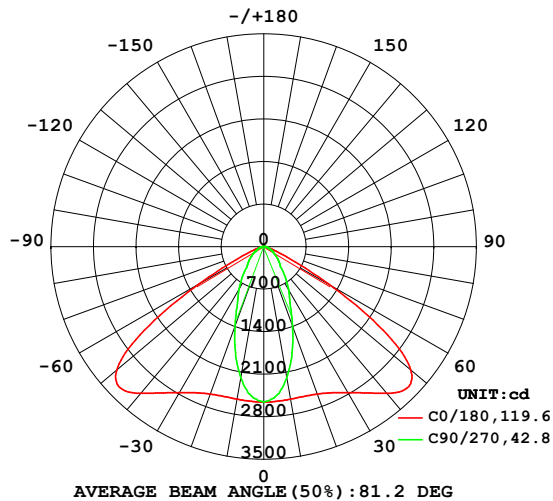


LUMINAIRE PHOTOMETRIC TEST REPORT

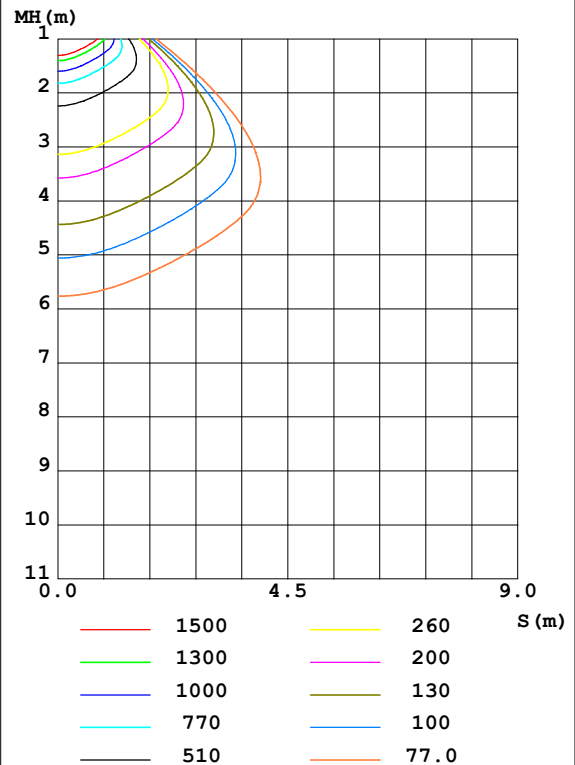
Test:U:230.0V I:0.1367A P:29.99W PF:0.9539 Lamp Flux:4532.17x1 lm					
NAME: LHB01-30H		TYPE:30W		WEIGHT:	
SPEC.:5000K Ra70 L06404		DIM.: 0.28*0.137*0.102		SERIAL No.:	
MFR.:		SUR.:0.25*0.1		Shielding Angle:	

DATA OF LAMP		PHOTOMETRIC DATA Eff: 151.11 lm/W			
MODEL	LHB01-30H	I _{max} (cd)	3315	S/MH (C0/180)	1.85
NOMINAL POWER(W)	30	LOR(%)	100.0	S/MH (C90/270)	0.68
RATED VOLTAGE(V)	230	TOTAL FLUX (lm)	4532.2	η UP,DN (C0-180)	0.0,50.2
NOMINAL FLUX(lm)	4532.17	CIE CLASS	DIRECT	η UP,DN (C180-360)	0.0,49.8
LAMPS INSIDE	1	η up (%)	0.0	CIBSE SHR NOM	0.75
TEST VOLTAGE (V)	230	η down (%)	100.0	CIBSE SHR MAX	0.85

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: 2017-09-26

Checker:

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.295
 Humidity: 65.0%
 Test Distance: 9.500m [K=1.0000]
 Remarks:

Assessor:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum,lamp
5	2554	2500	2458	2500	2554	2498	2458	2498	0- 5	60.38	60.38	1.33,1.33
10	2548	2361	2190	2361	2548	2355	2190	2355	5- 10	173.9	234.3	5.17,5.17
15	2552	2137	1808	2137	2552	2128	1808	2128	10- 15	267.6	501.9	11.1,11.1
20	2582	1867	1387	1867	2582	1855	1387	1855	15- 20	335.1	837.0	18.5,18.5
25	2653	1565	1031	1565	2653	1554	1031	1554	20- 25	377.8	1215	26.8,26.8
30	2772	1265	821.1	1265	2772	1258	821.1	1258	25- 30	406.4	1621	35.8,35.8
35	2939	1026	627.3	1026	2939	1023	627.3	1023	30- 35	430.9	2052	45.3,45.3
40	3150	867.4	433.5	867.4	3150	864.1	433.5	864.1	35- 40	448.8	2501	55.2,55.2
45	3311	684.1	360.5	684.1	3311	680.3	360.5	680.3	40- 45	461.3	2962	65.4,65.4
50	3160	467.2	287.5	467.2	3160	464.1	287.5	464.1	45- 50	462.1	3424	75.6,75.6
55	2399	383.7	217.5	383.7	2399	381.1	217.5	381.1	50- 55	417.1	3841	84.8,84.8
60	1231	284.8	171.1	284.8	1231	283.1	171.1	283.1	55- 60	303.0	4144	91.4,91.4
65	467.0	186.4	127.7	186.4	467.0	185.6	127.7	185.6	60- 65	176.0	4320	95.3,95.3
70	184.3	130.9	84.33	130.9	184.3	129.8	84.33	129.8	65- 70	97.38	4418	97.5,97.5
75	83.20	73.73	63.57	73.73	83.20	72.70	63.57	72.70	70- 75	56.09	4474	98.7,98.7
80	45.35	46.83	42.81	46.83	45.35	46.08	42.81	46.08	75- 80	33.43	4507	99.4,99.4
85	3.733	24.09	22.05	24.09	3.733	23.73	22.05	23.73	80- 85	18.58	4526	99.9,99.9
90	1.691	1.493	1.290	1.493	1.691	1.579	1.290	1.579	85- 90	6.389	4532	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		

Conical surface Flux(90deg): 2962.2 lm

%lum = 65.4%

%lamp = 65.4%

Conical surface Flux(120deg): 4144.3 lm

%lum = 91.4%

%lamp = 91.4%

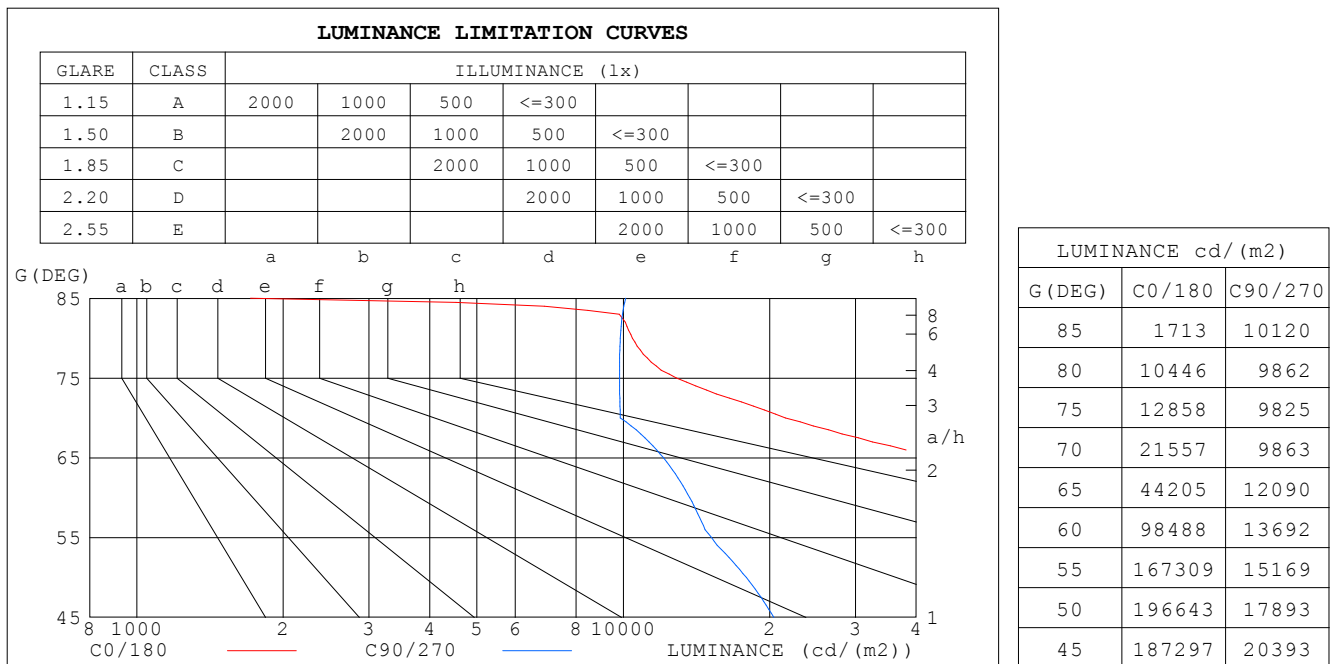
C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:2017-09-26

Checker:

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
 Humidity:65.0%
 Test Distance:9.500m [K=1.0000]
 Remarks:

Assessor:

LUMINANCE LIMITATION CURVES



C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2017-09-26

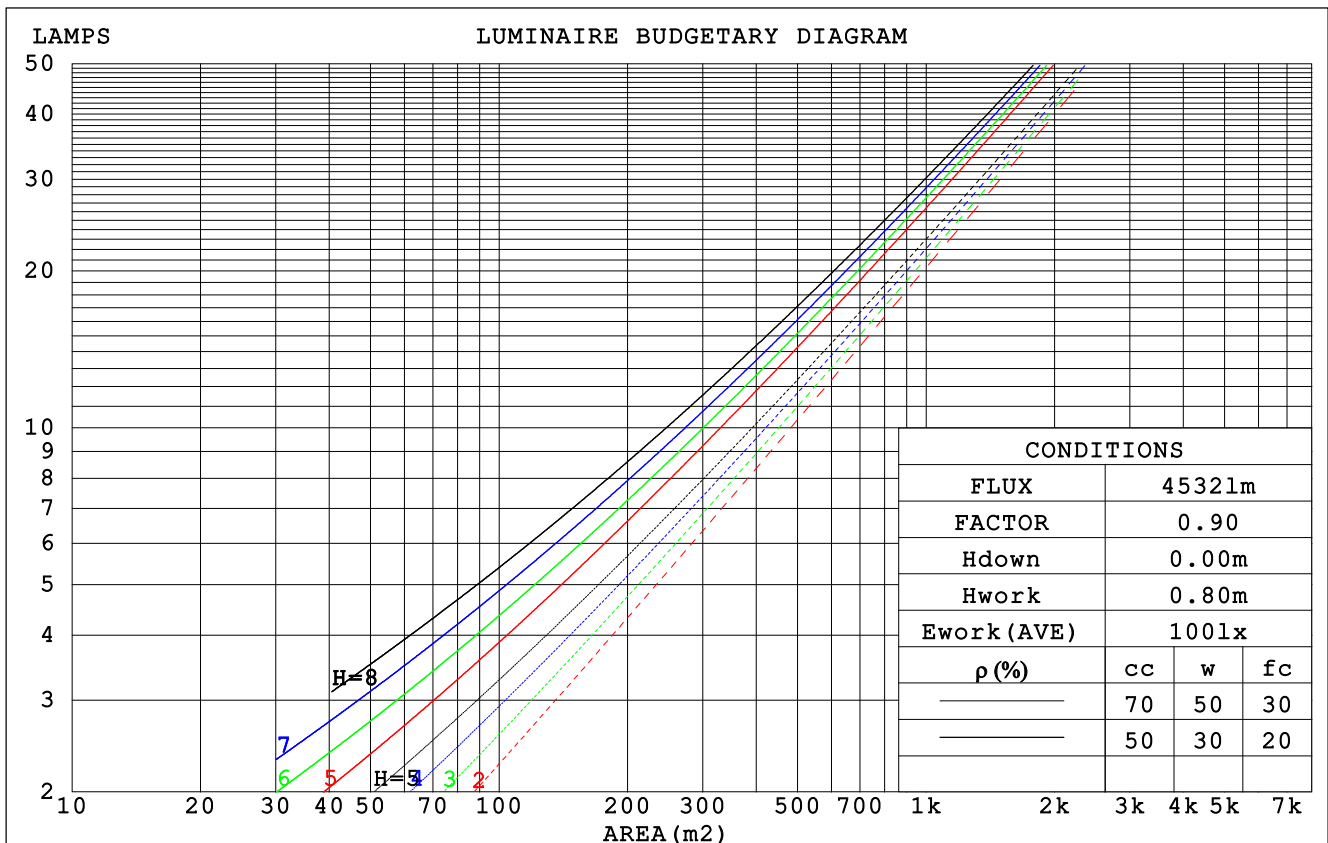
γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity: 65.0%
Test Distance: 9.500m [K=1.0000]
Remarks:

Checker:

Assessor:

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	1.07	1.03	1.00	1.05	1.02	.99	1.01	.98	.96	.97	.95	.93	.93	.92	.90	.88
2.0	.95	.90	.85	.94	.88	.84	.90	.86	.82	.87	.83	.80	.84	.81	.78	.76
3.0	.85	.78	.73	.84	.77	.72	.81	.75	.71	.78	.74	.70	.76	.72	.69	.67
4.0	.77	.69	.63	.75	.68	.63	.73	.67	.62	.71	.65	.61	.69	.64	.60	.58
5.0	.69	.61	.55	.68	.61	.55	.66	.60	.54	.64	.58	.54	.63	.57	.53	.51
6.0	.63	.55	.49	.62	.54	.49	.60	.53	.48	.59	.53	.48	.57	.52	.48	.46
7.0	.57	.49	.44	.57	.49	.44	.55	.48	.43	.54	.48	.43	.53	.47	.43	.41
8.0	.53	.45	.39	.52	.45	.39	.51	.44	.39	.50	.43	.39	.48	.43	.39	.37
9.0	.49	.41	.36	.48	.41	.36	.47	.40	.36	.46	.40	.35	.45	.39	.35	.34
10.0	.45	.38	.33	.45	.37	.33	.44	.37	.33	.43	.37	.32	.42	.36	.32	.31



C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators:
 Test Date: 2017-09-26

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.295
 Humidity: 65.0%
 Test Distance: 9.500m [K=1.0000]
 Remarks:

Checker:

Assessor:

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	.251	.142	.045	.244	.139	.044	.231	.132	.042	.219	.126	.040	.208	.120	.039		
2.0	.244	.134	.041	.238	.131	.040	.226	.126	.039	.216	.121	.038	.206	.117	.037		
3.0	.231	.123	.037	.226	.121	.036	.216	.117	.036	.207	.114	.035	.199	.110	.034		
4.0	.218	.113	.033	.214	.112	.033	.205	.109	.032	.197	.106	.032	.189	.103	.031		
5.0	.205	.105	.030	.201	.103	.030	.193	.101	.030	.186	.098	.029	.179	.096	.029		
6.0	.193	.097	.028	.189	.096	.028	.182	.093	.027	.176	.091	.027	.170	.089	.027		
7.0	.182	.090	.025	.178	.089	.025	.172	.087	.025	.166	.085	.025	.161	.084	.025		
8.0	.171	.084	.023	.168	.083	.023	.163	.081	.023	.157	.080	.023	.153	.078	.023		
9.0	.161	.078	.022	.159	.077	.022	.154	.076	.022	.149	.075	.021	.145	.074	.021		
10.0	.153	.073	.020	.150	.073	.020	.146	.071	.020	.142	.070	.020	.138	.069	.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	.176	.157	.139	.151	.134	.120	.103	.092	.083	.059	.054	.048	.019	.017	.016	
2.0	.166	.132	.104	.142	.114	.090	.097	.079	.063	.056	.046	.037	.018	.015	.012	
3.0	.157	.114	.080	.135	.098	.069	.092	.068	.048	.053	.040	.029	.017	.013	.009	
4.0	.149	.100	.063	.128	.087	.055	.088	.060	.038	.051	.035	.023	.016	.012	.007	
5.0	.142	.090	.051	.122	.078	.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	.129	.074	.036	.111	.064	.031	.077	.045	.022	.045	.026	.013	.014	.009	.004	
8.0	.123	.068	.031	.106	.059	.027	.073	.042	.019	.043	.024	.011	.014	.008	.004	
9.0	.117	.063	.027	.101	.055	.023	.070	.039	.017	.041	.023	.010	.013	.007	.003	
10.0	.112	.059	.024	.097	.051	.021	.067	.036	.015	.039	.021	.009	.013	.007	.003	

C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2017-09-26

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity:65.0%
Test Distance:9.500m [K=1.0000]
Remarks:

Checker:

Assessor:

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	31.0	32.4	31.3	32.5	32.7	19.5	20.8	19.7	21.0	21.2
3H	31.0	32.3	31.3	32.5	32.7	20.1	21.3	20.4	21.6	21.8
4H	31.0	32.2	31.3	32.4	32.6	20.3	21.5	20.7	21.8	22.0
6H	30.9	32.0	31.2	32.3	32.5	20.6	21.7	20.9	22.0	22.2
8H	30.9	31.9	31.2	32.2	32.5	20.7	21.8	21.0	22.0	22.3
12H	30.8	31.8	31.2	32.1	32.4	20.8	21.8	21.1	22.1	22.4
4H 2H	30.7	31.9	31.0	32.2	32.4	20.9	22.1	21.2	22.3	22.6
3H	30.8	31.9	31.2	32.2	32.4	21.5	22.5	21.8	22.8	23.1
4H	30.8	31.7	31.2	32.1	32.4	21.8	22.7	22.1	23.0	23.3
6H	30.8	31.6	31.2	31.9	32.3	22.1	22.9	22.4	23.2	23.6
8H	30.8	31.5	31.2	31.9	32.2	22.2	22.9	22.6	23.3	23.7
12H	30.7	31.4	31.1	31.8	32.2	22.3	23.0	22.7	23.4	23.8
8H 4H	30.7	31.5	31.1	31.8	32.2	22.0	22.8	22.4	23.1	23.5
6H	30.7	31.3	31.1	31.7	32.1	22.4	23.0	22.8	23.4	23.8
8H	30.7	31.2	31.1	31.6	32.1	22.6	23.1	23.1	23.6	24.0
12H	30.7	31.1	31.1	31.6	32.0	22.8	23.2	23.3	23.7	24.2
12H 4H	30.7	31.4	31.1	31.7	32.1	22.0	22.7	22.4	23.1	23.5
6H	30.7	31.2	31.1	31.6	32.1	22.5	23.0	22.9	23.4	23.9
8H	30.6	31.1	31.1	31.6	32.0	22.7	23.1	23.2	23.6	24.1
Variations with the observer position at spacings:										
S = 1.0H	+ 0.6 / - 1.1					+ 0.8 / - 1.0				
1.5H	+ 3.2 / - 5.0					+ 0.7 / - 0.8				
2.0H	+ 4.0 / - 7.3					+ 0.7 / - 0.9				

CIE Pub.117 Corrected 4532 lm Total Lamp Luminous Flux.(8log(F/F0) = 5.3)

C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2017-09-26

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity:65.0%
Test Distance:9.500m [K=1.0000]
Remarks:

Checker:

Assessor:

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) $k(RI) \times RCR = 5$									
$k = 0.60$	63	52	46	62	52	46	61	51	45	39
0.80	73	63	57	73	63	56	71	62	56	50
1.00	82	73	66	81	72	66	79	73	66	59
1.25	89	80	74	88	80	74	85	78	73	67
1.50	94	86	80	92	85	79	90	83	78	72
2.00	100	93	88	98	92	87	95	90	85	78
2.50	103	97	92	101	95	91	97	93	89	81
3.00	106	100	96	104	99	95	100	96	92	85
4.00	109	104	100	107	103	99	103	99	96	88
5.00	111	107	103	108	105	102	104	101	99	90
ROOM INDEX	UF (total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

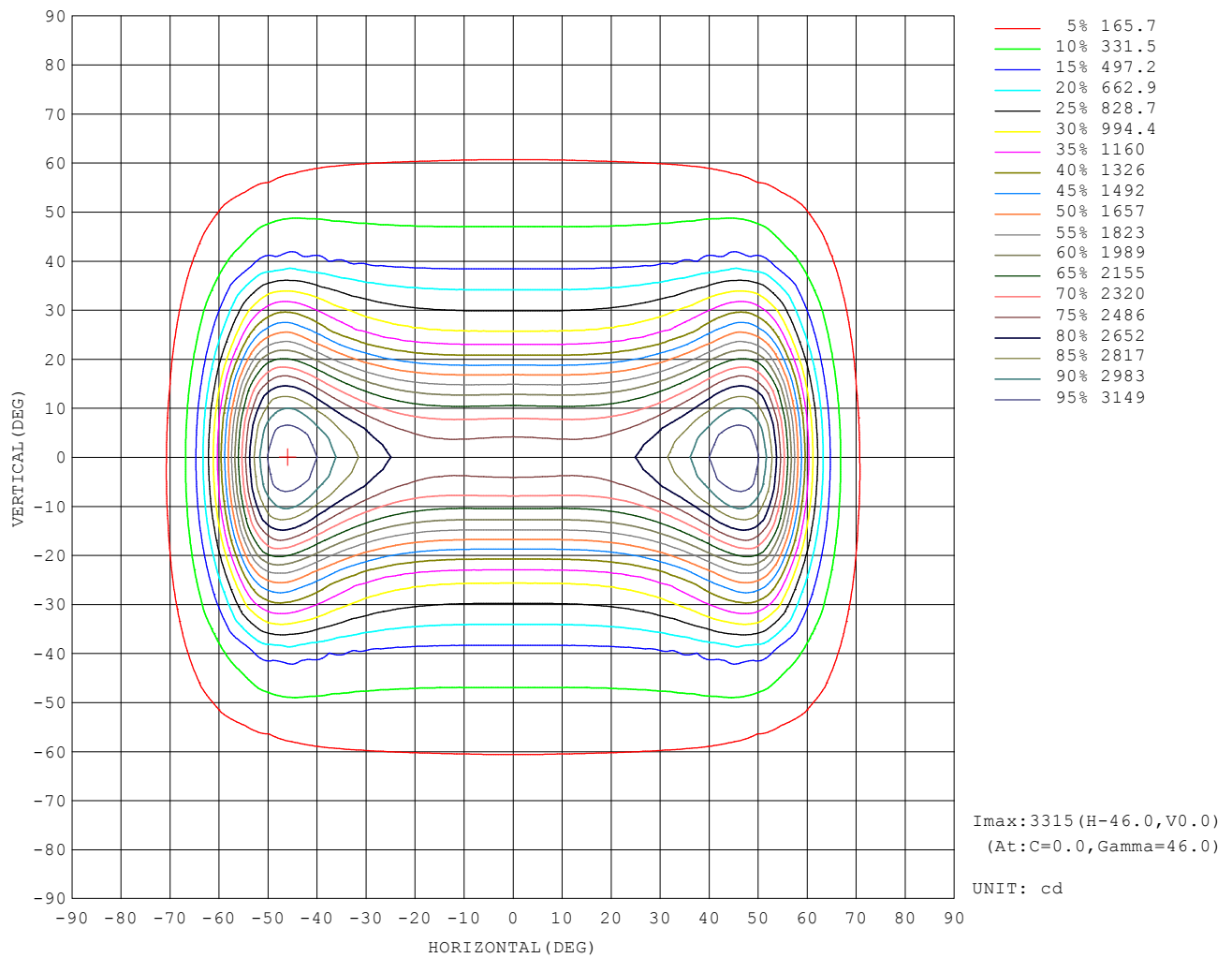
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2017-09-26

Checker:

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity: 65.0%
Test Distance: 9.500m [K=1.0000]
Remarks:

Assessor:

ISOCANDELA DIAGRAM



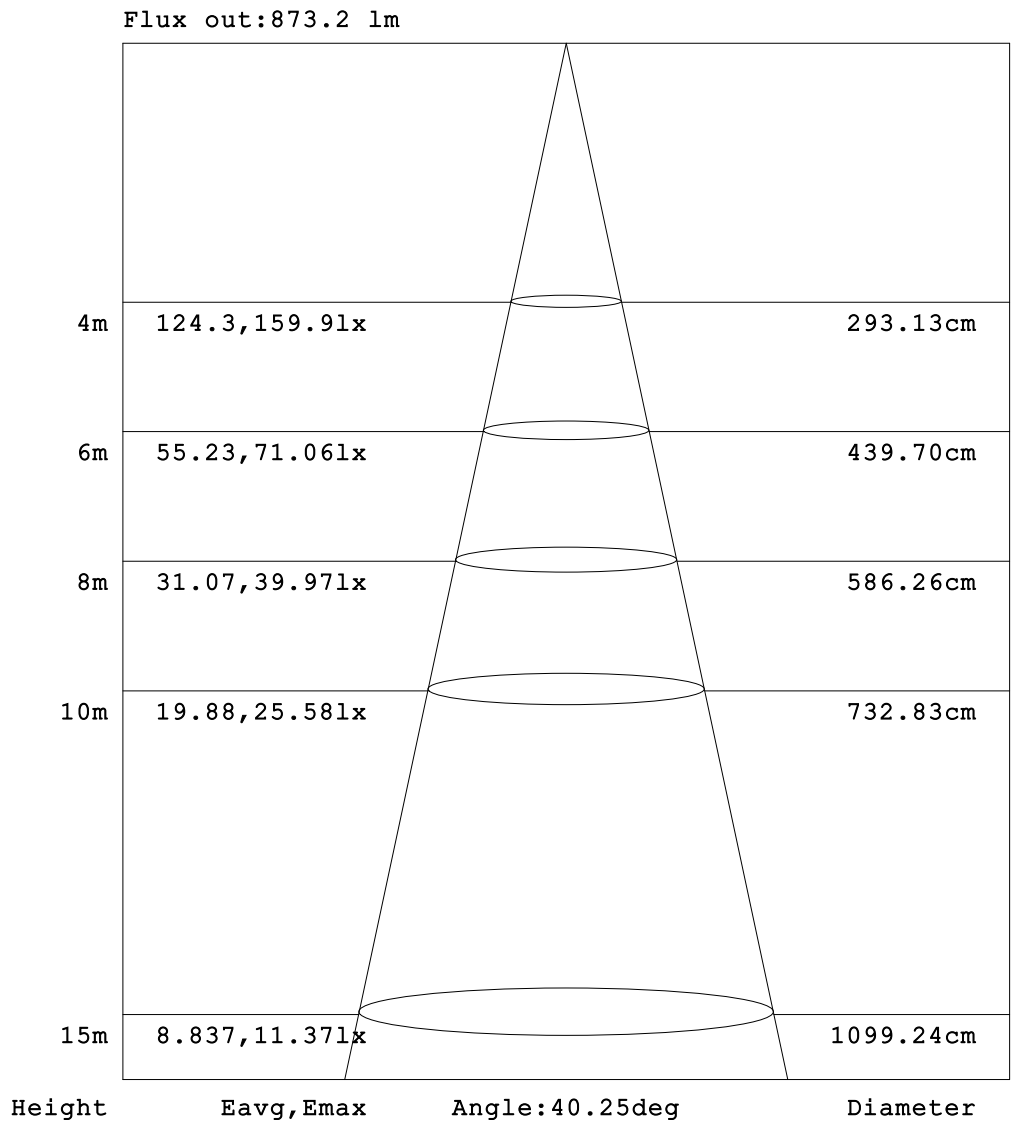
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2017-09-26

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity: 65.0%
Test Distance: 9.500m [K=1.0000]
Remarks:

Checker:

Assessor:

AAI Figure



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

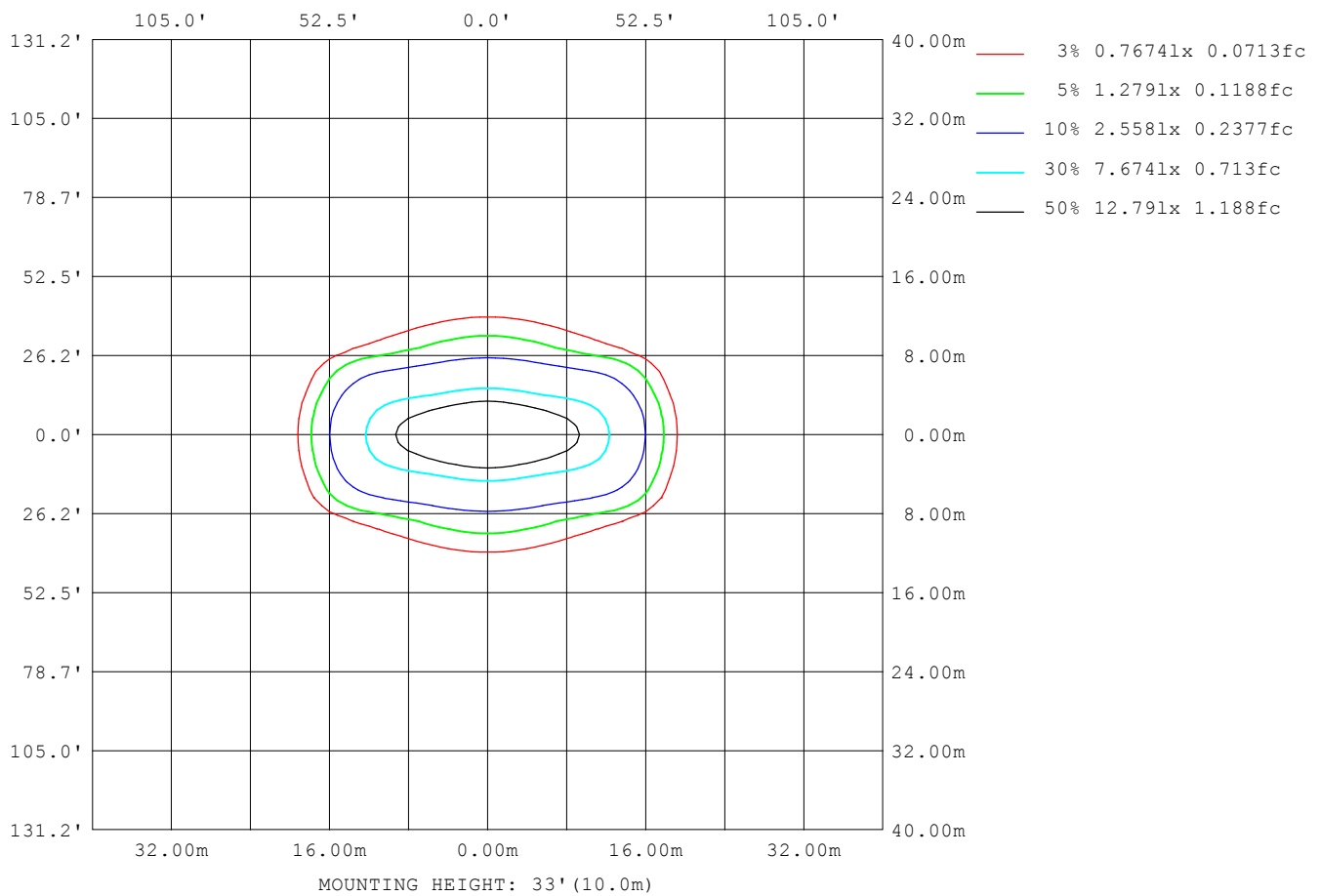
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2017-09-26

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity: 65.0%
Test Distance: 9.500m [K=1.0000]
Remarks:

Checker:

Assessor:

ISOLUX DIAGRAM



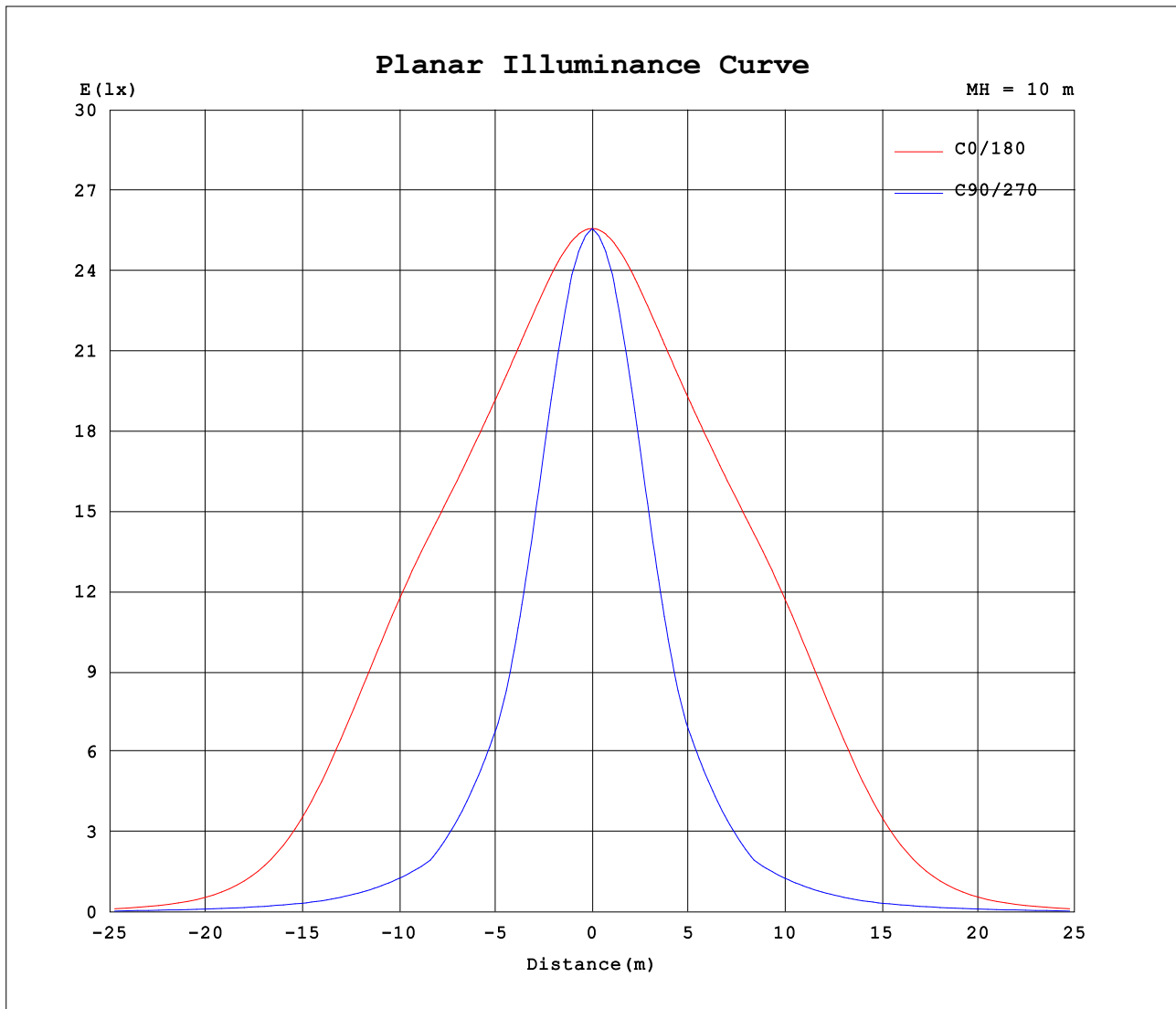
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2017-09-26

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity:65.0%
Test Distance:9.500m [K=1.0000]
Remarks:

Checker:

Assessor:

Planar Illuminance Curve



C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2017-09-26

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity: 65.0%
Test Distance: 9.500m [K=1.0000]
Remarks:

Checker:

Assessor:

Assessor:

Assessor:

Assessor:

UNIT: cd

Assessor: