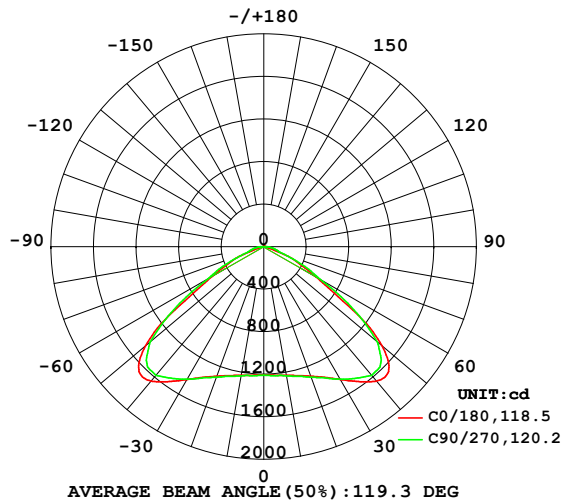


LUMINAIRE PHOTOMETRIC TEST REPORT

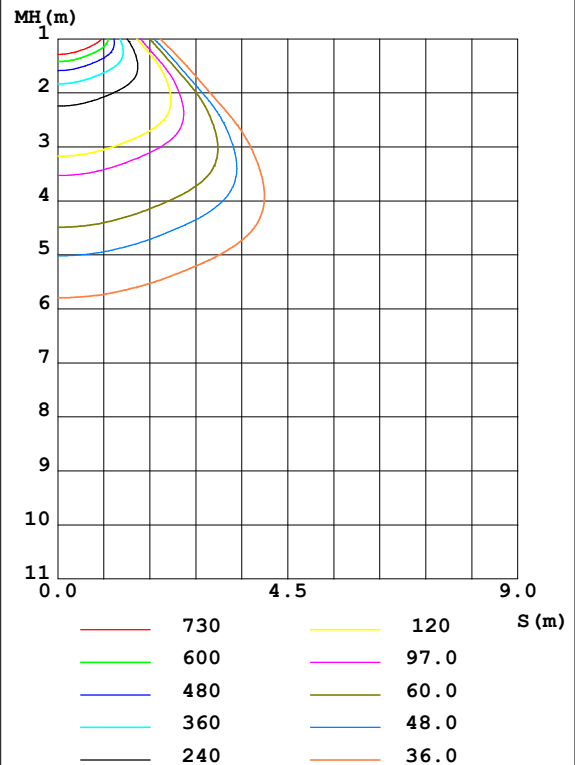
Test:U:230.0V I:0.1370A P:30.02W PF:0.9527 Lamp Flux:4651.76x1 lm		
NAME: LHB01-30H	TYPE:30W	WEIGHT:
SPEC.:5000K Ra70 L06403	DIM.: 0.28*0.137*0.102	SERIAL No.:
MFR.:	SUR.:0.25*0.1	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 154.95 lm/W			
MODEL	LHB01-30H	I _{max} (cd)	1674	S/MH(C0/180)	1.82
NOMINAL POWER(W)	30	LOR(%)	100.0	S/MH(C90/270)	1.80
RATED VOLTAGE(V)	230	TOTAL FLUX(lm)	4651.8	η UP,DN(C0-180)	0.0,50.1
NOMINAL FLUX(lm)	4651.76	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,49.9
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	1.75
TEST VOLTAGE(V)	230	η down(%)	100.0	CIBSE SHR MAX	1.75

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

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	1214	1217	1217	1217	1214	1218	1217	1218	0- 5	29.01	29.01	0.62,0.62
10	1230	1231	1234	1231	1230	1234	1234	1234	5- 10	87.63	116.6	2.51,2.51
15	1256	1260	1262	1260	1256	1266	1262	1266	10- 15	148.0	264.6	5.69,5.69
20	1298	1299	1307	1299	1298	1307	1307	1307	15- 20	211.2	475.9	10.2,10.2
25	1357	1358	1362	1358	1357	1367	1362	1367	20- 25	279.4	755.2	16.2,16.2
30	1442	1438	1439	1438	1442	1446	1439	1446	25- 30	354.7	1110	23.9,23.9
35	1549	1531	1511	1531	1549	1537	1511	1537	30- 35	438.4	1548	33.3,33.3
40	1650	1610	1579	1610	1650	1619	1579	1619	35- 40	525.7	2074	44.6,44.6
45	1659	1578	1556	1578	1659	1597	1556	1597	40- 45	599.3	2673	57.5,57.5
50	1449	1431	1396	1431	1449	1434	1396	1434	45- 50	616.6	3290	70.7,70.7
55	963.6	1029	1033	1029	963.6	982.7	1033	982.7	50- 55	531.0	3821	82.1,82.1
60	562.0	603.7	609.5	603.7	562.0	584.8	609.5	584.8	55- 60	364.0	4185	90,90
65	347.6	361.8	387.4	361.8	347.6	360.2	387.4	360.2	60- 65	228.5	4413	94.9,94.9
70	150.3	180.6	165.3	180.6	150.3	184.9	165.3	184.9	65- 70	135.4	4549	97.8,97.8
75	24.40	45.63	124.3	45.63	24.40	46.49	124.3	46.49	70- 75	54.37	4603	99,99
80	14.44	20.97	83.25	20.97	14.44	21.63	83.25	21.63	75- 80	27.01	4630	99.5,99.5
85	1.646	10.76	42.24	10.76	1.646	11.17	42.24	11.17	80- 85	15.97	4646	99.9,99.9
90	1.194	1.255	1.226	1.255	1.194	1.280	1.226	1.280	85- 90	5.682	4652	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): 2673.3 lm

%lum = 57.5%

%lamp = 57.5%

Conical surface Flux(120deg): 4184.9 lm

%lum = 90.0%

%lamp = 90.0%

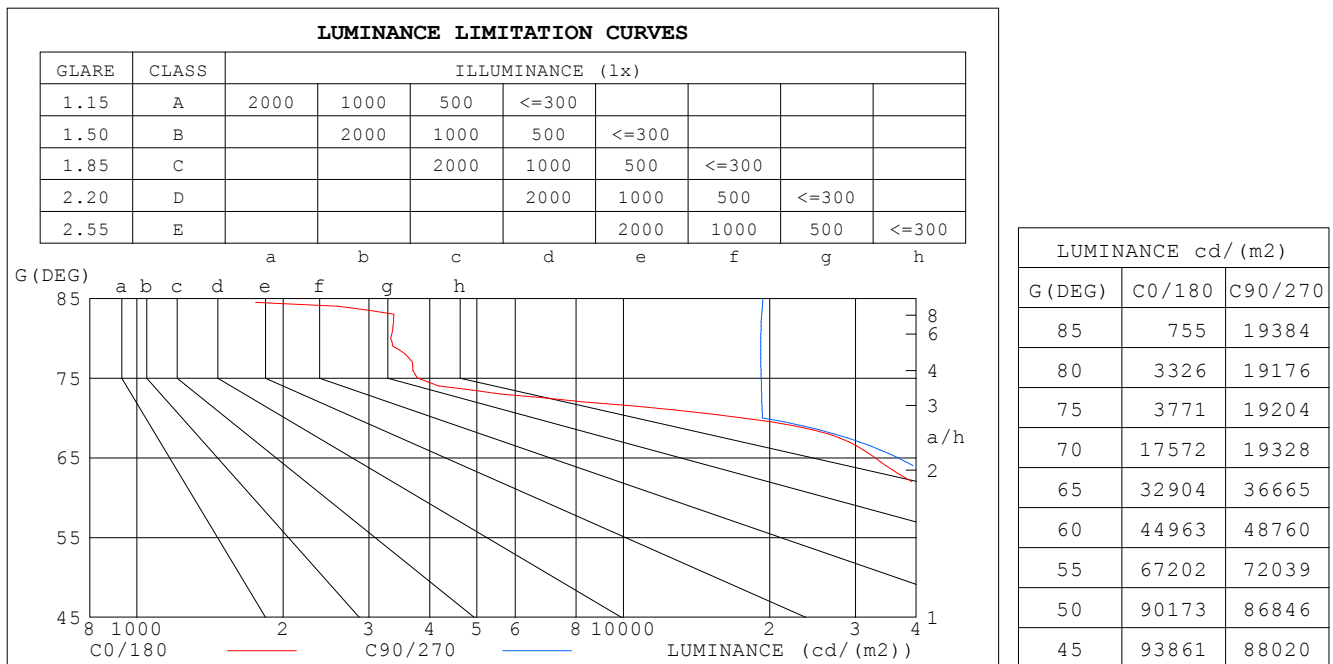
C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:2017-09-26

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

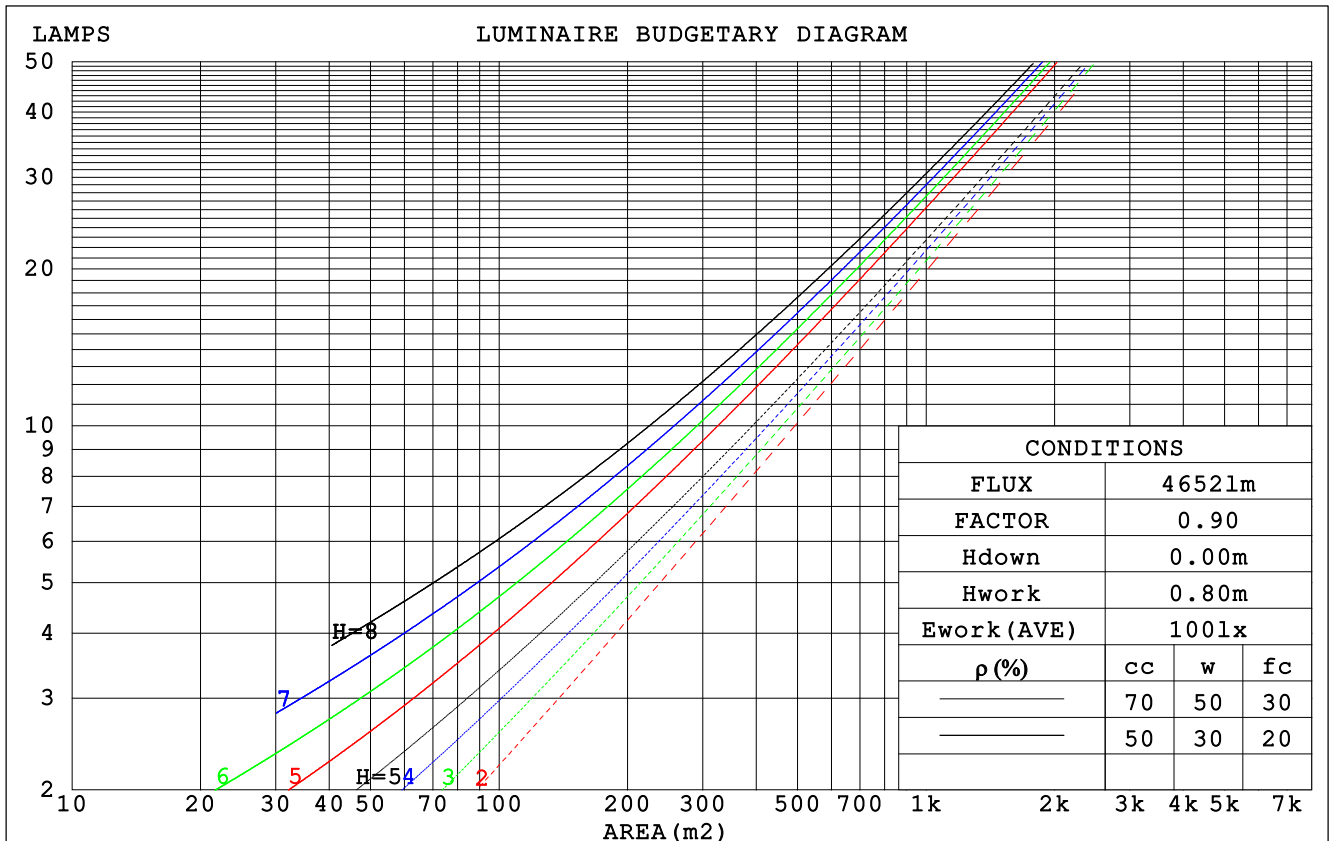
Checker:

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	1.00
1.0	1.06	1.02	.99	1.04	1.00	.97	.00	.97	.94	.96	.94	.91	.92	.90	.89	.87
2.0	.93	.87	.82	.92	.86	.81	.88	.83	.79	.85	.81	.77	.82	.79	.76	.74
3.0	.82	.75	.69	.81	.74	.68	.78	.72	.67	.75	.70	.66	.73	.68	.65	.63
4.0	.73	.65	.58	.72	.64	.58	.69	.62	.57	.67	.61	.56	.65	.60	.55	.53
5.0	.65	.56	.50	.64	.56	.49	.62	.54	.49	.60	.53	.48	.58	.52	.48	.46
6.0	.58	.49	.43	.57	.49	.43	.55	.48	.42	.54	.47	.42	.52	.46	.42	.40
7.0	.52	.43	.37	.51	.43	.37	.50	.42	.37	.48	.42	.37	.47	.41	.36	.34
8.0	.47	.39	.33	.46	.38	.33	.45	.38	.33	.44	.37	.32	.43	.37	.32	.30
9.0	.43	.35	.29	.42	.34	.29	.41	.34	.29	.40	.33	.29	.39	.33	.29	.27
10.0	.39	.31	.26	.39	.31	.26	.38	.31	.26	.37	.30	.26	.36	.30	.26	.24



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	.267	.152	.048	.260	.149	.047	.247	.142	.045	.235	.136	.044	.224	.130	.042		
2.0	.263	.144	.044	.256	.141	.044	.245	.136	.042	.235	.132	.041	.225	.127	.040		
3.0	.251	.133	.040	.245	.131	.040	.235	.127	.039	.226	.124	.038	.217	.120	.037		
4.0	.236	.123	.036	.232	.121	.036	.223	.118	.035	.214	.115	.035	.207	.112	.034		
5.0	.222	.113	.033	.218	.112	.033	.210	.109	.032	.203	.107	.032	.196	.105	.031		
6.0	.209	.105	.030	.205	.104	.030	.198	.101	.029	.191	.099	.029	.185	.097	.029		
7.0	.196	.097	.027	.193	.096	.027	.186	.094	.027	.180	.092	.027	.175	.091	.027		
8.0	.184	.090	.025	.181	.089	.025	.176	.088	.025	.170	.086	.025	.165	.085	.025		
9.0	.174	.084	.023	.171	.083	.023	.166	.082	.023	.161	.081	.023	.156	.079	.023		
10.0	.164	.079	.022	.162	.078	.022	.157	.077	.022	.152	.076	.022	.148	.075	.021		

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	.177	.157	.138	.152	.134	.119	.104	.092	.082	.060	.053	.048	.019	.017	.015	
2.0	.168	.132	.102	.144	.114	.088	.099	.079	.061	.057	.046	.036	.018	.015	.012	
3.0	.161	.114	.077	.138	.098	.067	.095	.068	.047	.055	.040	.028	.018	.013	.009	
4.0	.154	.101	.060	.132	.087	.052	.091	.061	.037	.052	.036	.022	.017	.012	.007	
5.0	.147	.090	.048	.126	.078	.042	.087	.055	.030	.050	.032	.018	.016	.010	.006	
6.0	.141	.082	.040	.121	.071	.035	.083	.050	.025	.048	.029	.015	.016	.010	.005	
7.0	.134	.075	.034	.116	.065	.029	.080	.046	.021	.046	.027	.012	.015	.009	.004	
8.0	.128	.069	.029	.111	.060	.025	.077	.042	.018	.045	.025	.011	.014	.008	.004	
9.0	.123	.065	.025	.106	.056	.022	.073	.039	.016	.043	.023	.009	.014	.008	.003	
10.0	.117	.060	.022	.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: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	27.8	29.3	28.1	29.5	29.7	27.9	29.4	28.2	29.6	29.8
3H	28.0	29.3	28.3	29.5	29.8	28.1	29.5	28.4	29.7	29.9
4H	27.9	29.1	28.2	29.4	29.7	28.1	29.4	28.5	29.7	29.9
6H	27.8	29.0	28.1	29.2	29.5	28.2	29.4	28.5	29.6	29.9
8H	27.7	28.9	28.1	29.2	29.4	28.2	29.3	28.5	29.6	29.9
12H	27.7	28.8	28.0	29.1	29.4	28.2	29.3	28.5	29.6	29.9
4H 2H	27.9	29.2	28.3	29.5	29.7	28.0	29.3	28.3	29.6	29.8
3H	28.2	29.3	28.5	29.6	29.9	28.3	29.4	28.7	29.7	30.0
4H	28.1	29.1	28.4	29.4	29.7	28.4	29.4	28.7	29.7	30.0
6H	28.0	28.9	28.4	29.2	29.6	28.5	29.4	28.9	29.7	30.1
8H	28.0	28.8	28.4	29.1	29.5	28.5	29.3	28.9	29.7	30.1
12H	27.9	28.7	28.3	29.0	29.4	28.6	29.3	29.0	29.7	30.1
8H 4H	28.0	28.8	28.4	29.2	29.5	28.3	29.1	28.7	29.5	29.8
6H	27.9	28.6	28.4	29.0	29.4	28.4	29.1	28.9	29.5	29.9
8H	27.9	28.5	28.3	28.9	29.3	28.5	29.1	29.0	29.5	30.0
12H	27.9	28.4	28.3	28.8	29.3	28.6	29.1	29.1	29.5	30.0
12H 4H	28.0	28.7	28.4	29.1	29.5	28.2	29.0	28.7	29.4	29.8
6H	27.9	28.5	28.3	28.9	29.3	28.4	29.0	28.8	29.4	29.8
8H	27.9	28.4	28.3	28.8	29.3	28.5	29.0	29.0	29.4	29.9
Variations with the observer position at spacings:										
S = 1.0H	+ 0.7 / - 0.8					+ 0.4 / - 0.5				
1.5H	+ 0.6 / - 1.7					+ 0.6 / - 1.5				
2.0H	+ 2.0 / - 2.5					+ 1.6 / - 2.2				

CIE Pub.117 Corrected 4652 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) $k(RI) \times RCR = 5$									
$k = 0.60$	56	44	37	55	44	37	54	43	37	30
0.80	68	56	49	67	56	49	65	55	48	41
1.00	78	67	60	77	66	60	74	68	59	52
1.25	86	76	69	84	75	69	82	74	68	61
1.50	91	82	75	89	81	75	86	79	74	66
2.00	98	90	84	96	89	83	93	87	82	75
2.50	101	94	89	99	93	88	96	90	86	78
3.00	104	98	93	102	97	92	98	94	90	82
4.00	108	103	98	105	101	97	101	98	94	86
5.00	110	105	102	107	103	100	103	100	97	88
ROOM INDEX	UF (total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

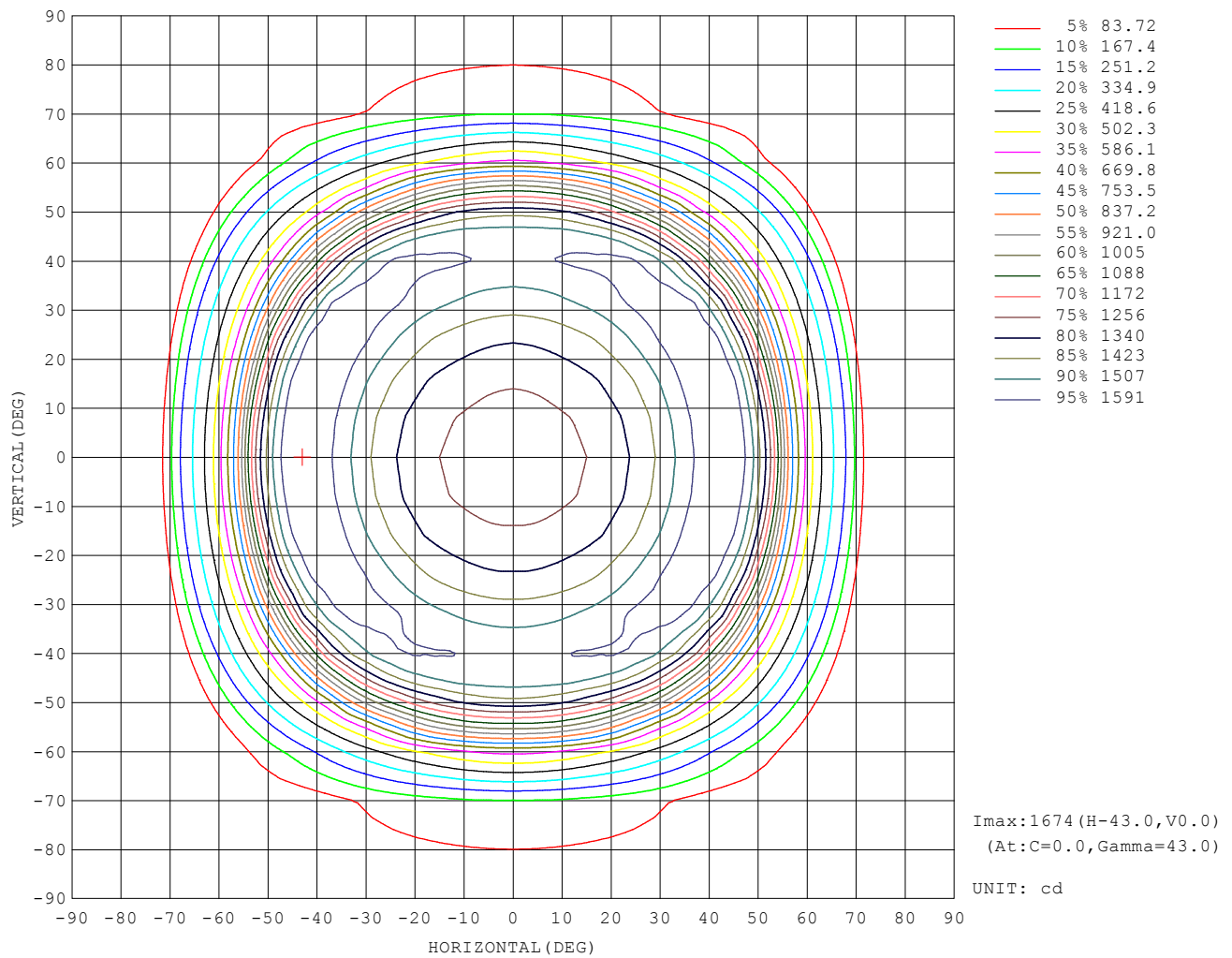
C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators:
 Test Date: 2017-09-26

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



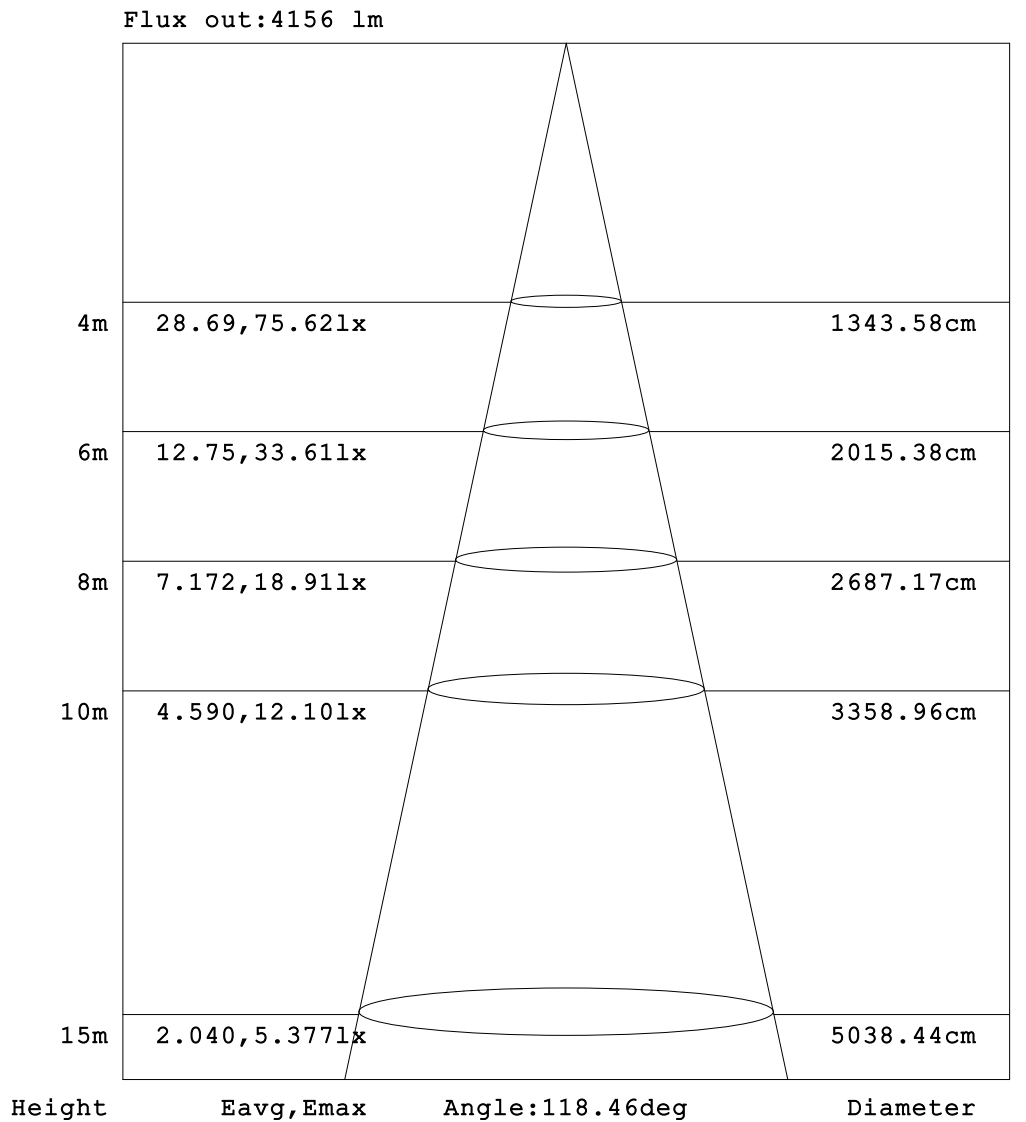
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2017-09-26

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.

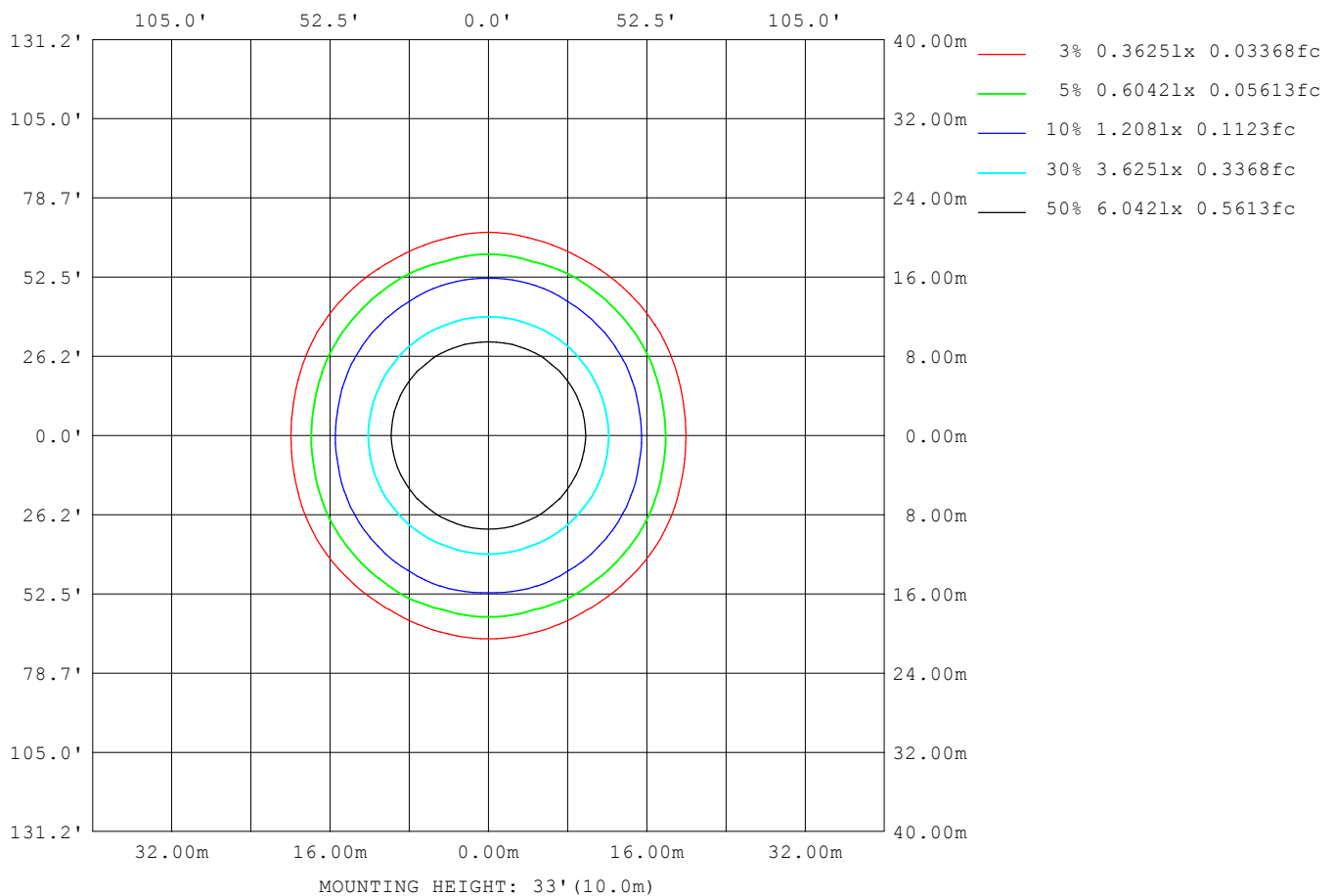
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2017-09-26

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



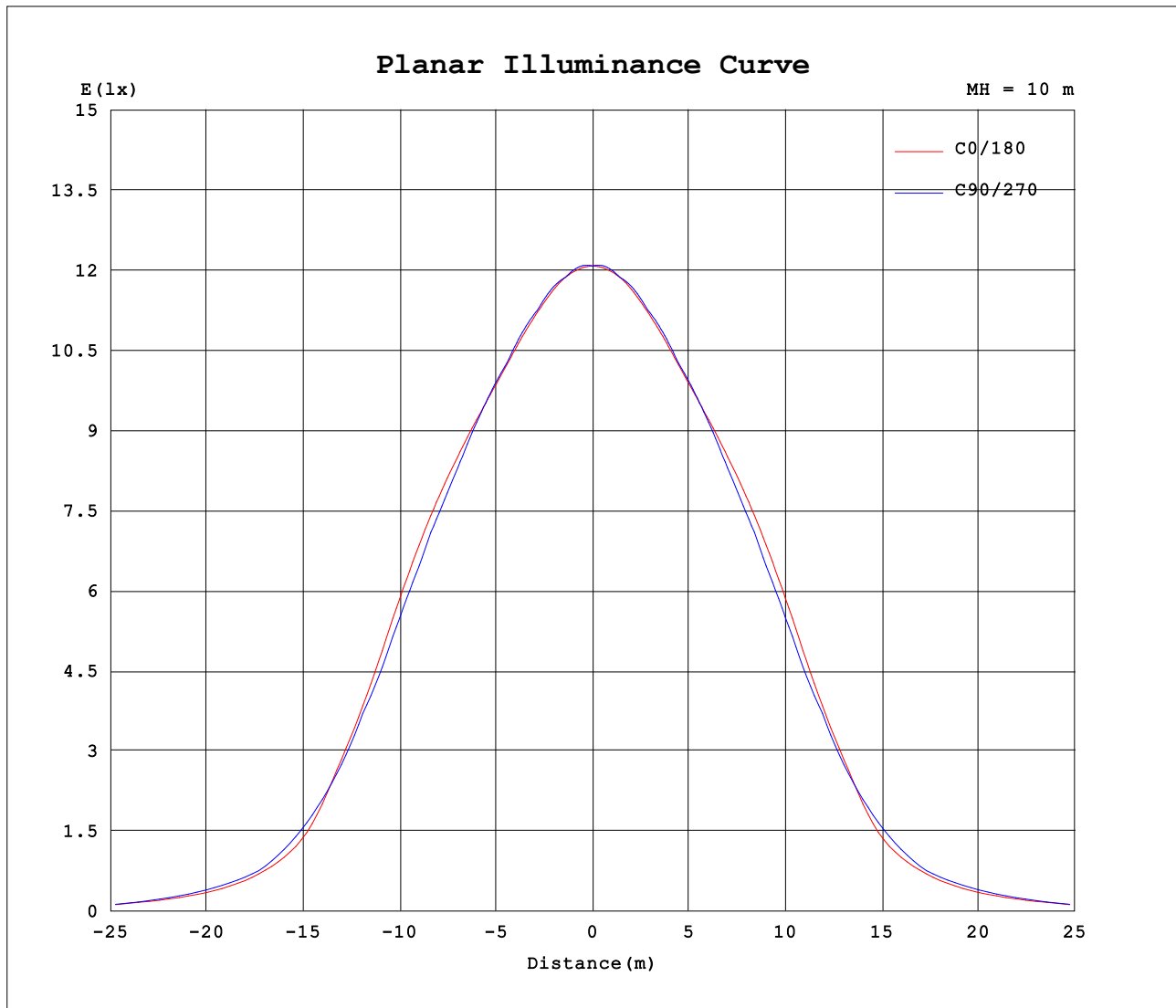
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2017-09-26

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: 2017-09-26

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:

