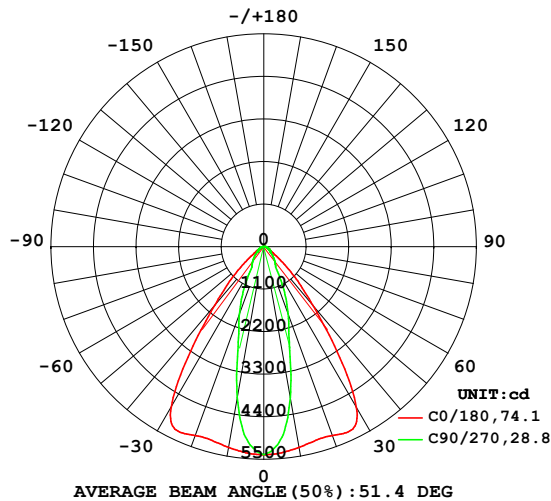


LUMINAIRE PHOTOMETRIC TEST REPORT

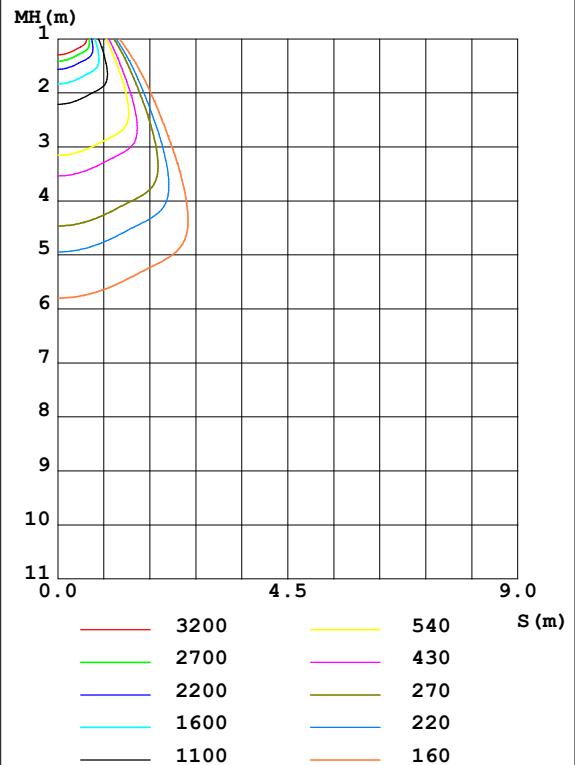
Test:U:230.0V I:0.1463A P:32.63W PF:0.9696 Lamp Flux:4601.41x1 lm		
NAME: LHB01-30H	TYPE:30W	WEIGHT:
SPEC.:4000K Ra80 3070DEG L06401	DIM.: 0.28*0.137*0.102	SERIAL No.:
MFR.:	SUR.:0.25*0.1	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 141.00 lm/W			
MODEL	LHB01-30H	I _{max} (cd)	5381	S/MH(C0/180)	1.07
NOMINAL POWER(W)	30	LOR(%)	100.0	S/MH(C90/270)	0.48
RATED VOLTAGE(V)	230	TOTAL FLUX(lm)	4601.4	η UP,DN(C0-180)	0.0,49.7
NOMINAL FLUX(lm)	4601.41	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,50.3
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	0.50
TEST VOLTAGE(V)	230	η down(%)	100.0	CIBSE SHR MAX	0.60

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:2017-06-01

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:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum, lamp
5	5348	5153	5011	5153	5348	5162	5011	5162	0- 5	125.7	125.7	2.73,2.73
10	5268	4603	3964	4603	5268	4620	3964	4620	5- 10	349.7	475.4	10.3,10.3
15	5187	3710	2560	3710	5187	3709	2560	3709	10- 15	495.5	970.9	21.1,21.1
20	5198	2688	1852	2688	5198	2649	1852	2649	15- 20	566.3	1537	33.4,33.4
25	5264	2126	1236	2126	5264	2060	1236	2060	20- 25	613.2	2150	46.7,46.7
30	4795	1662	619.1	1662	4795	1590	619.1	1590	25- 30	616.2	2767	60.1,60.1
35	3314	1087	520.6	1087	3314	1062	520.6	1062	30- 35	528.4	3295	71.6,71.6
40	1977	523.8	422.0	523.8	1977	540.7	422.0	540.7	35- 40	390.2	3685	80.1,80.1
45	1199	425.9	323.4	425.9	1199	439.0	323.4	439.0	40- 45	275.7	3961	86.1,86.1
50	640.7	332.6	224.9	332.6	640.7	340.2	224.9	340.2	45- 50	196.3	4157	90.3,90.3
55	322.9	241.7	193.7	241.7	322.9	245.1	193.7	245.1	50- 55	135.9	4293	93.3,93.3
60	185.7	159.2	162.5	159.2	185.7	160.2	162.5	160.2	55- 60	97.18	4390	95.4,95.4
65	120.8	123.5	131.3	123.5	120.8	125.7	131.3	125.7	60- 65	72.25	4463	97,97
70	80.44	87.39	100.1	87.39	80.44	90.65	100.1	90.65	65- 70	54.02	4517	98.2,98.2
75	48.61	51.85	75.47	51.85	48.61	55.91	75.47	55.91	70- 75	38.83	4555	99,99
80	18.68	33.40	50.87	33.40	18.68	36.08	50.87	36.08	75- 80	25.78	4581	99.6,99.6
85	7.283	17.64	26.27	17.64	7.283	18.58	26.27	18.58	80- 85	14.80	4596	99.9,99.9
90	0.6759	2.160	1.668	2.160	0.6759	1.298	1.668	1.298	85- 90	5.377	4601	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): 3961 lm

%lum = 86.1%

%lamp = 86.1%

Conical surface Flux(120deg): 4390.4 lm

%lum = 95.4%

%lamp = 95.4%

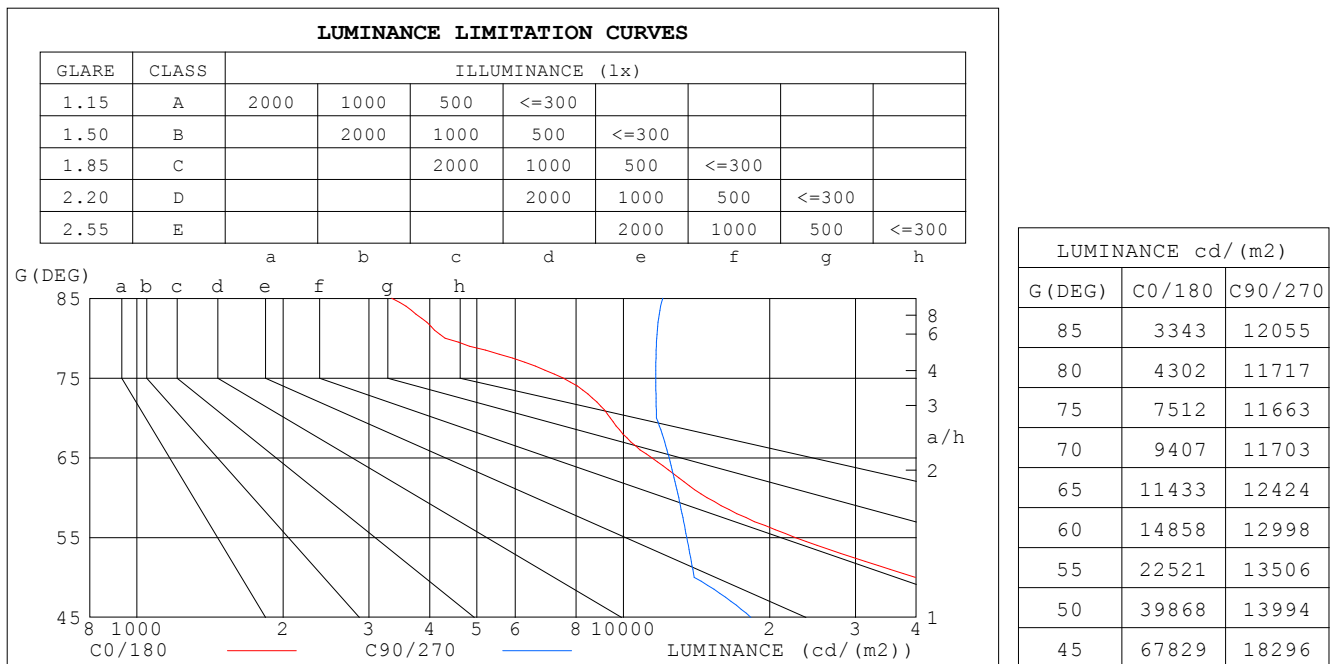
C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:2017-06-01

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: 2017-06-01

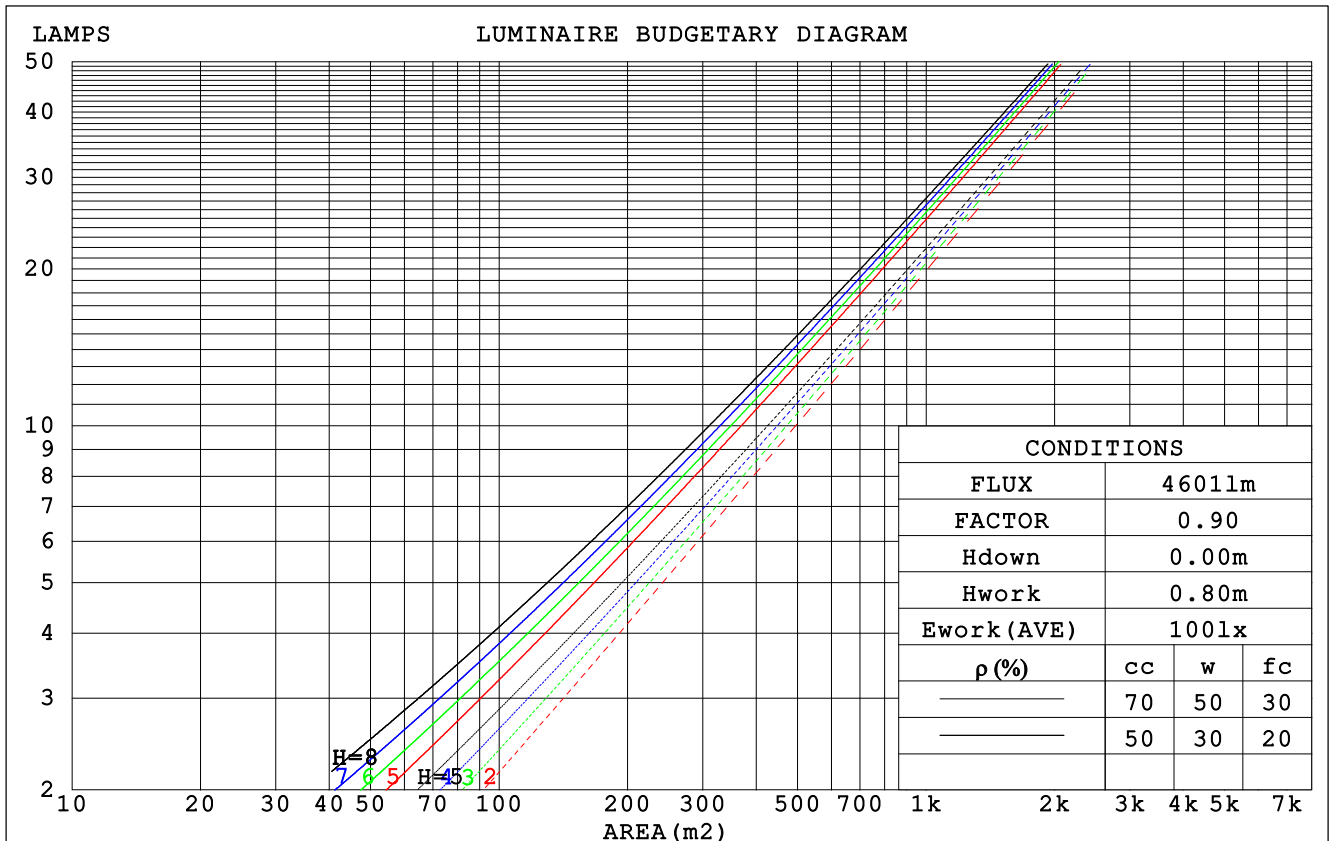
Checker:

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:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

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			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	.00
1.0	1.09	1.06	1.04	1.07	1.05	1.02	1.03	1.01	.99	.99	.98	.96	.96	.94	.93	.91
2.0	1.00	.96	.92	.99	.94	.91	.95	.92	.89	.92	.89	.87	.89	.87	.85	.83
3.0	.92	.87	.82	.91	.86	.82	.88	.84	.80	.86	.82	.79	.83	.80	.78	.76
4.0	.85	.79	.74	.84	.78	.74	.82	.77	.73	.80	.76	.72	.78	.74	.71	.70
5.0	.79	.73	.68	.78	.72	.68	.76	.71	.67	.75	.70	.66	.73	.69	.66	.64
6.0	.74	.67	.62	.73	.67	.62	.71	.66	.62	.70	.65	.61	.69	.64	.61	.59
7.0	.69	.62	.58	.68	.62	.58	.67	.61	.57	.66	.61	.57	.65	.60	.57	.55
8.0	.65	.58	.54	.64	.58	.54	.63	.57	.53	.62	.57	.53	.61	.56	.53	.51
9.0	.61	.54	.50	.60	.54	.50	.59	.54	.50	.58	.53	.50	.58	.53	.49	.48
10.0	.57	.51	.47	.57	.51	.47	.56	.51	.47	.55	.50	.47	.55	.50	.46	.45



C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2017-06-01

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	.206	.117	.037	.199	.114	.036	.187	.107	.034	.175	.101	.032	.164	.095	.031	
2.0	.197	.108	.033	.191	.105	.032	.180	.100	.031	.170	.096	.030	.161	.091	.029	
3.0	.186	.099	.030	.181	.097	.029	.172	.093	.028	.163	.090	.027	.155	.086	.027	
4.0	.176	.091	.027	.172	.090	.027	.164	.087	.026	.156	.084	.025	.149	.081	.025	
5.0	.166	.085	.025	.163	.083	.024	.156	.081	.024	.149	.079	.023	.143	.076	.023	
6.0	.158	.079	.023	.154	.078	.022	.148	.076	.022	.142	.074	.022	.137	.072	.021	
7.0	.149	.074	.021	.146	.073	.021	.141	.071	.021	.136	.070	.020	.131	.068	.020	
8.0	.142	.069	.020	.139	.069	.019	.134	.067	.019	.130	.066	.019	.125	.064	.019	
9.0	.135	.065	.018	.133	.065	.018	.128	.063	.018	.124	.062	.018	.120	.061	.018	
10.0	.129	.062	.017	.127	.061	.017	.123	.060	.017	.119	.059	.017	.115	.058	.017	

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	.173	.157	.143	.148	.135	.123	.101	.093	.085	.058	.054	.049	.019	.017	.016	
2.0	.160	.132	.109	.137	.114	.095	.094	.079	.066	.054	.046	.039	.017	.015	.013	
3.0	.148	.114	.086	.127	.098	.075	.087	.068	.052	.050	.040	.031	.016	.013	.010	
4.0	.139	.099	.069	.119	.086	.060	.082	.060	.042	.047	.035	.025	.015	.011	.008	
5.0	.131	.088	.057	.112	.076	.049	.077	.053	.035	.045	.031	.021	.014	.010	.007	
6.0	.123	.079	.047	.106	.068	.041	.073	.048	.029	.042	.028	.017	.014	.009	.006	
7.0	.117	.072	.040	.100	.062	.035	.069	.044	.025	.040	.026	.015	.013	.008	.005	
8.0	.111	.065	.034	.095	.057	.030	.066	.040	.021	.038	.024	.013	.012	.008	.004	
9.0	.106	.060	.030	.091	.052	.026	.063	.037	.018	.037	.022	.011	.012	.007	.004	
10.0	.101	.056	.026	.087	.049	.023	.060	.034	.016	.035	.020	.010	.011	.007	.003	

C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2017-06-01

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	23.9	25.0	24.2	25.2	25.3	17.7	18.8	18.0	19.0	19.2
3H	23.9	24.9	24.2	25.1	25.4	18.8	19.8	19.1	20.0	20.2
4H	23.9	24.9	24.2	25.1	25.3	19.4	20.3	19.6	20.5	20.8
6H	23.9	24.8	24.2	25.0	25.3	19.9	20.7	20.2	21.0	21.2
8H	23.9	24.7	24.2	25.0	25.2	20.1	20.9	20.4	21.2	21.4
12H	23.8	24.6	24.2	24.9	25.2	20.2	21.0	20.6	21.3	21.6
4H 2H	23.8	24.7	24.1	24.9	25.2	18.2	19.2	18.5	19.4	19.6
3H	23.9	24.7	24.2	25.0	25.3	19.4	20.2	19.8	20.5	20.8
4H	23.9	24.7	24.3	25.0	25.3	20.1	20.8	20.4	21.1	21.4
6H	23.9	24.6	24.3	24.9	25.3	20.7	21.3	21.1	21.7	22.0
8H	23.9	24.5	24.3	24.9	25.3	21.0	21.6	21.4	21.9	22.3
12H	23.9	24.4	24.3	24.8	25.2	21.2	21.7	21.6	22.1	22.5
8H 4H	23.9	24.5	24.3	24.8	25.2	20.2	20.8	20.6	21.1	21.5
6H	23.9	24.4	24.4	24.8	25.2	20.9	21.4	21.4	21.8	22.2
8H	23.9	24.4	24.4	24.8	25.2	21.3	21.7	21.7	22.1	22.6
12H	23.9	24.3	24.4	24.7	25.2	21.6	22.0	22.1	22.4	22.9
12H 4H	23.8	24.4	24.3	24.8	25.2	20.2	20.7	20.6	21.1	21.5
6H	23.9	24.3	24.4	24.8	25.2	20.9	21.4	21.4	21.8	22.2
8H	23.9	24.3	24.4	24.7	25.2	21.3	21.7	21.8	22.2	22.6
Variations with the observer position at spacings:										
S = 1.0H	+ 3.3 / - 2.9					+ 0.4 / - 0.5				
1.5H	+ 4.7 / - 3.5					+ 0.3 / - 0.5				
2.0H	+ 5.0 / - 2.5					+ 0.5 / - 0.4				

CIE Pub.117 Corrected 4601 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:2017-06-01

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) $k(RI) \times RCR = 5$									
$k = 0.60$	79	71	67	78	71	66	78	71	66	62
0.80	87	80	75	87	80	75	85	79	75	70
1.00	93	86	82	92	86	81	91	86	81	76
1.25	98	92	87	97	91	87	95	90	86	81
1.50	102	96	91	100	95	91	98	93	90	85
2.00	105	100	96	104	99	95	101	97	94	88
2.50	108	103	99	106	101	98	103	99	96	90
3.00	109	105	102	108	104	101	104	101	99	92
4.00	112	108	106	110	107	104	106	104	102	94
5.00	113	111	108	111	109	107	107	105	103	95
ROOM INDEX	UF (total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

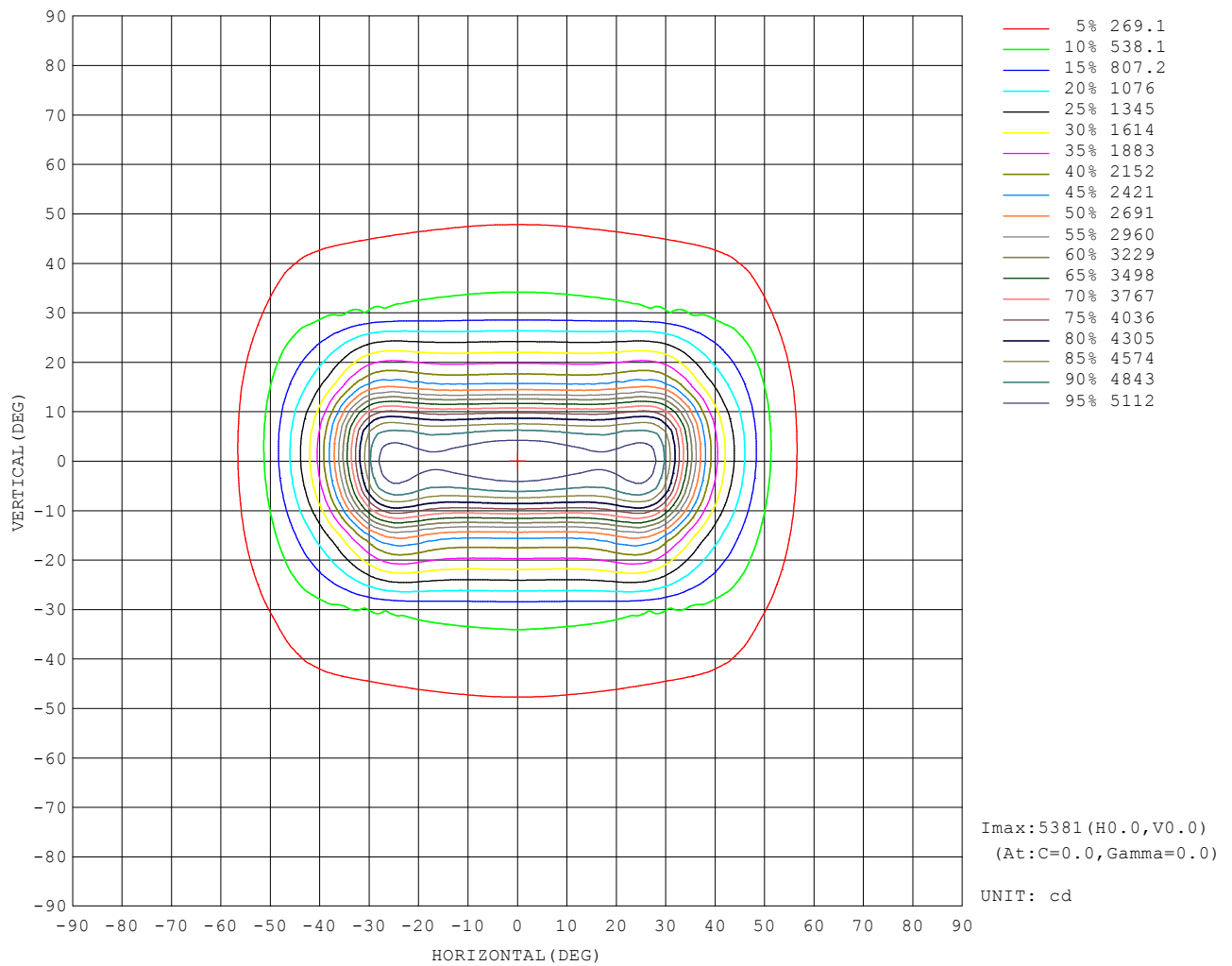
C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators:
 Test Date: 2017-06-01

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



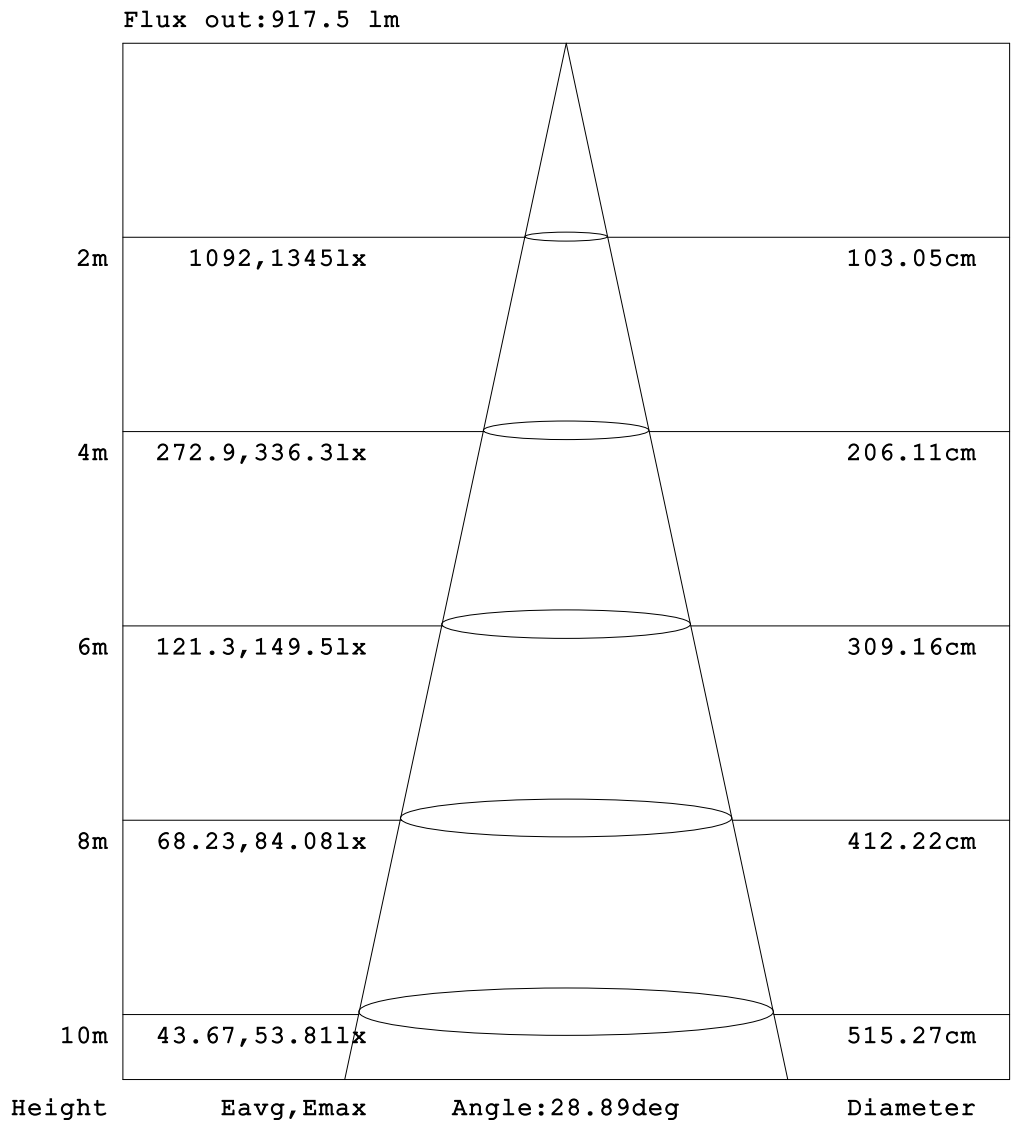
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2017-06-01

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.

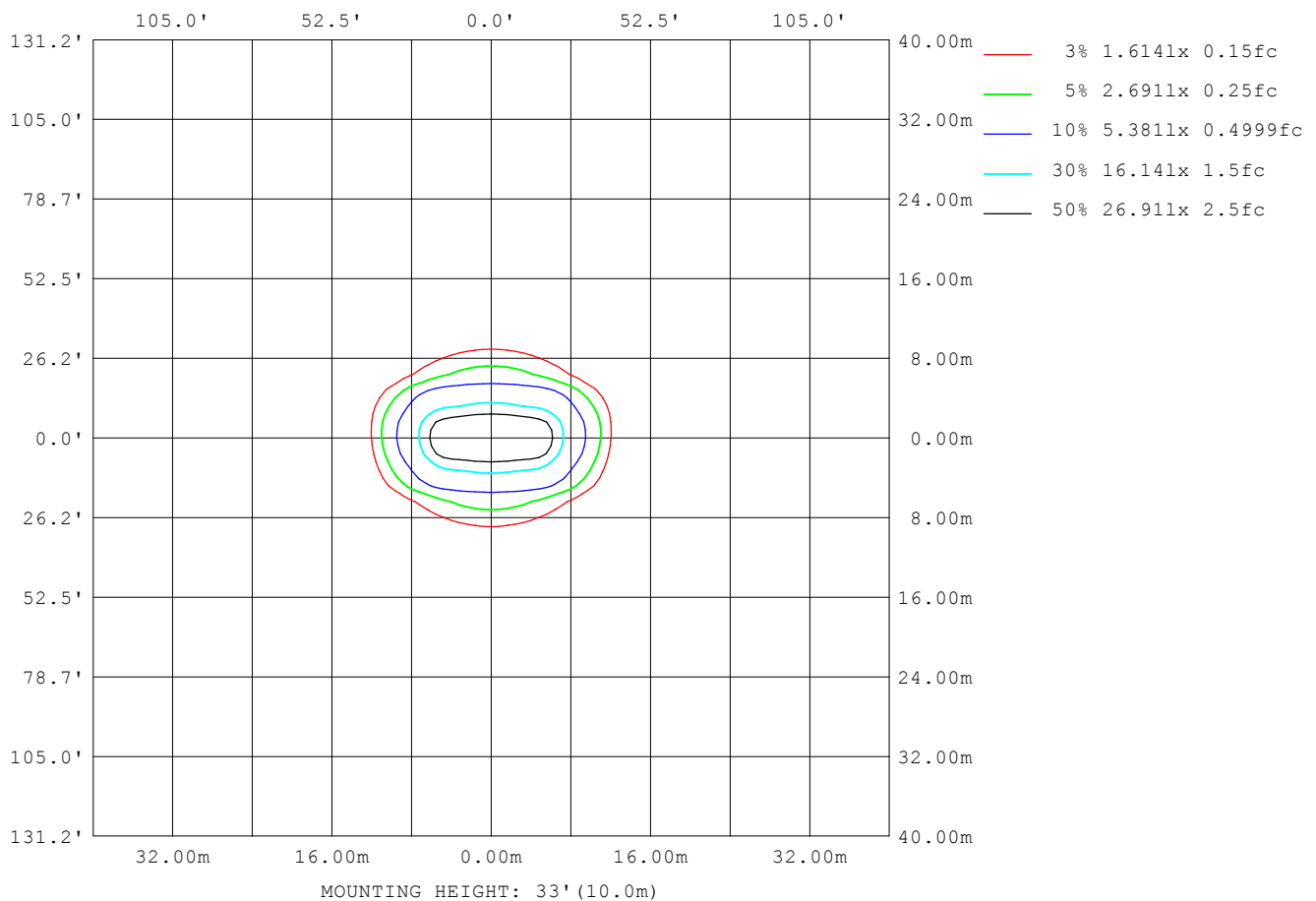
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2017-06-01

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



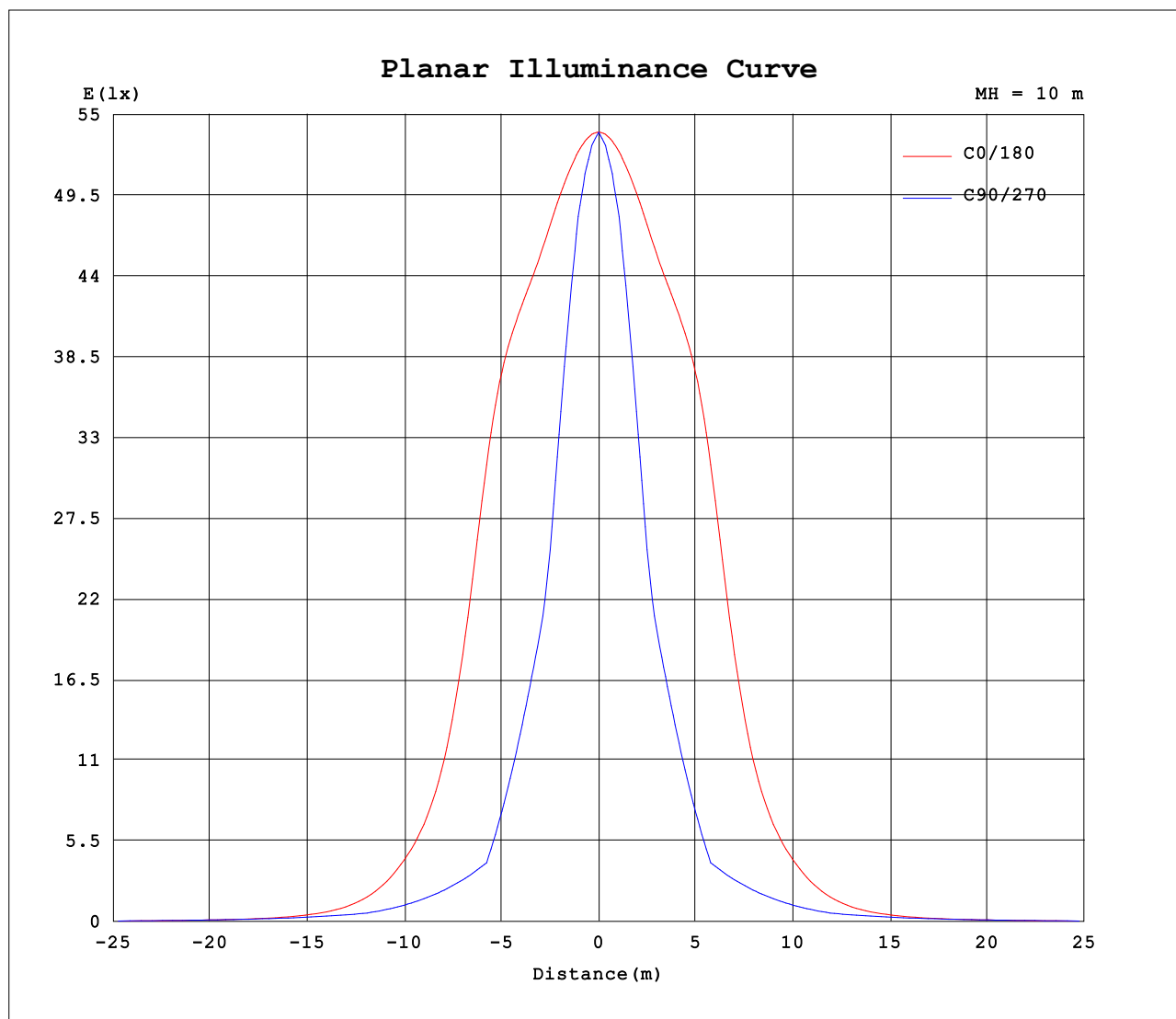
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2017-06-01

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: 2017-06-01

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: