

LED Downlight T150-18W-940-60



Light Output Ratio:	100.0%	
Luminaire Power:	20.85 W	
SHR Nominal:	1.00	Calculated using the TM5
SHR Maximum:	1.00	fine grid method.

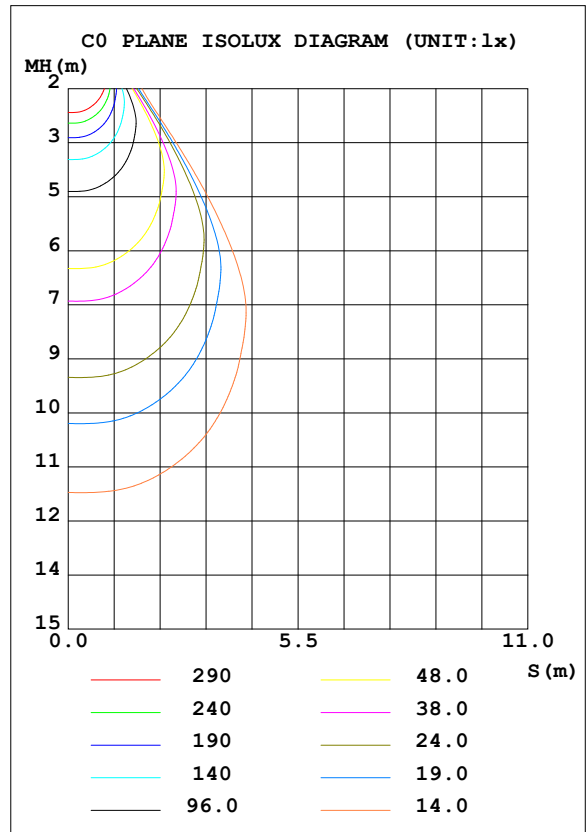
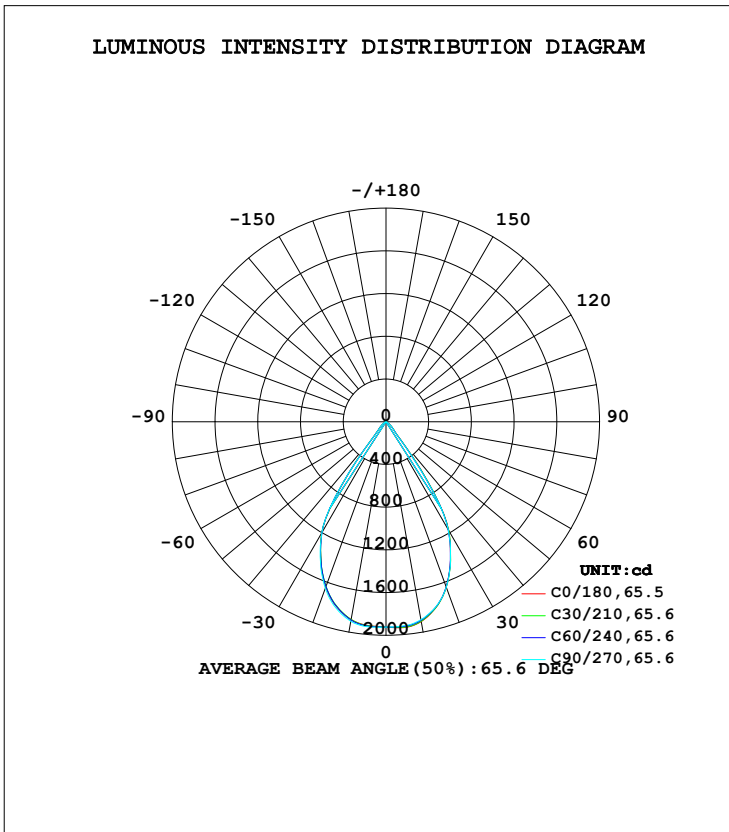
C Range: 0 - 360DEG
 C Interval: 15.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: Men Yongjian
 Test Date: 2017-11-08

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.288
 Humidity: 56%
 Test Distance: 5.850m [K=1.0000]
 Remarks:

LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:220.9V I:0.0952A P:20.85W PF:0.9674 Freq:49.90Hz Lamp Flux:1869.85x1 lm		
NAME: T150-18W-940-60	TYPE:Downlight	SERIAL No.:
SPEC.:4000K	DIM.: φ160mm*H100mm	
MFR.: NEKO LIGHTING AG		

DATA OF LAMP		PHOTOMETRIC DATA Eff: 89.68 lm/W			
MODEL	CITIZEN-4000K	I _{max} (cd)	1935	S/MH (C0/180)	0.96
NOMINAL POWER (W)	21	LOR (%)	100.0	S/MH (C90/270)	0.96
RATED VOLTAGE (V)	220	TOTAL FLUX (lm)	1869.9	η UP, DN (C0-180)	0.0, 49.8
NOMINAL FLUX (lm)	1869.85	CIE CLASS	DIRECT	η UP, DN (C180-360)	0.0, 50.2
LAMPS INSIDE	1	η up (%)	0.0	CIBSE SHR NOM	1.00
TEST VOLTAGE (V)	2209	η down (%)	100.0	CIBSE SHR MAX	1.00



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ZONAL FLUX DIAGRAM

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γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum, lamp
10	1900	1895	1882	1880	1880	1880	1897	1897	0- 10	182.6	182.6	9.76,9.76
20	1648	1655	1650	1644	1648	1634	1661	1649	10- 20	502.9	685.5	36.7,36.7
30	1174	1179	1168	1181	1207	1195	1204	1175	20- 30	654.9	1340	71.7,71.7
40	170.9	172.1	157.3	156.7	170.8	162.0	167.6	165.7	30- 40	414.8	1755	93.9,93.9
50	60.84	61.67	57.76	57.04	59.73	56.32	55.07	56.25	40- 50	73.68	1829	97.8,97.8
60	15.34	15.31	13.12	13.34	15.44	14.06	13.13	13.07	50- 60	29.95	1859	99.4,99.4
70	5.093	5.144	4.433	4.321	5.224	5.062	4.408	4.249	60- 70	8.328	1867	99.9,99.9
80	0.6009	0.6198	0.5347	0.4846	0.4702	0.4514	0.4418	0.4819	70- 80	2.514	1870	100,100
90	0.1182	0.1161	0.1138	0.1091	0.0591	0.0591	0.0591	0.0589	80- 90	0.1546	1870	100,100
100									90-100			
110									100-110			
120									110-120			
130									120-130			
140									130-140			
150									140-150			
160									150-160			
170									160-170			
180									170-180			
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

Conical surface Flux(90deg): 1799.1 lm

%lum = 96.2%
%lamp = 96.2%

Conical surface Flux(120deg): 1858.9 lm

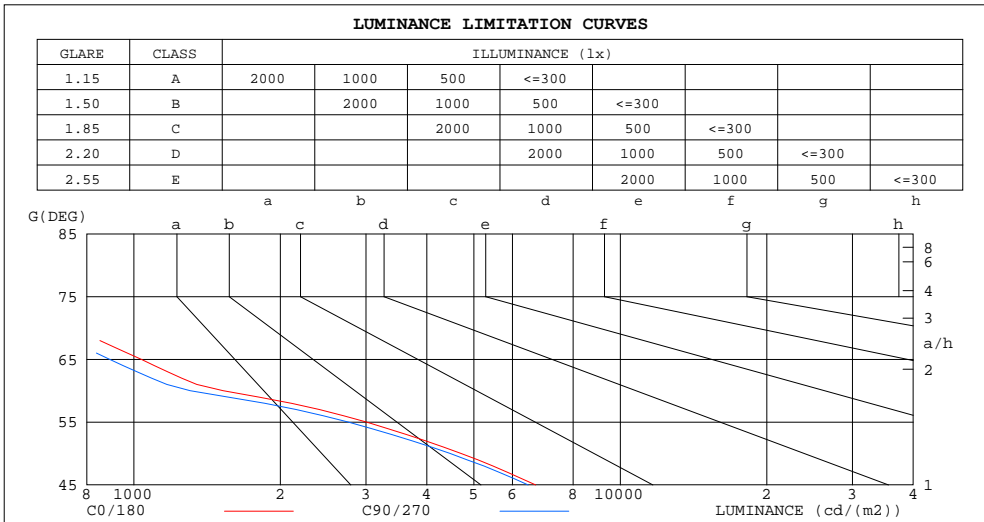
%lum = 99.4%
%lamp = 99.4%

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LUMINANCE LIMITATION CURVES

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LUMINANCE cd/(m2)		
G(DEG)	C0/180	C90/270
85	77	74
80	172	153
75	468	415
70	740	644
65	1035	891
60	1525	1305
55	3006	2757
50	4703	4467
45	6696	6464

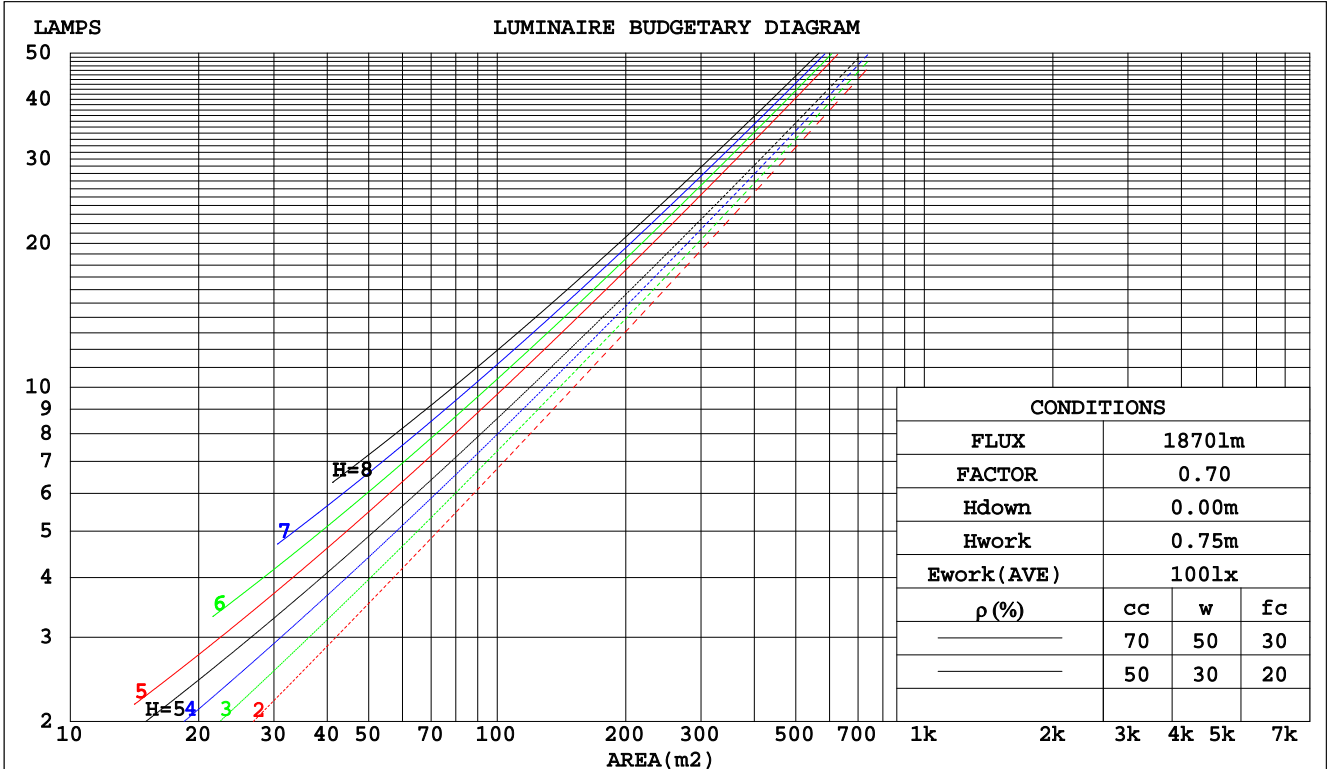
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CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

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pcc	80%			70%			50%			30%			10%			0
	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρw																0
ρfc																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	1.11	1.08	1.06	1.09	1.06	1.04	1.05	1.03	1.01	1.01	.99	.98	.97	.96	.95	.93
2.0	1.03	.99	.96	1.01	.98	.94	.98	.95	.92	.95	.93	.90	.92	.90	.89	.87
3.0	.96	.91	.87	.95	.90	.86	.92	.88	.85	.90	.86	.84	.87	.85	.82	.81
4.0	.90	.84	.80	.88	.83	.79	.86	.82	.78	.84	.81	.78	.82	.79	.77	.75
5.0	.84	.78	.74	.83	.77	.73	.81	.76	.73	.79	.75	.72	.78	.74	.71	.70
6.0	.79	.73	.68	.78	.72	.68	.76	.71	.68	.75	.71	.67	.74	.70	.67	.65
7.0	.74	.68	.64	.73	.67	.63	.72	.67	.63	.71	.66	.63	.70	.66	.62	.61
8.0	.70	.64	.59	.69	.63	.59	.68	.63	.59	.67	.62	.59	.66	.62	.59	.57
9.0	.66	.60	.56	.65	.59	.56	.64	.59	.55	.63	.59	.55	.62	.58	.55	.54
10.0	.62	.56	.52	.62	.56	.52	.61	.56	.52	.60	.55	.52	.59	.55	.52	.50



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WEC AND CCEC

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ρw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρfc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Wall Exitance Coefficients(WEC)									
0.0																
1.0	.179	.102	.032	.172	.098	.031	.159	.091	.029	.148	.085	.027	.137	.079	.026	
2.0	.171	.094	.029	.166	.091	.028	.155	.086	.027	.145	.082	.026	.136	.077	.024	
3.0	.164	.087	.026	.159	.085	.026	.150	.081	.025	.141	.077	.024	.134	.074	.023	
4.0	.156	.081	.024	.152	.079	.023	.144	.076	.023	.137	.073	.022	.130	.071	.022	
5.0	.149	.076	.022	.145	.075	.022	.138	.072	.021	.132	.070	.021	.126	.067	.020	
6.0	.142	.071	.020	.139	.070	.020	.133	.068	.020	.127	.066	.019	.122	.064	.019	
7.0	.136	.067	.019	.133	.066	.019	.128	.065	.019	.123	.063	.018	.118	.061	.018	
8.0	.130	.064	.018	.128	.063	.018	.123	.061	.018	.119	.060	.017	.114	.059	.017	
9.0	.125	.060	.017	.123	.060	.017	.118	.059	.017	.114	.057	.016	.111	.056	.016	
10.0	.120	.058	.016	.118	.057	.016	.114	.056	.016	.110	.055	.016	.107	.054	.015	

ρcc	80%			70%			50%			30%			10%			0
ρw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρfc	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	.171	.157	.145	.147	.135	.125	.100	.093	.086	.058	.054	.050	.018	.017	.016	
2.0	.156	.132	.113	.134	.114	.097	.092	.079	.068	.053	.046	.040	.017	.015	.013	
3.0	.144	.114	.089	.123	.098	.077	.085	.068	.054	.049	.040	.032	.016	.013	.010	
4.0	.134	.099	.072	.115	.085	.063	.079	.060	.044	.046	.035	.026	.015	.011	.009	
5.0	.125	.087	.059	.108	.076	.052	.074	.053	.036	.043	.031	.022	.014	.010	.007	
6.0	.118	.078	.049	.101	.068	.043	.070	.047	.030	.041	.028	.018	.013	.009	.006	
7.0	.112	.071	.042	.096	.061	.036	.066	.043	.026	.039	.025	.015	.012	.008	.005	
8.0	.106	.064	.036	.091	.056	.031	.063	.039	.022	.037	.023	.013	.012	.008	.004	
9.0	.101	.059	.031	.087	.051	.027	.060	.036	.019	.035	.021	.011	.011	.007	.004	
10.0	.097	.055	.027	.083	.048	.024	.058	.034	.017	.034	.020	.010	.011	.007	.003	

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 Humidity:56%
 Test Distance:5.850m [K=1.0000]
 Remarks:

UGR(Unified Glare Rating) Table

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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	14.5	15.5	14.8	15.7	15.8	14.4	15.4	14.6	15.5	15.7
3H	14.4	15.3	14.6	15.5	15.7	14.2	15.1	14.5	15.3	15.5
4H	14.3	15.1	14.6	15.4	15.6	14.2	15.0	14.4	15.2	15.4
6H	14.2	15.0	14.5	15.2	15.5	14.1	14.8	14.4	15.1	15.3
8H	14.2	14.9	14.5	15.2	15.4	14.0	14.8	14.3	15.0	15.3
12H	14.1	14.8	14.4	15.1	15.4	14.0	14.7	14.3	15.0	15.2
4H 2H	14.3	15.1	14.6	15.4	15.6	14.2	15.0	14.4	15.2	15.4
3H	14.2	14.9	14.5	15.1	15.4	14.0	14.7	14.3	15.0	15.3
4H	14.1	14.7	14.4	15.0	15.3	13.9	14.6	14.3	14.9	15.2
6H	14.0	14.5	14.4	14.9	15.2	13.8	14.4	14.2	14.7	15.1
8H	13.9	14.5	14.3	14.8	15.2	13.8	14.3	14.2	14.7	15.0
12H	13.9	14.4	14.3	14.7	15.1	13.7	14.2	14.1	14.6	15.0
8H 4H	13.9	14.5	14.3	14.8	15.2	13.8	14.3	14.2	14.7	15.0
6H	13.8	14.3	14.3	14.7	15.1	13.7	14.1	14.1	14.5	14.9
8H	13.8	14.2	14.2	14.6	15.0	13.6	14.0	14.1	14.4	14.9
12H	13.7	14.0	14.2	14.5	15.0	13.6	13.9	14.0	14.3	14.8
12H 4H	13.9	14.4	14.3	14.7	15.1	13.7	14.2	14.1	14.6	15.0
6H	13.8	14.2	14.2	14.6	15.0	13.6	14.0	14.1	14.4	14.9
8H	13.7	14.0	14.2	14.5	15.0	13.6	13.9	14.0	14.3	14.8
Variations with the observer position at spacings:										
S = 1.0H	+ 4.3 / - 7.2					+ 4.3 / - 7.3				
1.5H	+ 6.2 / - 4.9					+ 6.1 / - 4.8				
2.0H	+ 3.9 / - 5.4					+ 4.0 / - 5.7				

CIE Pub.117, 1870 lm Total Lamp Luminous Flux Correct (8log(F/F0) = 2.2)

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UTILIZATION FACTORS TABLE

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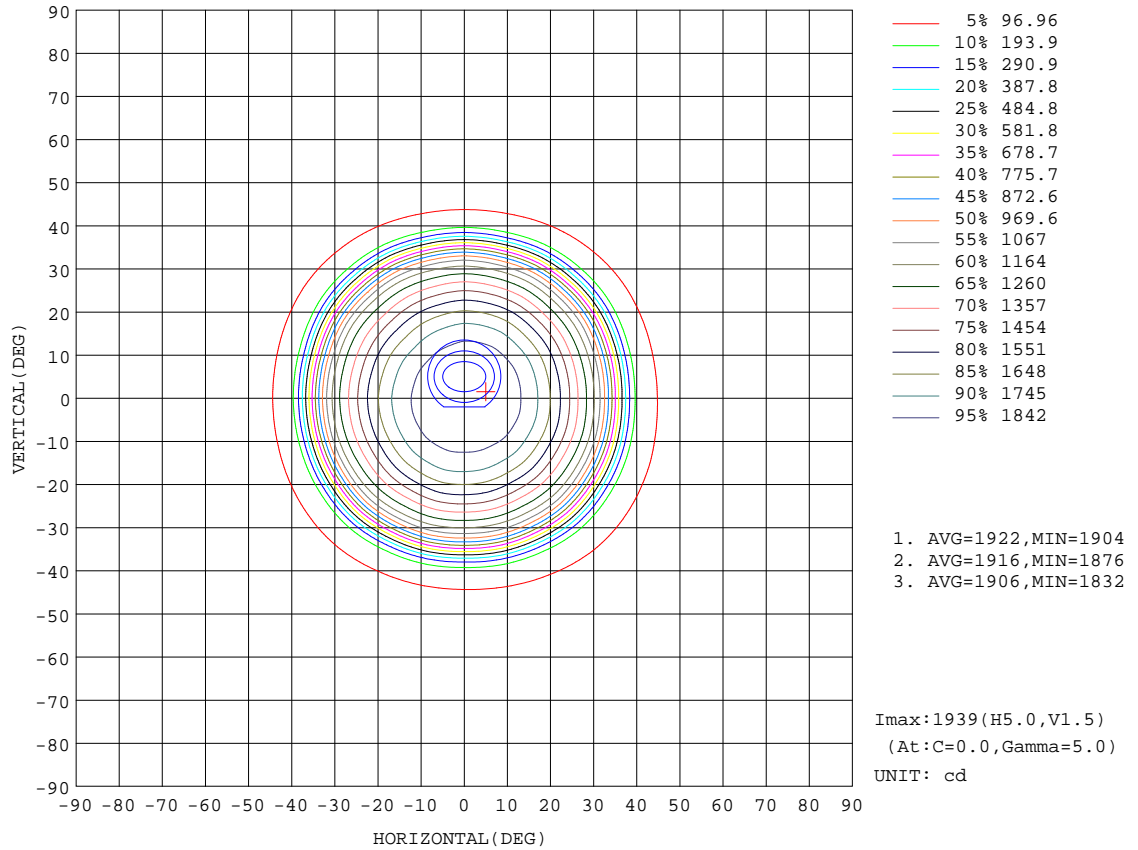
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	88	81	78	87	81	77	86	81	77	74
0.80	95	89	86	94	89	85	93	88	85	81
1.00	100	94	90	99	94	90	97	93	90	86
1.25	103	98	95	102	98	95	101	97	94	90
1.50	106	102	98	105	101	98	103	99	97	92
2.00	109	105	102	107	104	101	105	102	99	94
2.50	110	107	104	109	105	103	106	103	101	95
3.00	112	109	106	110	107	105	107	105	103	96
4.00	114	111	109	112	110	108	108	106	105	98
5.00	115	113	111	113	111	110	109	108	106	99
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004			Suspended				SHRNOM = 1.25			

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ISOCANDELA DIAGRAM

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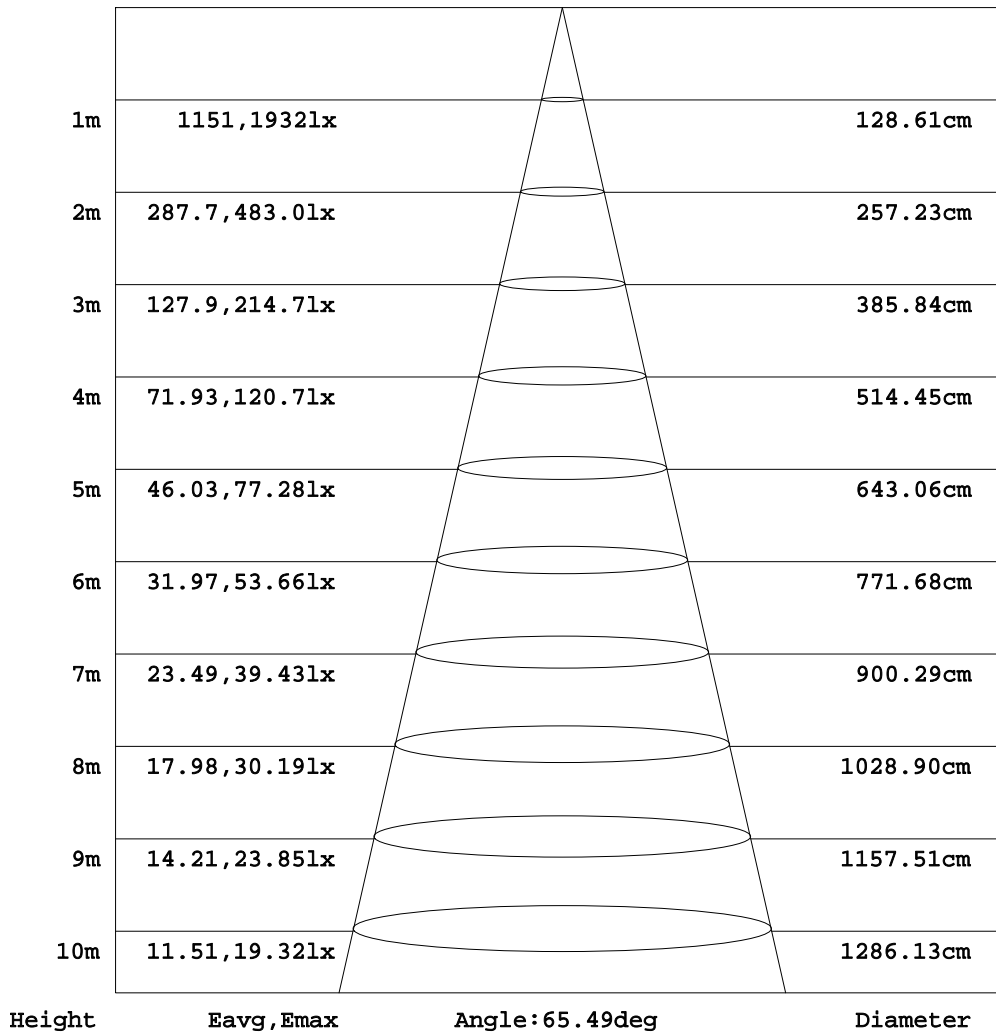
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AAI Figure

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Flux out:1525 lm



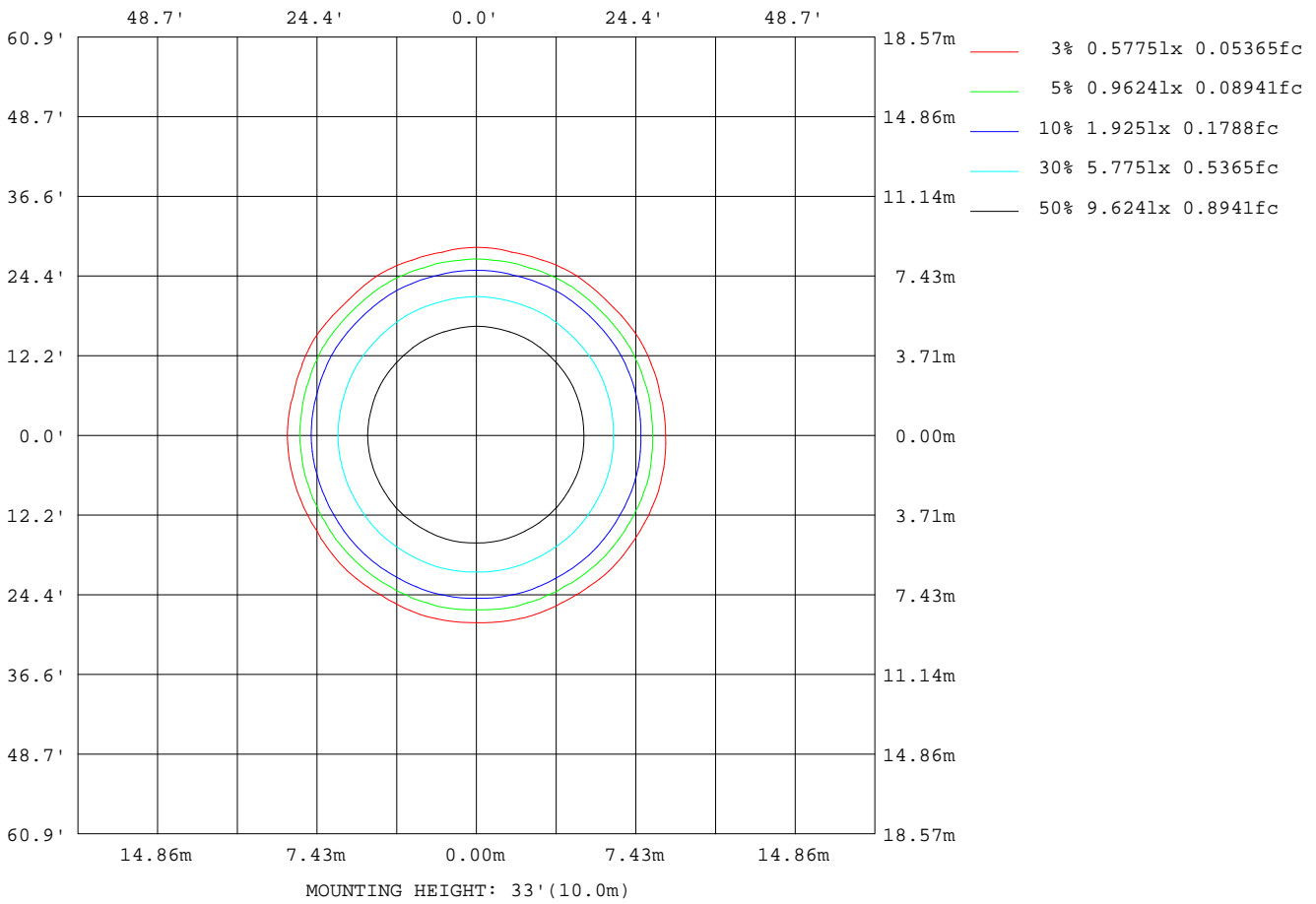
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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ISOLUX DIAGRAM

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LED Avg.L Report

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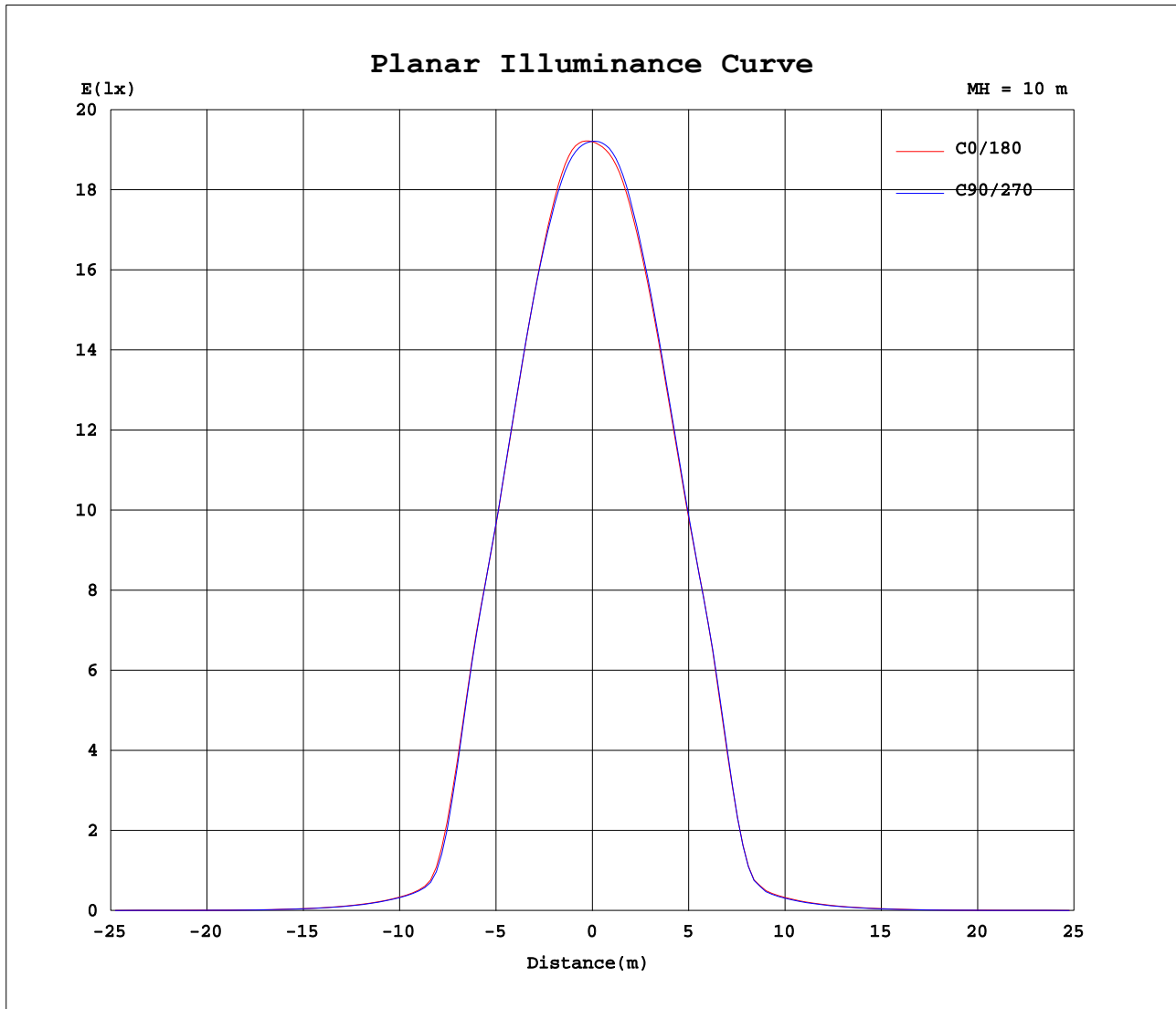
AvgL	cd/m2
L_0~180 (65) av	1041
L_0~180 (75) av	472
L_0~180 (85) av	58
L_90~270 (65) av	888
L_90~270 (75) av	410
L_90~270 (85) av	56
L_45 (65) av	945
L_45 (75) av	435
L_45 (85) av	59

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Men Yongjian
Test Date:2017-11-08

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.288
Humidity:56%
Test Distance:5.850m [K=1.0000]
Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG
 C Interval: 15.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: Men Yongjian
 Test Date: 2017-11-08

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.288
 Humidity: 56%
 Test Distance: 5.850m [K=1.0000]
 Remarks:

