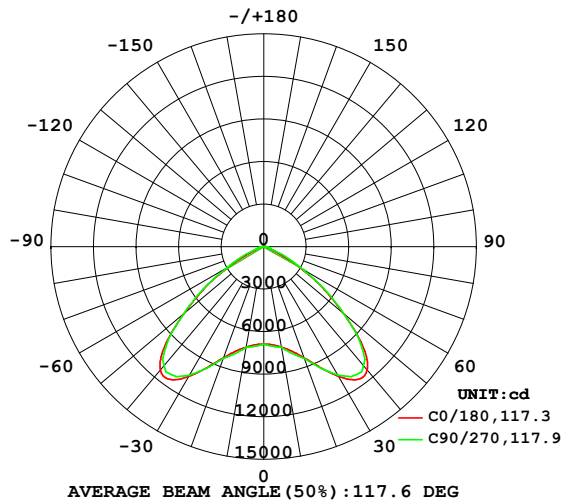


LUMINAIRE PHOTOMETRIC TEST REPORT

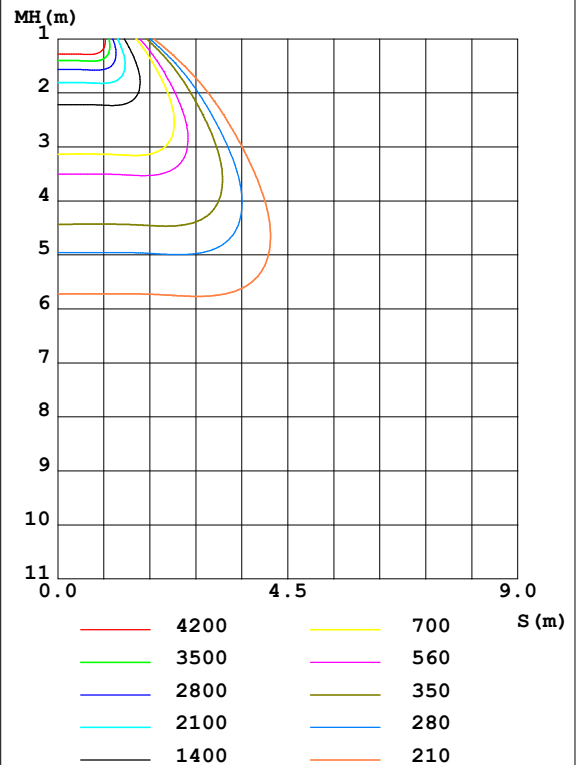
Test:U:230.0V I:0.8049A P:179.1W PF:0.9675 Lamp Flux:28280.4x1 lm		
NAME: LHB01-180H	TYPE:180W	WEIGHT:
SPEC.:5000K Ra70 L06403	DIM.: 0.718*0.275*0.102	SERIAL No.:
MFR.:	SUR.:0.255*0.69	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 157.90 lm/W			
MODEL	NICHIA3030	I _{max} (cd)	11576	S/MH(C0/180)	1.75
NOMINAL POWER(W)	180	LOR(%)	100.0	S/MH(C90/270)	1.75
RATED VOLTAGE(V)	230	TOTAL FLUX(lm)	28280	η UP,DN(C0-180)	0.0,50.0
NOMINAL FLUX(lm)	28280.4	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,50.0
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	1.50
TEST VOLTAGE(V)	230	η down(%)	100.0	CIBSE SHR MAX	1.55

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: 2017-11-04

Checker: LI

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	695.2	703.1	704.7	703.1	695.2	703.8	704.7	703.8	0- 5	166.6	166.6	0.59,0.59
10	719.6	726.5	721.4	726.5	719.6	729.0	721.4	729.0	5- 10	511.0	677.7	2.4,2.4
15	763.0	766.0	780.3	766.0	763.0	771.2	780.3	771.2	10- 15	888.5	1566	5.54,5.54
20	834.1	845.1	839.2	845.1	834.1	852.0	839.2	852.0	15- 20	1333	2899	10.3,10.3
25	938.4	940.9	942.4	940.9	938.4	946.1	942.4	946.1	20- 25	1873	4772	16.9,16.9
30	1056	1047	1046	1047	1056	1044	1046	1044	25- 30	2528	7299	25.8,25.8
35	1145	1125	1110	1125	1145	1112	1110	1112	30- 35	3225	10525	37.2,37.2
40	1135	1130	1094	1130	1135	1117	1094	1117	35- 40	3776	14300	50.6,50.6
45	985.1	977.6	964.9	977.6	985.1	972.5	964.9	972.5	40- 45	3902	18203	64.4,64.4
50	734.0	739.2	737.7	739.2	734.0	738.4	737.7	738.4	45- 50	3460	21663	76.6,76.6
55	506.8	512.4	517.7	512.4	506.8	506.2	517.7	506.2	50- 55	2690	24353	86.1,86.1
60	283.3	303.8	297.7	303.8	283.3	302.6	297.7	302.6	55- 60	1859	26212	92.7,92.7
65	110.4	149.4	176.9	149.4	110.4	151.3	176.9	151.3	60- 65	1029	27241	96.3,96.3
70	55.46	63.15	56.10	63.15	55.46	64.87	56.10	64.87	65- 70	494.0	27734	98.1,98.1
75	34.25	37.29	42.19	37.29	34.25	37.13	42.19	37.13	70- 75	251.2	27986	99,99
80	20.19	24.00	28.29	24.00	20.19	23.84	28.29	23.84	75- 80	165.1	28151	99.5,99.5
85	7.049	12.16	14.38	12.16	7.049	12.18	14.38	12.18	80- 85	96.79	28248	99.9,99.9
90	0.3400	0.4285	0.4806	0.4285	0.3400	0.6512	0.4806	0.6512	85- 90	32.84	28280	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): 18203 lm

%lum = 64.4%

%lamp = 64.4%

Conical surface Flux(120deg): 26212 lm

%lum = 92.7%

%lamp = 92.7%

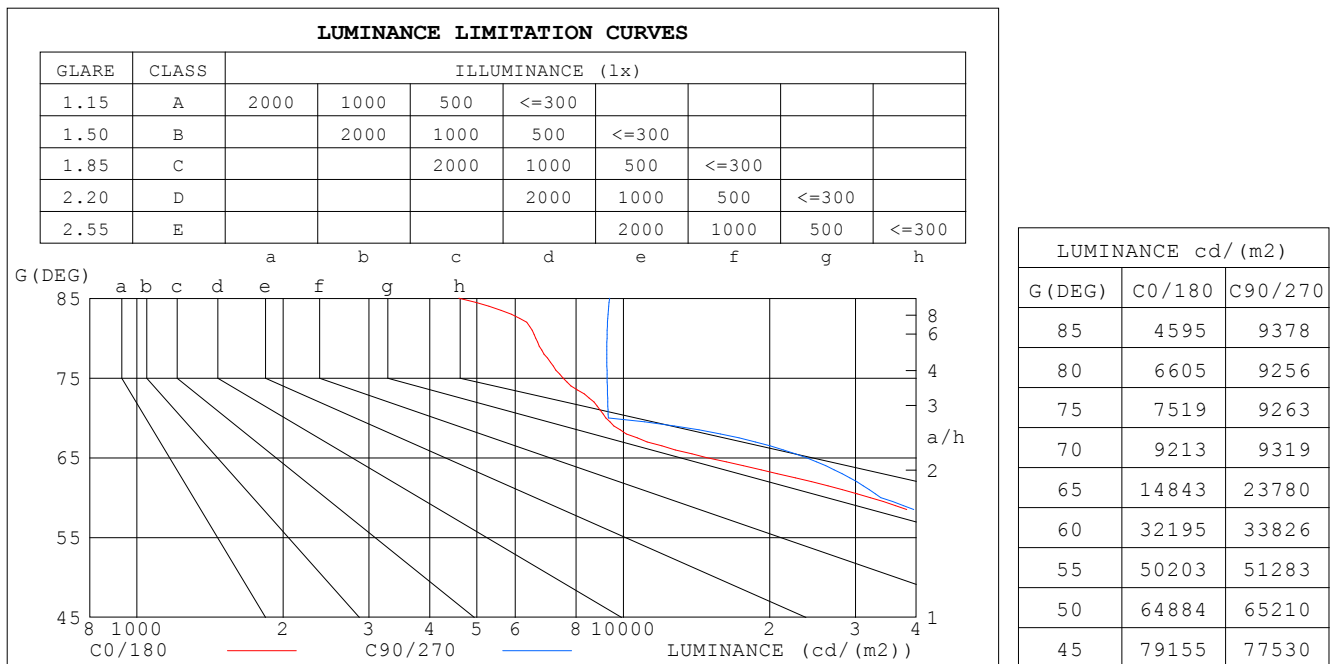
C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:2017-11-04

Checker: LI

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: 2017-11-04

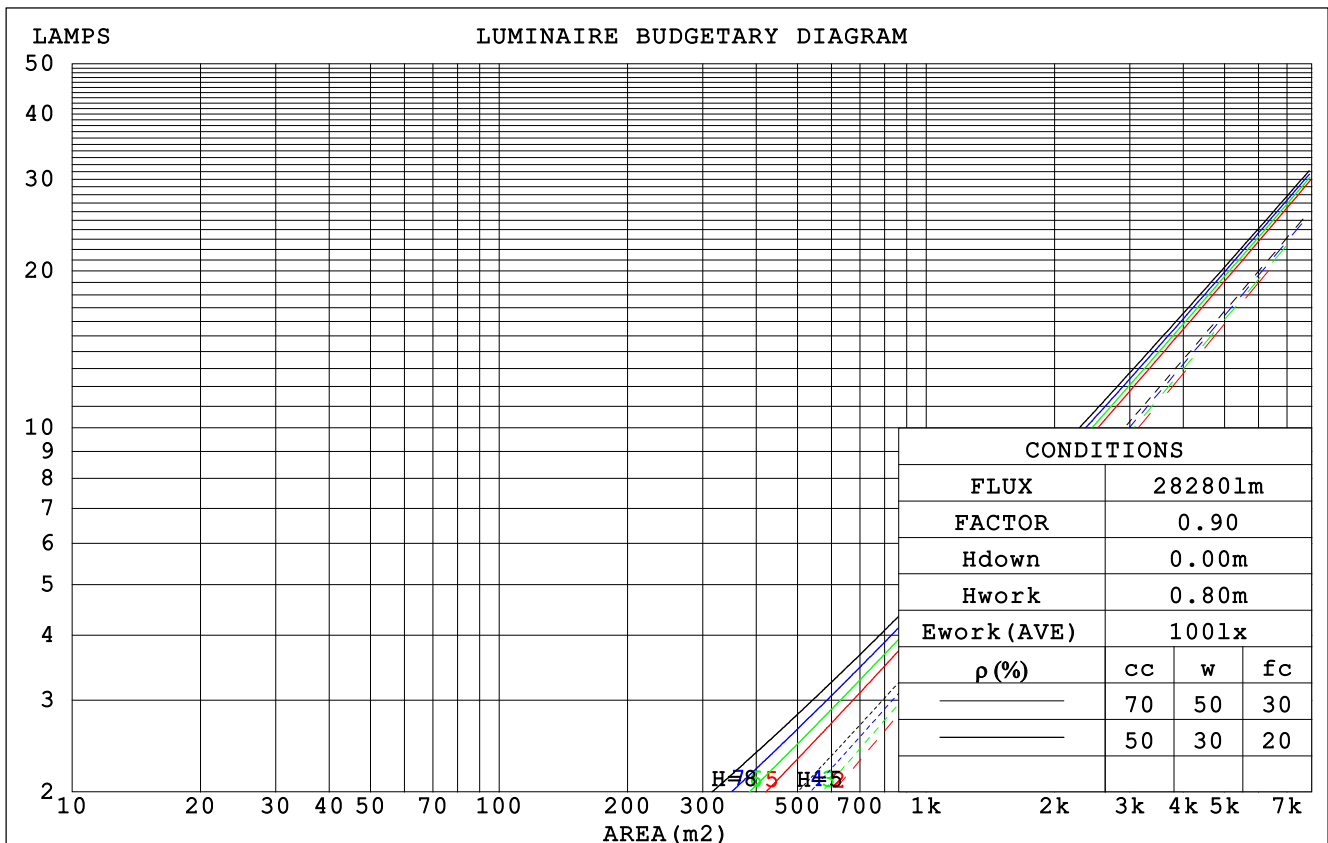
Checker: LI

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	1.07	1.03	.00	1.04	1.01	.98	1.00	.98	.95	.96	.94	.92	.93	.91	.90	.88
2.0	.95	.89	.84	.93	.87	.83	.89	.85	.81	.86	.82	.79	.83	.80	.77	.75
3.0	.84	.77	.71	.82	.76	.70	.80	.74	.69	.77	.72	.68	.74	.70	.67	.65
4.0	.75	.67	.60	.73	.66	.60	.71	.64	.59	.69	.63	.58	.67	.62	.58	.56
5.0	.67	.58	.52	.66	.58	.52	.64	.57	.51	.62	.56	.51	.60	.55	.50	.48
6.0	.60	.51	.45	.59	.51	.45	.57	.50	.45	.56	.49	.44	.54	.48	.44	.42
7.0	.54	.46	.40	.53	.45	.40	.52	.44	.39	.50	.44	.39	.49	.43	.39	.37
8.0	.49	.41	.35	.48	.40	.35	.47	.40	.35	.46	.39	.34	.45	.39	.34	.32
9.0	.45	.37	.31	.44	.36	.31	.43	.36	.31	.42	.35	.31	.41	.35	.31	.29
10.0	.41	.33	.28	.40	.33	.28	.39	.32	.28	.38	.32	.27	.38	.32	.27	.26



C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators:
 Test Date: 2017-11-04

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: LI

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	.256	.146	.046	.249	.142	.045	.236	.136	.043	.224	.129	.042	.213	.124	.040		
2.0	.251	.138	.042	.245	.135	.042	.234	.130	.040	.224	.125	.039	.214	.121	.038		
3.0	.240	.128	.038	.235	.126	.038	.225	.122	.037	.216	.118	.036	.207	.115	.035		
4.0	.228	.118	.035	.223	.117	.034	.214	.114	.034	.206	.111	.033	.198	.108	.033		
5.0	.215	.109	.032	.211	.108	.031	.203	.106	.031	.195	.103	.031	.189	.101	.030		
6.0	.202	.102	.029	.199	.100	.029	.192	.098	.029	.185	.096	.028	.179	.094	.028		
7.0	.191	.094	.027	.188	.093	.027	.181	.092	.026	.175	.090	.026	.170	.088	.026		
8.0	.180	.088	.025	.177	.087	.025	.171	.086	.024	.166	.084	.024	.161	.083	.024		
9.0	.170	.082	.023	.168	.082	.023	.162	.080	.023	.158	.079	.023	.153	.078	.022		
10.0	.161	.077	.021	.159	.077	.021	.154	.075	.021	.150	.074	.021	.145	.073	.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	.139	.151	.134	.119	.103	.092	.082	.059	.054	.048	.019	.017	.016		
2.0	.167	.132	.103	.143	.114	.089	.098	.079	.062	.056	.046	.036	.018	.015	.012		
3.0	.159	.114	.078	.136	.098	.068	.093	.068	.048	.054	.040	.028	.017	.013	.009		
4.0	.152	.101	.062	.130	.087	.053	.089	.061	.038	.052	.035	.022	.017	.012	.007		
5.0	.145	.090	.049	.124	.078	.043	.086	.054	.030	.050	.032	.018	.016	.010	.006		
6.0	.138	.082	.041	.119	.071	.035	.082	.049	.025	.048	.029	.015	.015	.010	.005		
7.0	.132	.075	.034	.114	.065	.030	.079	.045	.021	.046	.027	.013	.015	.009	.004		
8.0	.127	.069	.029	.109	.060	.026	.075	.042	.018	.044	.025	.011	.014	.008	.004		
9.0	.121	.064	.026	.104	.056	.022	.072	.039	.016	.042	.023	.009	.014	.008	.003		
10.0	.116	.060	.023	.100	.052	.020	.069	.037	.014	.040	.022	.008	.013	.007	.003		

C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2017-11-04

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: LI

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	26.5	27.9	26.8	28.1	28.3	26.6	28.0	26.9	28.2	28.4
3H	26.4	27.7	26.7	28.0	28.2	26.7	28.0	27.0	28.2	28.4
4H	26.4	27.6	26.7	27.8	28.1	26.6	27.8	26.9	28.1	28.3
6H	26.3	27.4	26.6	27.7	28.0	26.6	27.7	26.9	28.0	28.3
8H	26.3	27.4	26.6	27.6	27.9	26.5	27.7	26.9	27.9	28.2
12H	26.2	27.3	26.6	27.6	27.9	26.5	27.6	26.9	27.9	28.2
4H 2H	26.5	27.7	26.8	28.0	28.2	26.6	27.9	26.9	28.1	28.3
3H	26.5	27.5	26.8	27.8	28.1	26.7	27.8	27.1	28.1	28.4
4H	26.5	27.4	26.8	27.7	28.1	26.7	27.7	27.1	28.0	28.3
6H	26.4	27.3	26.8	27.6	28.0	26.7	27.5	27.1	27.9	28.2
8H	26.4	27.2	26.8	27.5	27.9	26.7	27.5	27.1	27.8	28.2
12H	26.4	27.1	26.8	27.5	27.9	26.7	27.4	27.1	27.8	28.2
8H 4H	26.4	27.1	26.8	27.5	27.9	26.6	27.4	27.0	27.7	28.1
6H	26.4	27.0	26.8	27.4	27.8	26.6	27.3	27.1	27.7	28.1
8H	26.4	26.9	26.8	27.4	27.8	26.7	27.2	27.1	27.6	28.1
12H	26.4	26.8	26.8	27.3	27.8	26.7	27.2	27.2	27.6	28.1
12H 4H	26.3	27.0	26.8	27.4	27.8	26.6	27.3	27.0	27.7	28.1
6H	26.4	26.9	26.8	27.3	27.8	26.6	27.2	27.1	27.6	28.0
8H	26.4	26.8	26.8	27.3	27.8	26.6	27.1	27.1	27.6	28.0
Variations with the observer position at spacings:										
S = 1.0H	+ 1.1 / - 1.3					+ 1.0 / - 1.1				
1.5H	+ 0.7 / - 0.7					+ 0.6 / - 0.7				
2.0H	+ 2.3 / - 4.1					+ 2.1 / - 3.7				

CIE Pub.117 Corrected 28280 lm Total Lamp Luminous Flux.(8log(F/F0) = 11.6)

C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2017-11-04

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: LI

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) $k(RI) \times RCR = 5$									
$k = 0.60$	60	48	42	59	48	42	58	48	41	35
0.80	71	60	53	70	60	53	68	59	53	46
1.00	81	71	64	80	70	64	77	71	63	57
1.25	88	79	73	87	78	72	84	77	71	65
1.50	93	84	78	91	84	78	89	82	77	70
2.00	99	92	87	98	91	86	94	89	85	78
2.50	102	96	91	101	95	90	97	92	88	81
3.00	105	100	95	103	98	94	100	95	92	84
4.00	109	104	100	106	102	98	102	99	96	87
5.00	110	106	103	108	104	101	104	101	98	89
ROOM INDEX	UF (total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

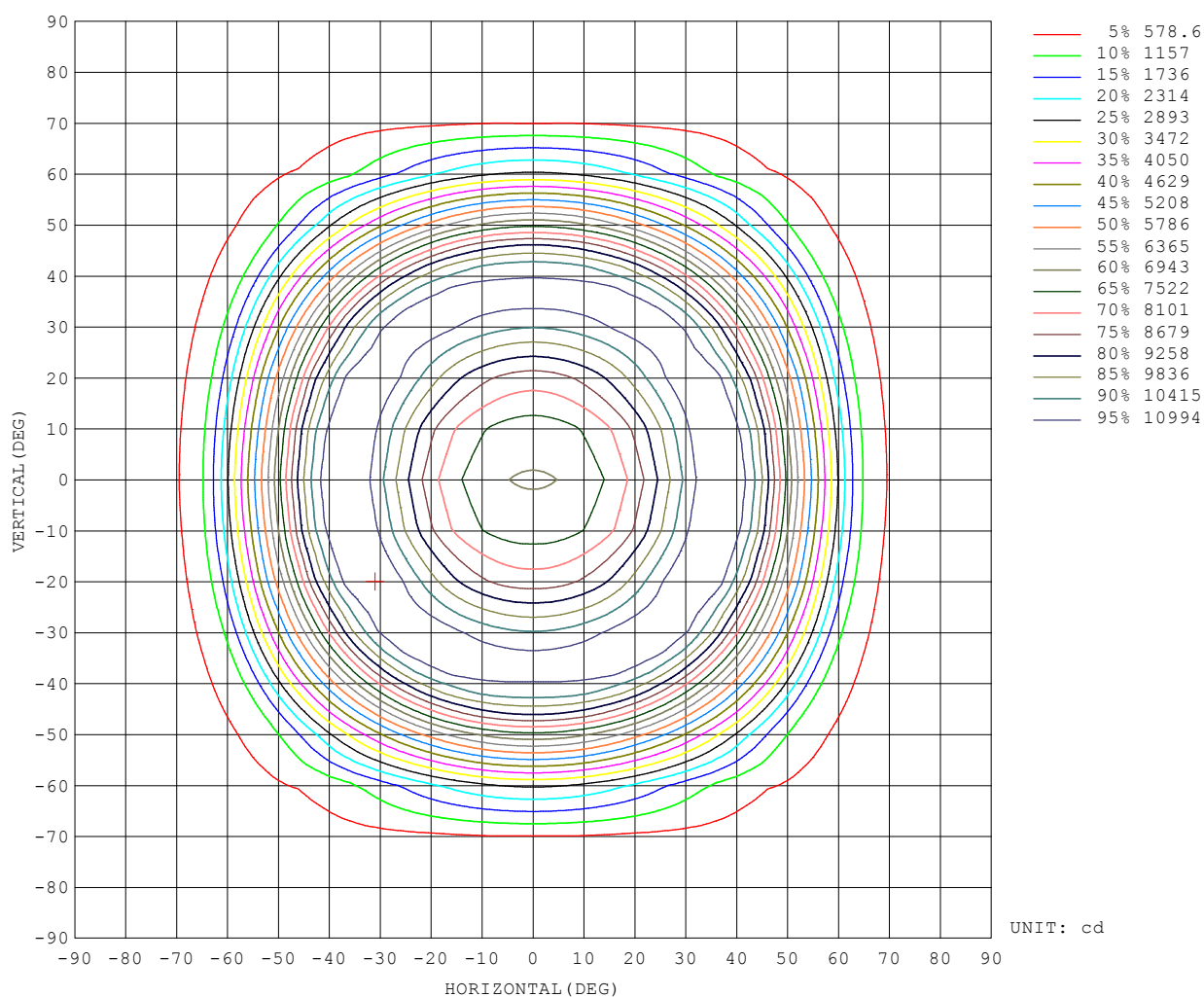
C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators:
 Test Date: 2017-11-04

Checker: LI

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



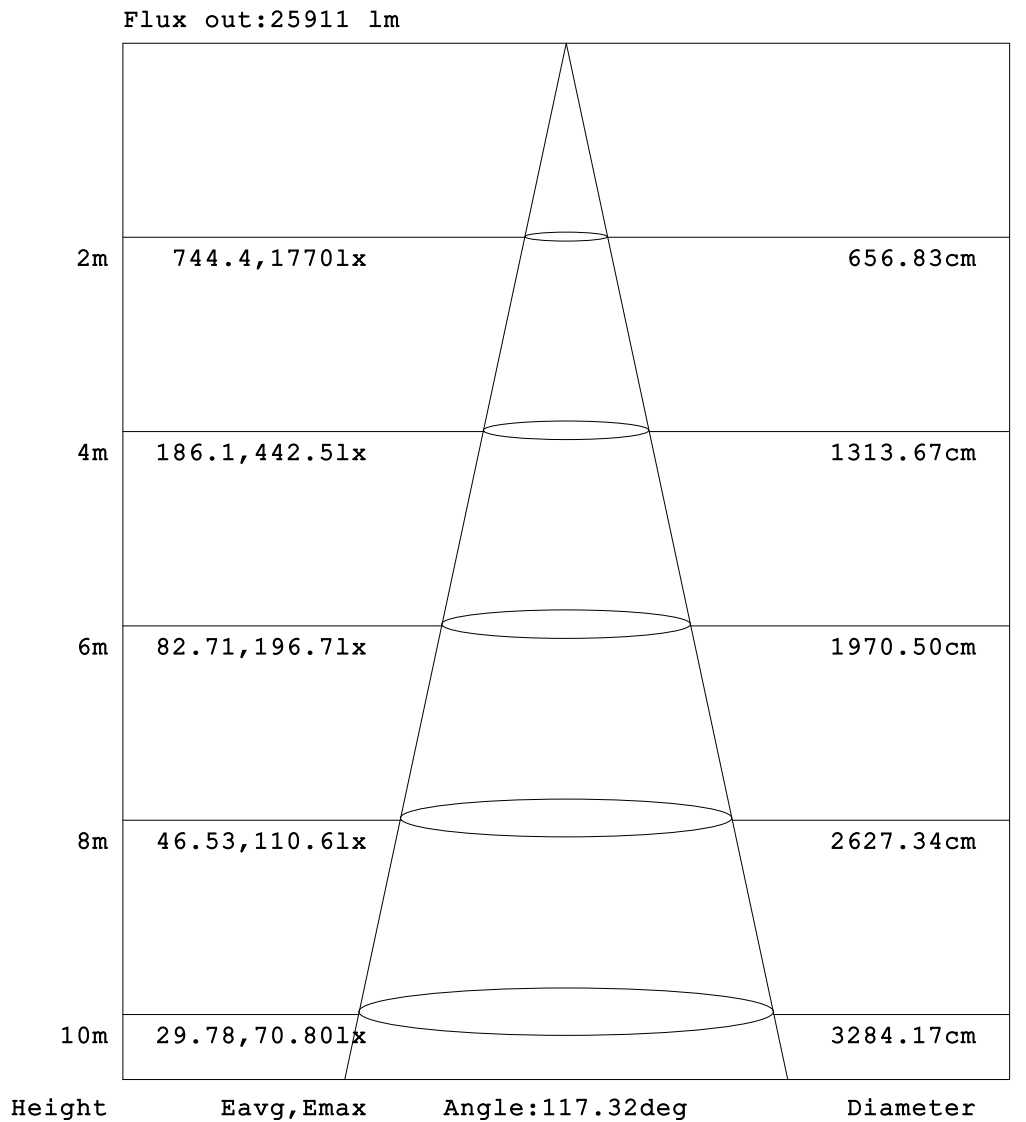
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2017-11-04

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: LI

Assessor:

AAI Figure



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

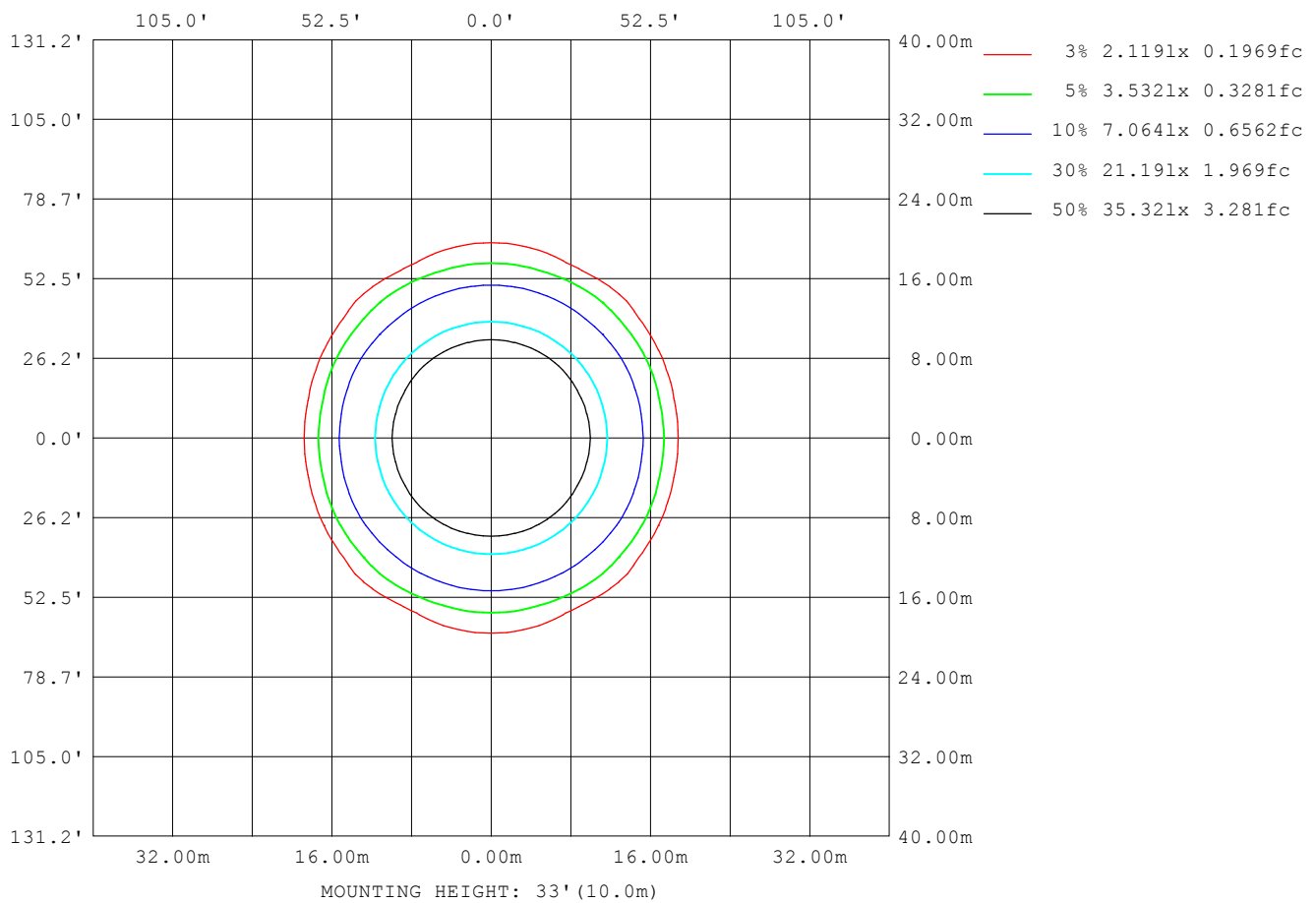
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2017-11-04

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: LI

Assessor:

ISOLUX DIAGRAM



C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2017-11-04

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: LI

Assessor:

LED Avg.L Report

Test:U:230.0V I:0.8049A P:179.1W PF:0.9675 Lamp Flux:28280.4x1 lm		
NAME: LHB01-180H	TYPE:180W	WEIGHT:
SPEC.:5000K Ra70 L06403	DIM.: 0.718*0.275*0.102	SERIAL No.:
MFR.:	SUR.:0.255*0.69	Shielding Angle:

AvgL	cd/m2
L_0~180 (65) av	14843
L_0~180 (75) av	7519
L_0~180 (85) av	4595
L_90~270 (65) av	23780
L_90~270 (75) av	9263
L_90~270 (85) av	9378
L_45 (65) av	20215
L_45 (75) av	8169
L_45 (85) av	7933

Standard: GB/T 29293-2012

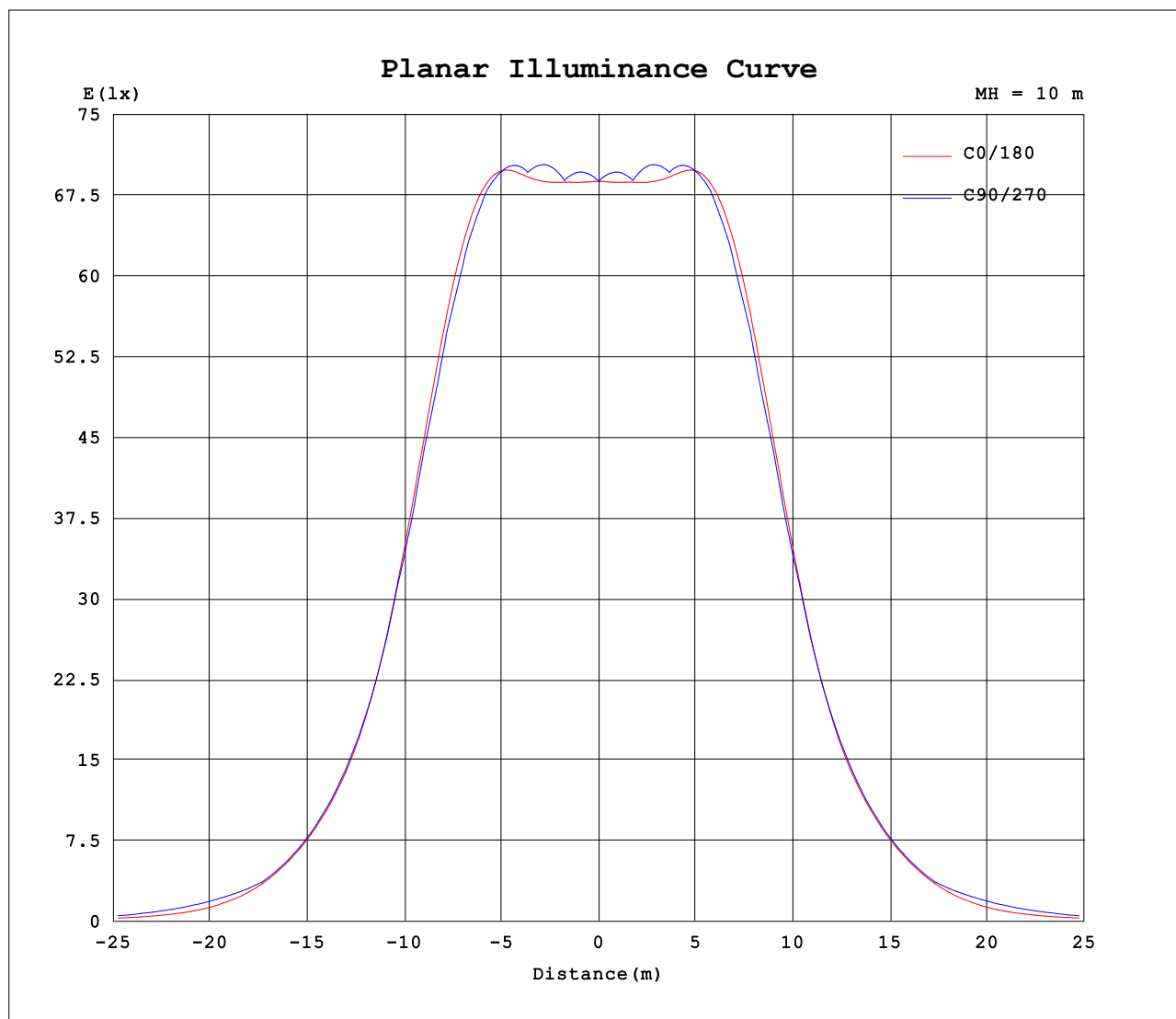
C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:2017-11-04

Checker: LI

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: 2017-11-04

Checker: LI

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:

Assessor:

Assessor:

Assessor: