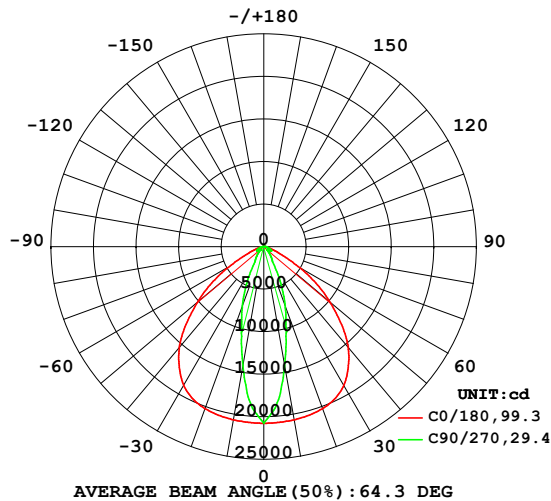


LUMINAIRE PHOTOMETRIC TEST REPORT

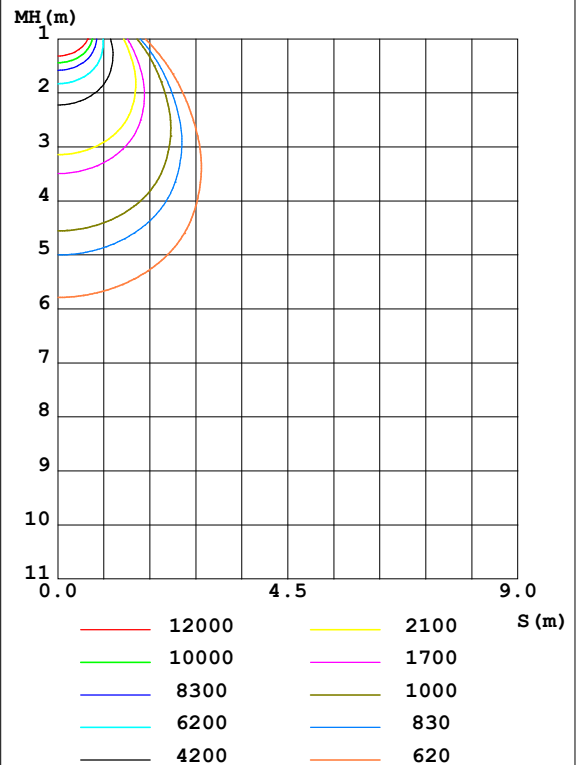
Test:U:230.1V I:0.6619A P:147.1W PF:0.9658 Lamp Flux:19531x1 lm		
NAME: LHB03-150	TYPE:150W	WEIGHT:
SPEC.:5000K Ra70 30*100DEG L00301	DIM.: 0.62*0.3*0.06	SERIAL No.:
MFR.:	SUR.:0.57*0.27	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 132.80 lm/W			
MODEL	LHB03-150	I _{max} (cd)	20759	S/MH(C0/180)	1.32
NOMINAL POWER(W)	150	LOR(%)	100.0	S/MH(C90/270)	0.48
RATED VOLTAGE(V)	230	TOTAL FLUX(lm)	19531	η UP,DN(C0-180)	0.0,50.1
NOMINAL FLUX(lm)	19531	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,49.9
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:2017-03-04

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	2073	1922	1839	1922	2073	1922	1839	1922	0- 5	474.2	474.2	2.43,2.43
10	2066	1667	1422	1667	2066	1665	1422	1665	5- 10	1293	1767	9.05,9.05
15	2052	1335	1018	1335	2052	1332	1018	1332	10- 15	1837	3604	18.5,18.5
20	2025	1023	738.8	1023	2025	1020	738.8	1020	15- 20	2129	5733	29.4,29.4
25	1975	789.1	475.1	789.1	1975	785.4	475.1	785.4	20- 25	2237	7970	40.8,40.8
30	1882	574.0	211.4	574.0	1882	570.3	211.4	570.3	25- 30	2151	10121	51.8,51.8
35	1733	355.7	158.2	355.7	1733	352.6	158.2	352.6	30- 35	1935	12055	61.7,61.7
40	1545	162.0	105.0	162.0	1545	159.8	105.0	159.8	35- 40	1718	13774	70.5,70.5
45	1292	119.3	58.70	119.3	1292	117.5	58.70	117.5	40- 45	1463	15237	78,78
50	1019	78.14	67.63	78.14	1019	77.13	67.63	77.13	45- 50	1181	16417	84.1,84.1
55	749.3	41.55	83.48	41.55	749.3	41.45	83.48	41.45	50- 55	933.9	17351	88.8,88.8
60	466.5	37.19	99.32	37.19	466.5	37.25	99.32	37.25	55- 60	730.7	18082	92.6,92.6
65	236.7	34.11	78.17	34.11	236.7	34.25	78.17	34.25	60- 65	568.5	18650	95.5,95.5
70	133.2	27.59	57.01	27.59	133.2	27.57	57.01	27.57	65- 70	391.9	19042	97.5,97.5
75	61.05	18.35	36.82	18.35	61.05	17.91	36.82	17.91	70- 75	251.1	19293	98.8,98.8
80	23.13	10.14	24.26	10.14	23.13	9.398	24.26	9.398	75- 80	144.3	19438	99.5,99.5
85	5.583	5.457	12.66	5.457	5.583	5.096	12.66	5.096	80- 85	70.25	19508	99.9,99.9
90	0.5960	1.122	1.055	1.122	0.5960	1.118	1.055	1.118	85- 90	23.00	19531	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:×10cd									UNIT:lm		

Conical surface Flux(90deg): 15237 lm

%lum = 78.0%

%lamp = 78.0%

Conical surface Flux(120deg): 18082 lm

%lum = 92.6%

%lamp = 92.6%

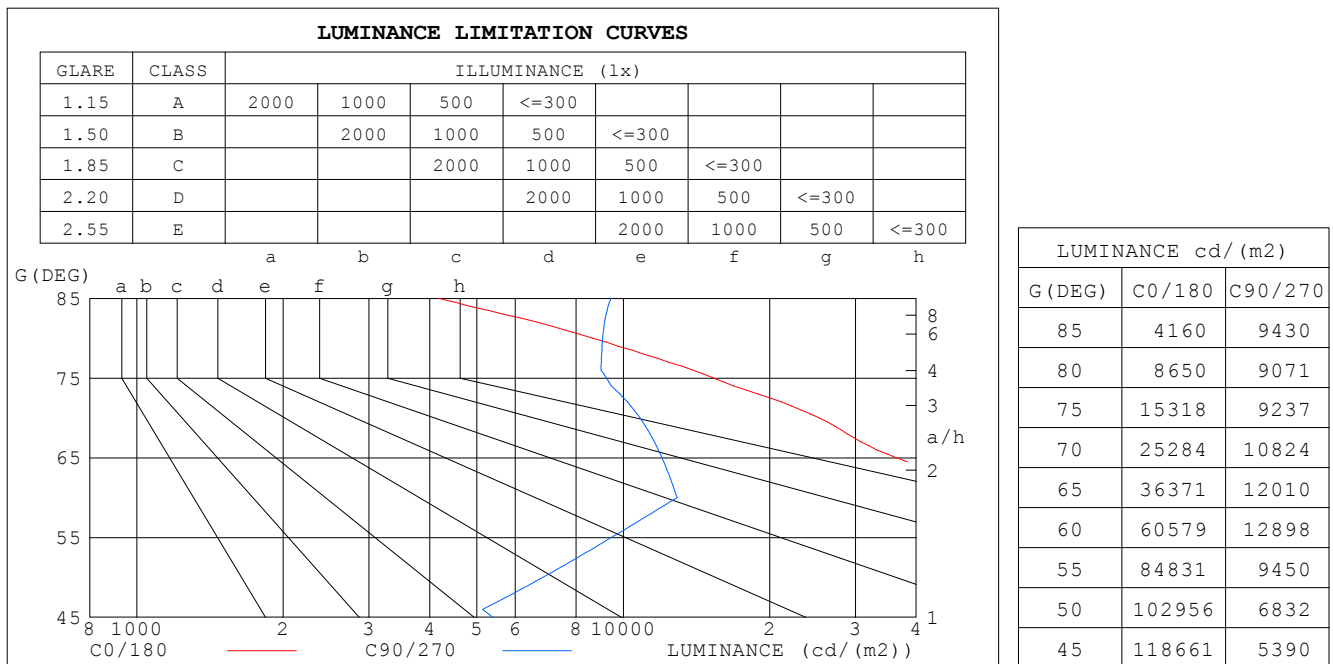
C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:2017-03-04

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: 2017-03-04

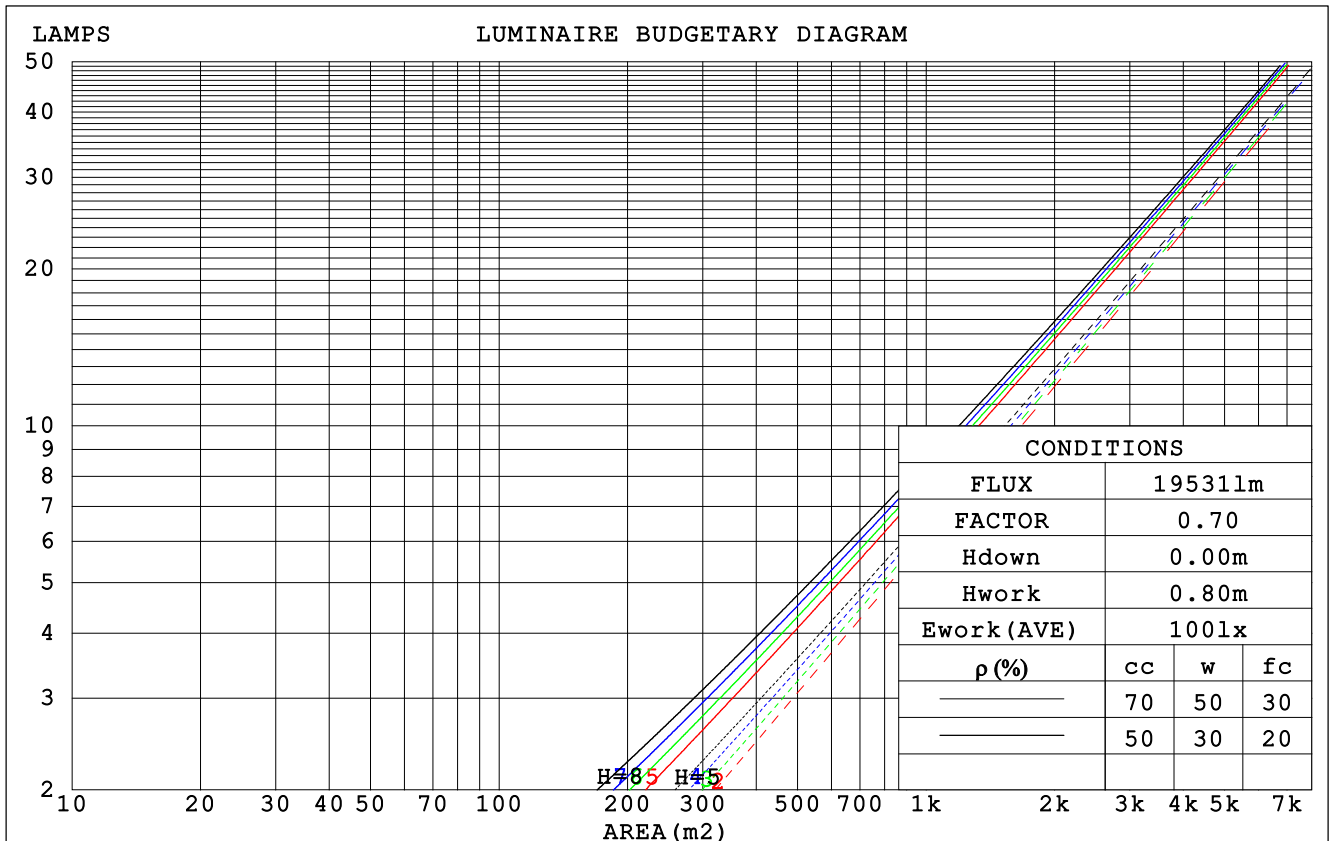
γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity: 65.0%
Test Distance: 9.500m [K=1.0000]
Remarks:

Checker:

Assessor:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

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	1.00
1.0	1.08	1.05	1.02	1.06	1.03	1.01	1.02	.00	.98	.98	.96	.95	.95	.93	.92	.90
2.0	.98	.93	.89	.97	.92	.88	.93	.89	.86	.90	.87	.84	.87	.85	.82	.80
3.0	.90	.83	.78	.88	.82	.78	.85	.81	.77	.83	.79	.75	.80	.77	.74	.72
4.0	.82	.75	.70	.81	.75	.70	.79	.73	.69	.76	.72	.68	.74	.70	.67	.65
5.0	.76	.68	.63	.75	.68	.63	.73	.67	.62	.71	.66	.62	.69	.65	.61	.59
6.0	.70	.63	.58	.69	.62	.57	.67	.61	.57	.66	.61	.57	.64	.60	.56	.54
7.0	.65	.58	.53	.64	.57	.53	.63	.57	.52	.62	.56	.52	.60	.55	.52	.50
8.0	.61	.54	.49	.60	.53	.49	.59	.53	.48	.58	.52	.48	.57	.52	.48	.46
9.0	.57	.50	.45	.56	.50	.45	.55	.49	.45	.54	.49	.45	.53	.48	.45	.43
10.0	.53	.47	.42	.53	.46	.42	.52	.46	.42	.51	.46	.42	.50	.45	.42	.40



C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators:
 Test Date: 2017-03-04

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	.225	.128	.041	.218	.124	.040	.205	.118	.038	.193	.112	.036	.183	.106	.034	
2.0	.216	.118	.036	.210	.116	.036	.199	.111	.034	.189	.106	.033	.180	.102	.032	
3.0	.204	.109	.033	.199	.107	.032	.189	.103	.031	.181	.099	.030	.172	.095	.030	
4.0	.192	.100	.029	.188	.098	.029	.179	.095	.028	.172	.092	.028	.164	.089	.027	
5.0	.181	.092	.027	.177	.091	.026	.170	.088	.026	.163	.086	.026	.156	.084	.025	
6.0	.170	.085	.024	.167	.084	.024	.160	.082	.024	.154	.080	.024	.149	.078	.023	
7.0	.161	.079	.023	.158	.079	.022	.152	.077	.022	.147	.075	.022	.141	.073	.022	
8.0	.152	.074	.021	.149	.074	.021	.144	.072	.021	.139	.071	.020	.135	.069	.020	
9.0	.144	.070	.019	.142	.069	.019	.137	.068	.019	.133	.067	.019	.129	.065	.019	
10.0	.137	.066	.018	.135	.065	.018	.131	.064	.018	.127	.063	.018	.123	.062	.018	

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	.174	.157	.141	.149	.135	.121	.102	.093	.084	.059	.054	.049	.019	.017	.016	
2.0	.162	.132	.107	.139	.114	.093	.095	.079	.065	.055	.046	.038	.018	.015	.012	
3.0	.152	.114	.084	.130	.098	.072	.089	.068	.051	.052	.040	.030	.017	.013	.010	
4.0	.143	.100	.067	.123	.086	.058	.084	.060	.041	.049	.035	.024	.016	.011	.008	
5.0	.135	.089	.055	.116	.077	.047	.080	.054	.034	.046	.031	.020	.015	.010	.007	
6.0	.128	.080	.045	.110	.069	.040	.076	.048	.028	.044	.028	.017	.014	.009	.005	
7.0	.121	.072	.038	.104	.063	.033	.072	.044	.024	.042	.026	.014	.014	.008	.005	
8.0	.115	.066	.033	.099	.058	.029	.069	.040	.020	.040	.024	.012	.013	.008	.004	
9.0	.110	.061	.029	.094	.053	.025	.065	.037	.018	.038	.022	.011	.012	.007	.004	
10.0	.105	.057	.025	.090	.049	.022	.063	.035	.016	.036	.021	.009	.012	.007	.003	

C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2017-03-04

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	27.6	28.7	27.8	28.9	29.1	15.8	17.0	16.0	17.1	17.3
3H	28.1	29.2	28.4	29.4	29.6	18.0	19.1	18.3	19.3	19.5
4H	28.2	29.3	28.5	29.5	29.7	18.7	19.8	19.0	20.0	20.2
6H	28.2	29.2	28.5	29.4	29.7	19.3	20.2	19.6	20.5	20.8
8H	28.2	29.1	28.5	29.4	29.6	19.5	20.4	19.8	20.7	21.0
12H	28.1	29.0	28.5	29.3	29.6	19.7	20.6	20.0	20.9	21.1
4H 2H	27.3	28.3	27.6	28.6	28.8	16.1	17.1	16.4	17.4	17.6
3H	27.9	28.8	28.2	29.0	29.3	18.5	19.4	18.8	19.6	19.9
4H	28.0	28.8	28.4	29.1	29.4	19.4	20.2	19.7	20.5	20.8
6H	28.0	28.7	28.4	29.1	29.4	20.1	20.8	20.5	21.2	21.5
8H	28.0	28.7	28.4	29.0	29.4	20.4	21.1	20.8	21.4	21.8
12H	28.0	28.6	28.4	29.0	29.4	20.7	21.3	21.1	21.6	22.0
8H 4H	27.9	28.5	28.3	28.9	29.3	19.4	20.1	19.8	20.4	20.8
6H	27.9	28.5	28.3	28.9	29.3	20.3	20.9	20.7	21.2	21.7
8H	27.9	28.4	28.4	28.8	29.2	20.7	21.2	21.2	21.6	22.1
12H	27.9	28.3	28.3	28.7	29.2	21.1	21.5	21.6	22.0	22.4
12H 4H	27.8	28.4	28.2	28.8	29.2	19.4	20.0	19.8	20.4	20.8
6H	27.9	28.4	28.3	28.8	29.2	20.3	20.8	20.7	21.2	21.6
8H	27.9	28.3	28.3	28.7	29.2	20.8	21.2	21.2	21.6	22.1
Variations with the observer position at spacings:										
S = 1.0H	+ 1.7 / - 1.9					+ 0.3 / - 0.4				
1.5H	+ 3.1 / - 4.3					+ 0.5 / - 0.3				
2.0H	+ 4.6 / - 7.0					+ 0.9 / - 0.6				

CIE Pub.117 Corrected 19531 lm Total Lamp Luminous Flux.(8log(F/F0) = 10.3)

C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2017-03-04

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) $k(RI) \times RCR = 5$									
$k = 0.60$	73	64	59	72	64	59	71	64	59	54
0.80	82	74	68	81	73	68	80	73	68	62
1.00	89	81	76	88	80	75	86	81	75	69
1.25	94	87	82	93	86	82	91	85	81	75
1.50	98	91	87	97	91	86	94	89	85	79
2.00	103	97	93	101	96	92	98	94	90	84
2.50	106	100	96	104	99	95	100	96	93	86
3.00	108	103	99	106	102	98	102	99	96	89
4.00	111	107	104	109	105	102	105	102	99	92
5.00	112	109	106	110	107	105	106	104	102	93
ROOM INDEX	UF (total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

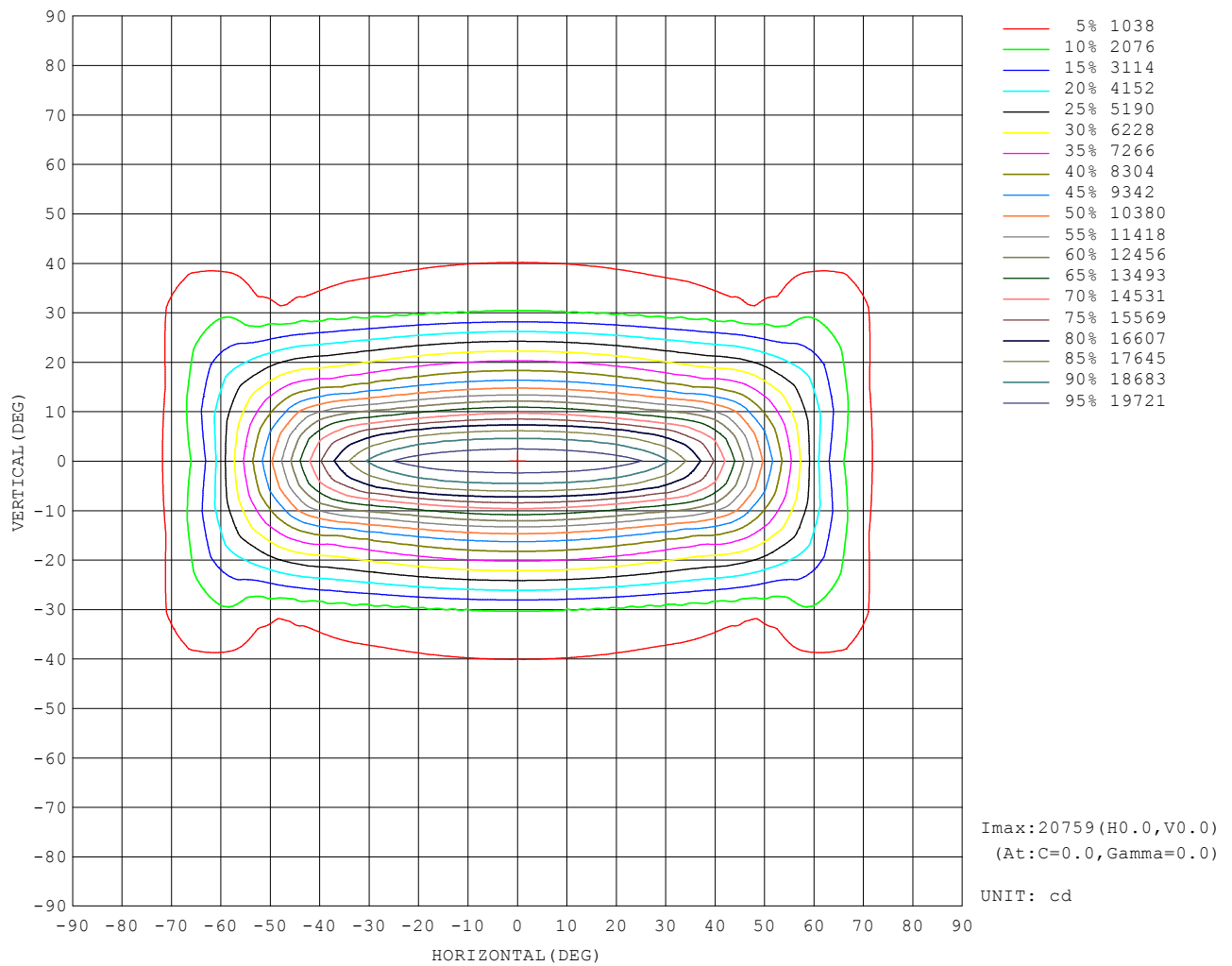
C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators:
 Test Date: 2017-03-04

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



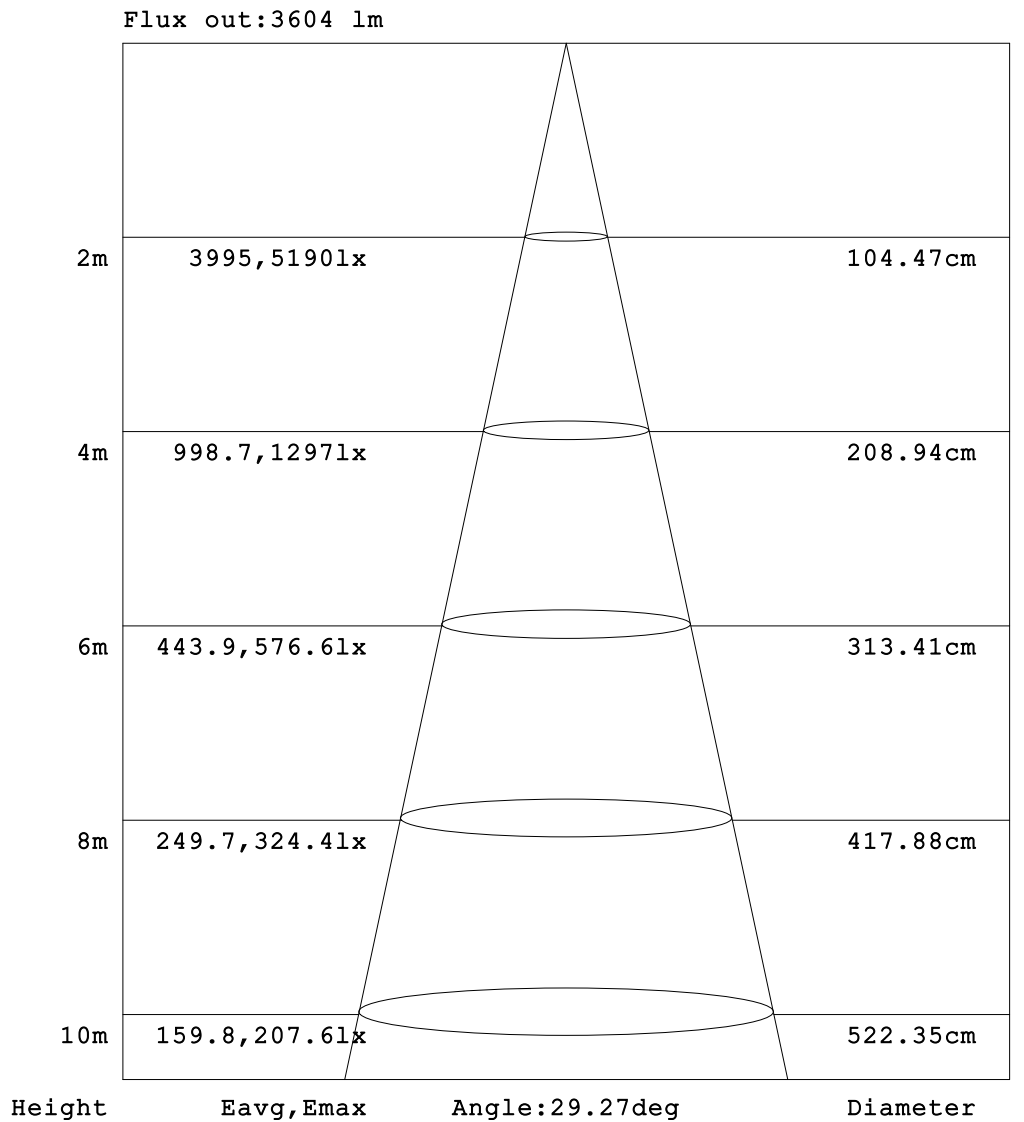
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2017-03-04

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.

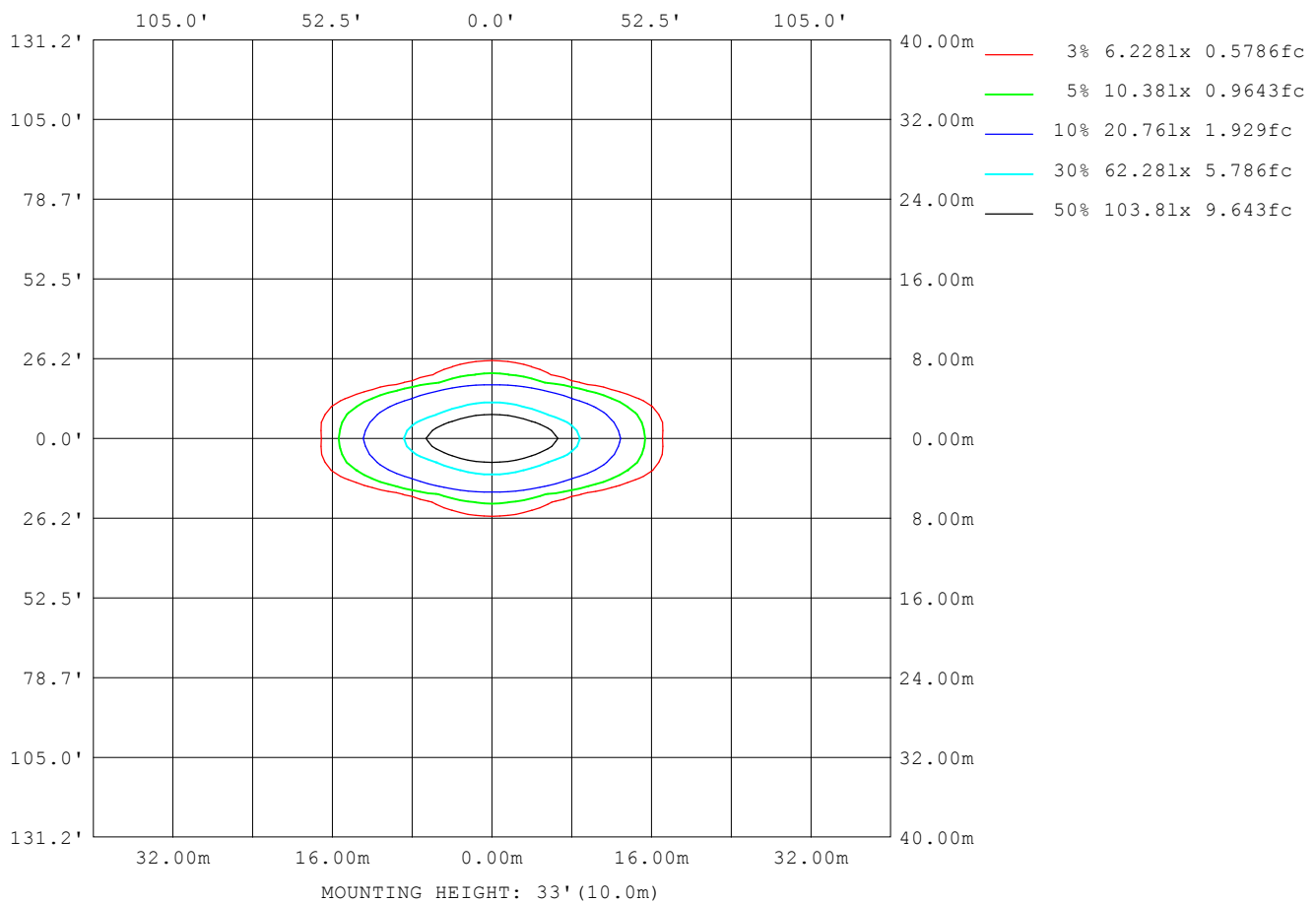
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2017-03-04

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



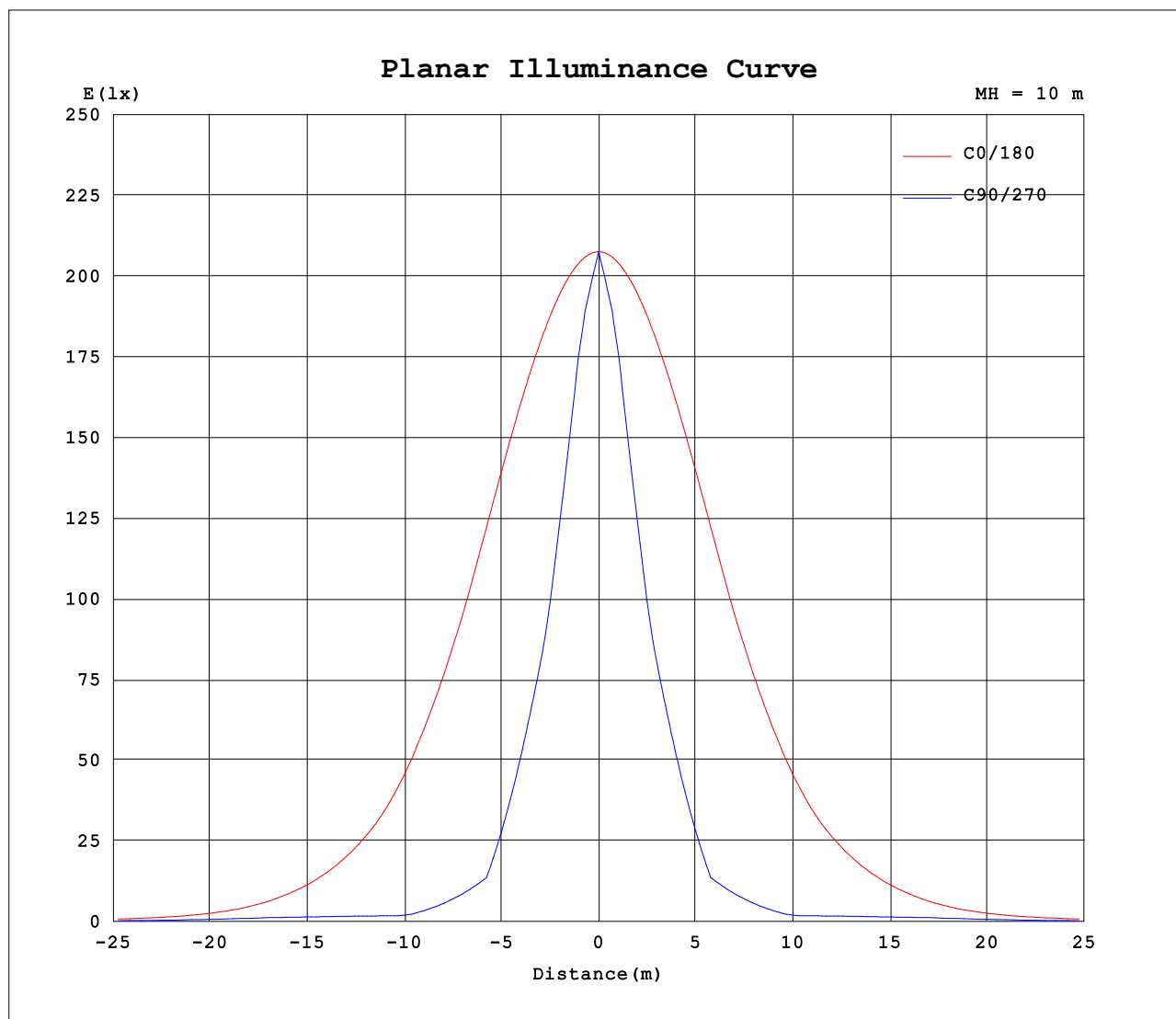
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2017-03-04

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:

Planar Illuminance Curve



C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2017-03-04

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:

```

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

```