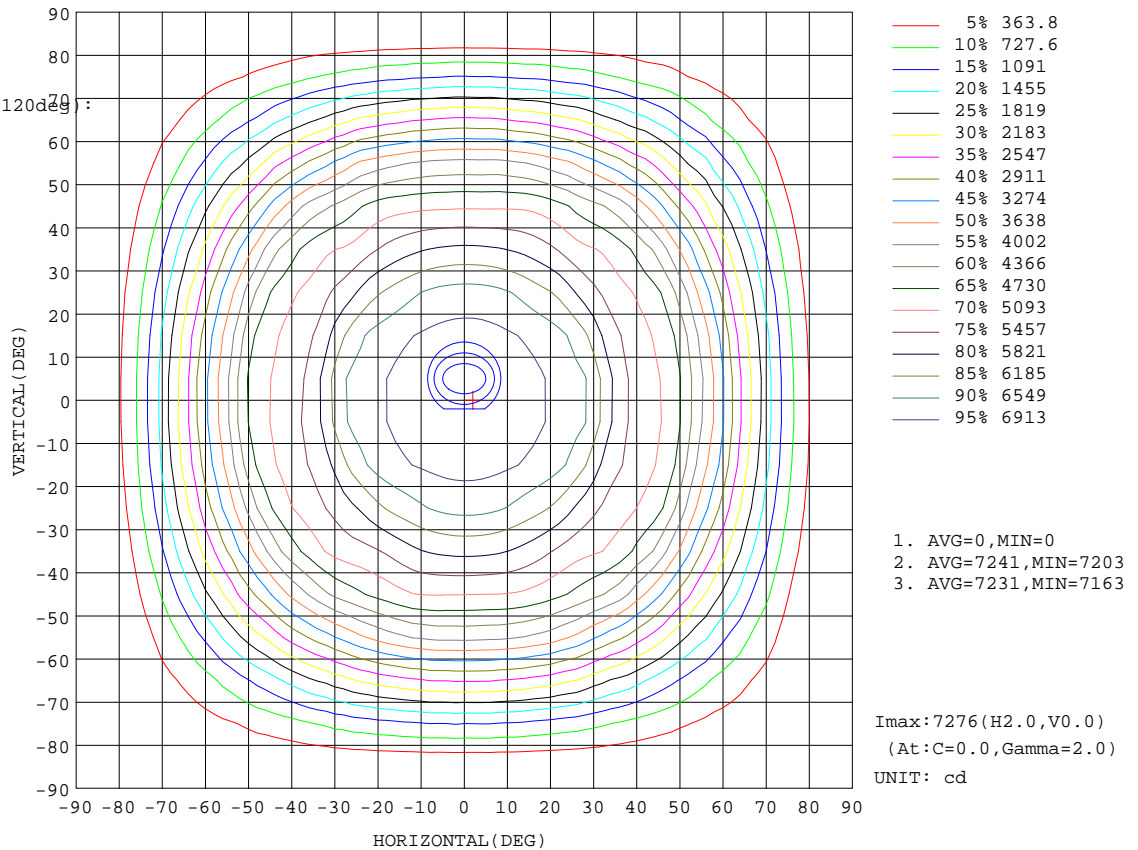
%lamp = 54.9%

Conical surface Flux(120deg):

17038 lm

%lum = 82.2%

%lamp = 82.2%



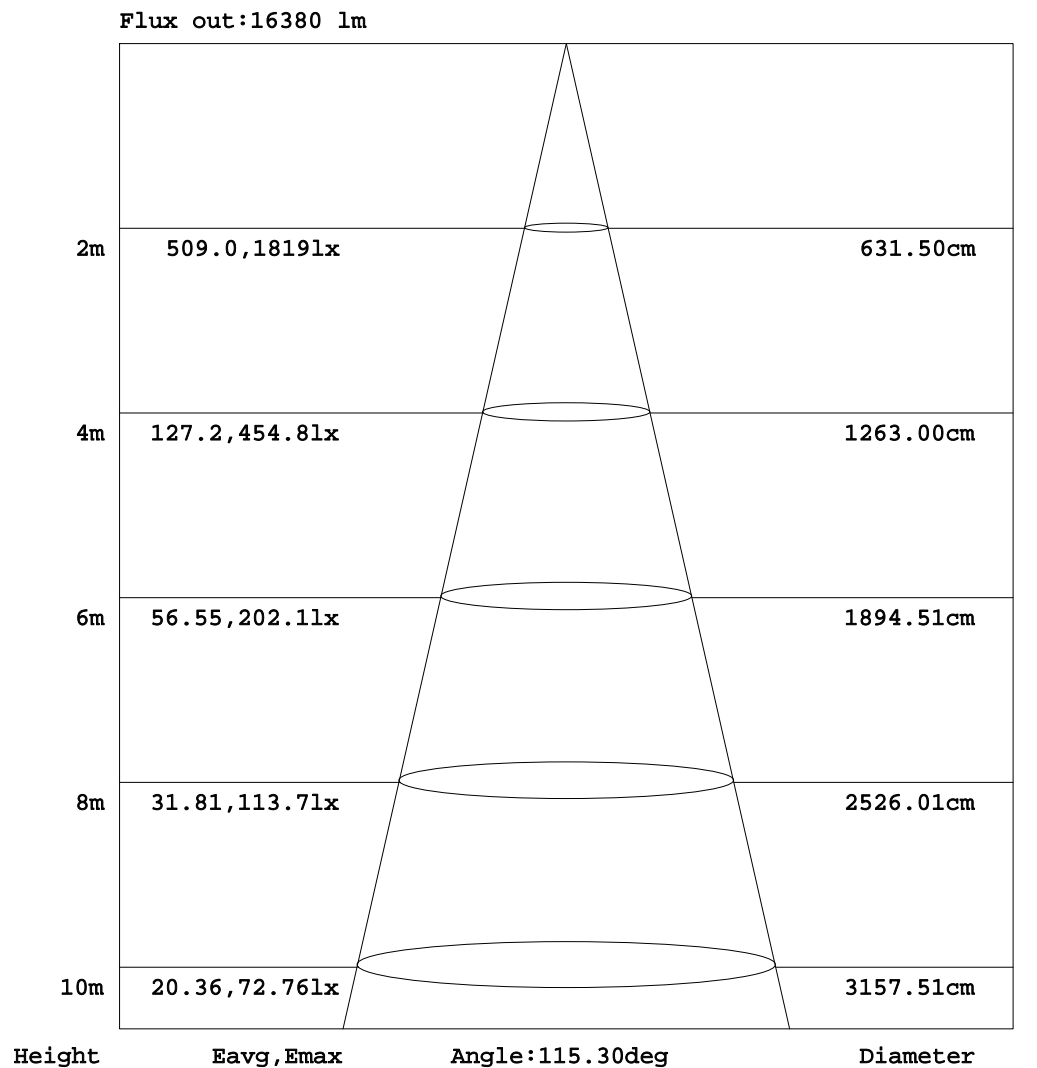
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2020-11-27

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.290
Humidity:65.0%
Test Distance:11.677m [K=0.9829]
Remarks:

EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

AAI Figure

Test:U:219.9V I:0.6912A P:149.8W PF:0.9803 Lamp Flux:20735.3x1 lm		
NAME: HB15-150W NW	TYPE:	WEIGHT:7.2KG
SPEC.:	DIM.: $\phi 460 \times 178\text{mm}$	SERIAL No.:1
MFR.:	SUR.: $\phi 380\text{mm}$	PROTECTION ANGLE:



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

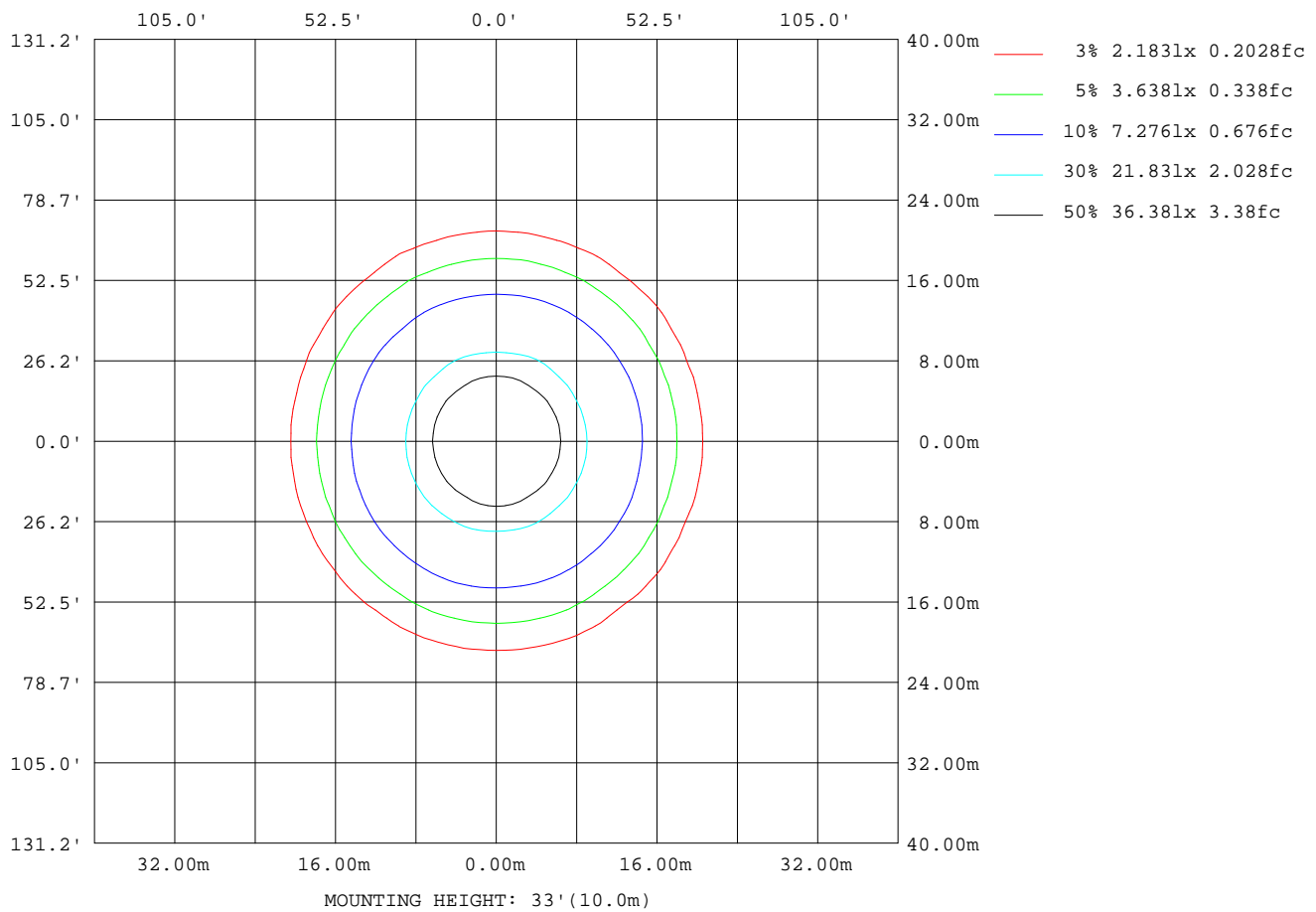
C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:2020-11-27

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.290
 Humidity:65.0%
 Test Distance:11.677m [K=0.9829]
 Remarks:

EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

ISOLUX DIAGRAM

Test:U:219.9V I:0.6912A P:149.8W PF:0.9803 Lamp Flux:20735.3x1 lm		
NAME: HB15-150W NW	TYPE:	WEIGHT:7.2KG
SPEC.:	DIM.: $\phi 460 \times 178\text{mm}$	SERIAL No.:1
MFR.:	SUR.: $\phi 380\text{mm}$	PROTECTION ANGLE:



C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators:
 Test Date: 2020-11-27

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.290
 Humidity: 65.0%
 Test Distance: 11.677m [K=0.9829]
 Remarks:

LED Avg.L Report

Test:U:219.9V I:0.6912A P:149.8W PF:0.9803 Lamp Flux:20735.3x1 lm		
NAME: HB15-150W NW	TYPE:	WEIGHT:7.2KG
SPEC.:	DIM.: $\phi 460 \times 178\text{mm}$	SERIAL No.:1
MFR.:	SUR.: $\phi 380\text{mm}$	PROTECTION ANGLE:

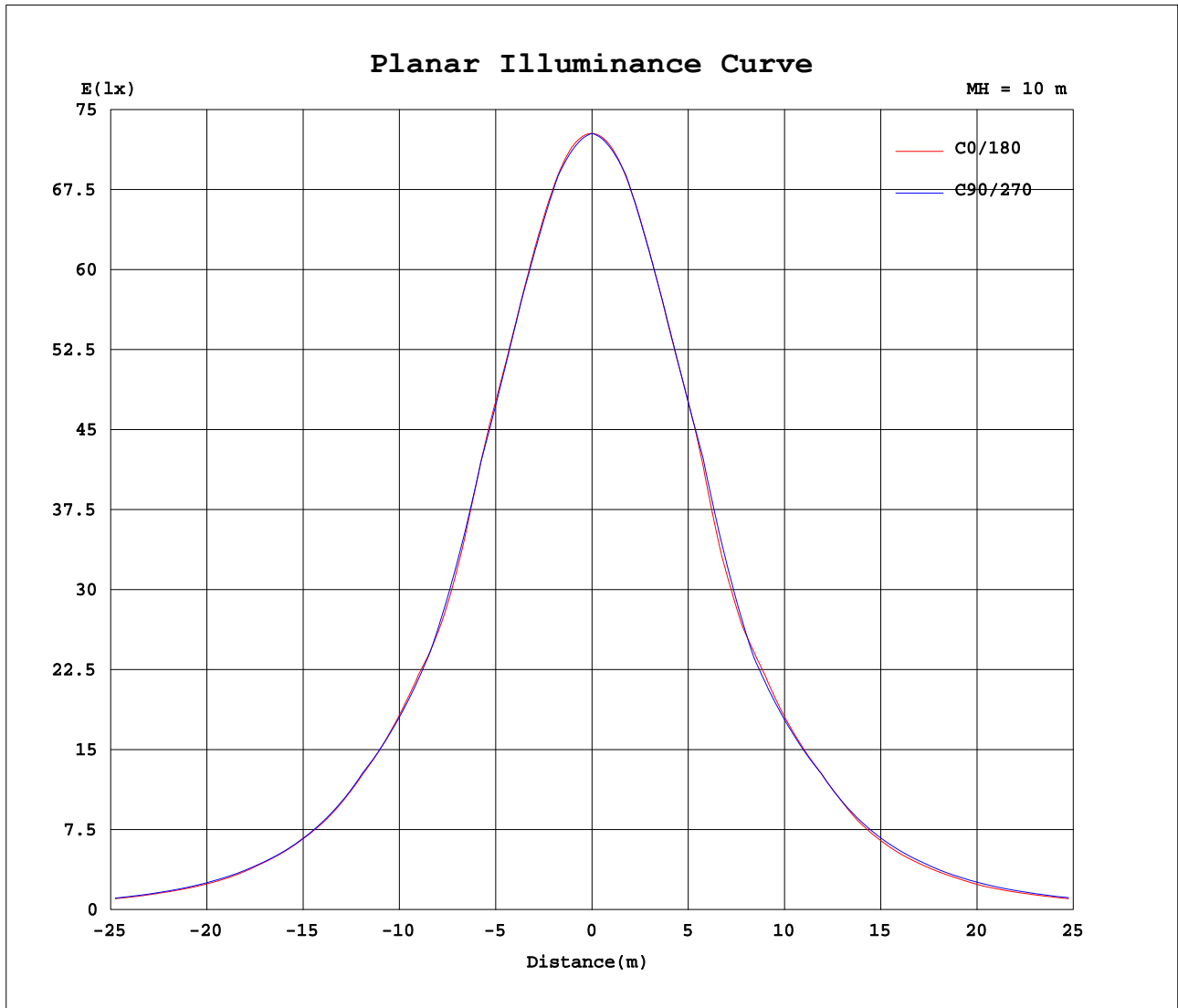
AvgL	cd/m2
L_0~180 (65) av	52316
L_0~180 (75) av	31537
L_0~180 (85) av	8103
L_90~270 (65) av	55970
L_90~270 (75) av	38559
L_90~270 (85) av	0
L_45 (65) av	54723
L_45 (75) av	33693
L_45 (85) av	8037

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2020-11-27

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.290
Humidity:65.0%
Test Distance:11.677m [K=0.9829]
Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators:
 Test Date: 2020-11-27

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.290
 Humidity: 65.0%
 Test Distance: 11.677m [K=0.9829]
 Remarks: