

LED Downlight FUSION Series FF3-7W-930-24D



Light Output Ratio:	100.0%	
Luminaire Power:	7.986 W	
SHR Nominal:	0.00	Calculated using the TM5
SHR Maximum:	1.00	fine grid method.

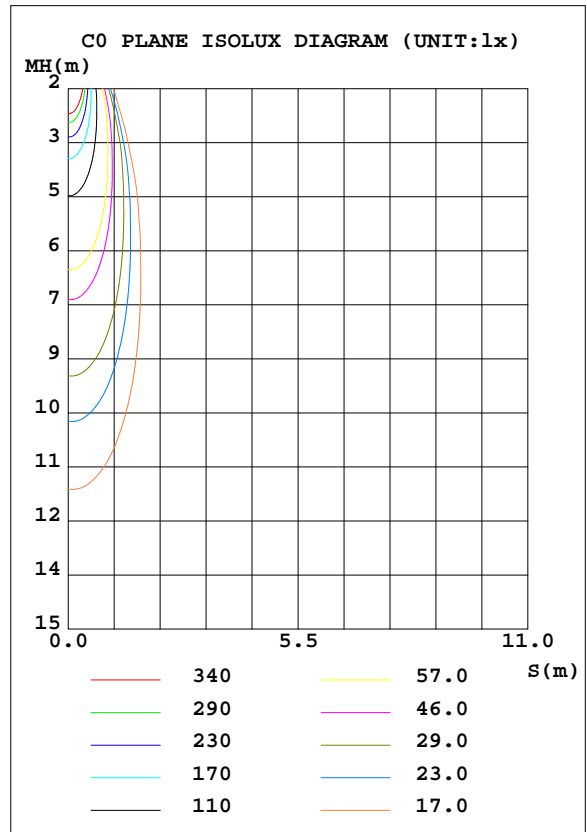
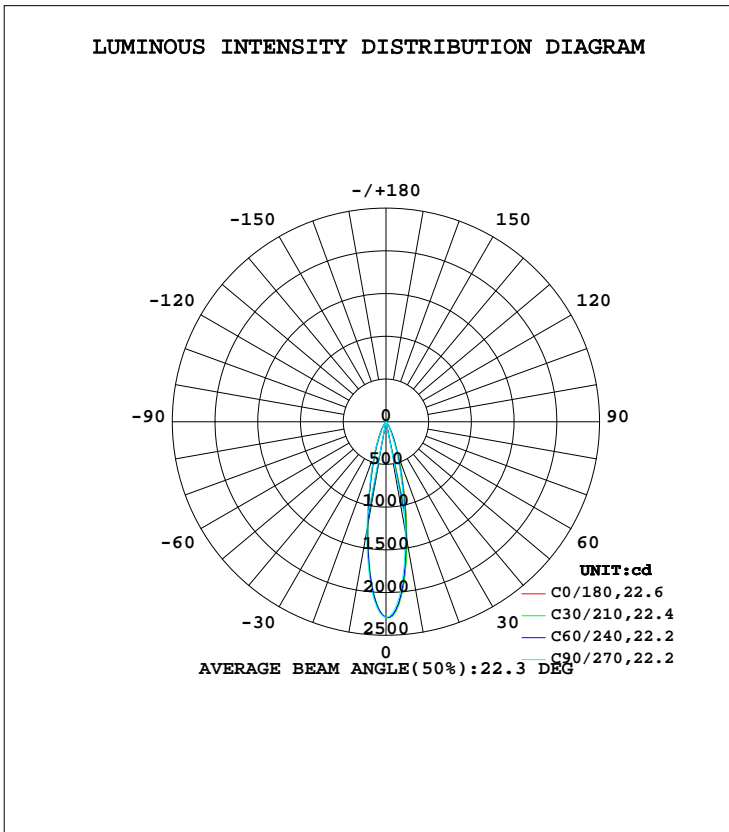
C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: Meng yongjian
Test Date: 2018-06-08

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.288
Humidity: 52%
Test Distance: 5.850m [K=1.0000]
Remarks:

LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:220.5V I:0.0444A P:7.986W PF:0.8113 Freq:49.90Hz Lamp Flux:493.867x1 lm		
NAME: FF3-7W-930-24D	TYPE:Downlight	SERIAL No.:
SPEC.:3000K	DIM.: L98mm*W45mm*H60mm	
MFR.: NEKO LIGHTING AG		

DATA OF LAMP		PHOTOMETRIC DATA			
MODEL	OSRAM-3000K	Imax(cd)	2298	S/MH(C0/180)	0.37
NOMINAL POWER(W)	8.5	LOR(%)	100.0	S/MH(C90/270)	0.38
RATED VOLTAGE(V)	220	TOTAL FLUX(lm)	493.87	η UP, DN(C0-180)	0.0,50.1
NOMINAL FLUX(lm)	493.867	CIE CLASS	DIRECT	η UP, DN(C180-360)	0.0,49.9
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	0.00
TEST VOLTAGE(V)	220	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	1402	1399	1298	1252	1246	1206	1290	1353	0- 10	166.3	166.3	33.7,33.7
20	419.1	406.1	352.3	349.3	346.4	354.6	390.8	441.4	10- 20	202.2	368.5	74.6,74.6
30	80.31	128.4	87.05	110.3	76.69	109.0	71.22	138.9	20- 30	93.04	461.6	93.5,93.5
40	7.413	26.34	8.489	25.87	6.609	19.70	6.953	21.37	30- 40	28.66	490.2	99.3,99.3
50	0.3032	2.040	0.3832	1.305	0.2959	1.306	0.2119	1.909	40- 50	3.388	493.6	99.9,99.9
60	0.1047	0.0720	0.1445	0.0701	0.0913	0.0590	0.0634	0.0636	50- 60	0.1656	493.8	100,100
70	0.0393	0.0197	0.0591	0.0240	0.0238	0.0263	0.0218	0.0307	60- 70	0.0525	493.8	100,100
80	0.0174	0.0131	0.0285	0.0153	0.0065	0.0153	0.0087	0.0154	70- 80	0.0217	493.9	100,100
90	0.0131	0.0131	0.0153	0.0153	0.0087	0.0066	0.0087	0.0088	80- 90	0.0144	493.9	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): 493.02 lm

%lum = 99.8%
%lamp = 99.8%

Conical surface Flux(120deg): 493.78 lm

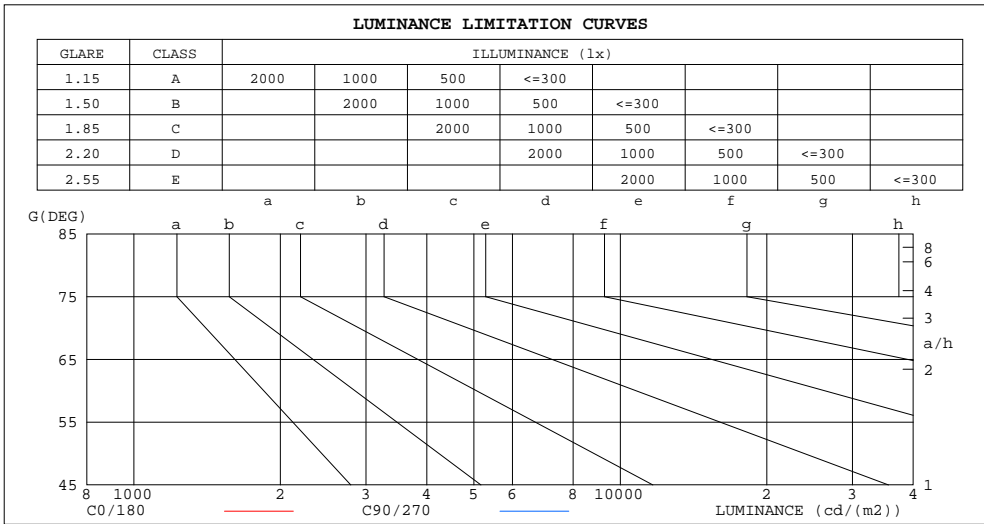
%lum = 100.0%
%lamp = 100.0%

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LUMINANCE LIMITATION CURVES

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LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	40	51
80	23	37
75	23	35
70	26	39
65	35	47
60	48	66
55	71	95
50	107	135
45	220	285

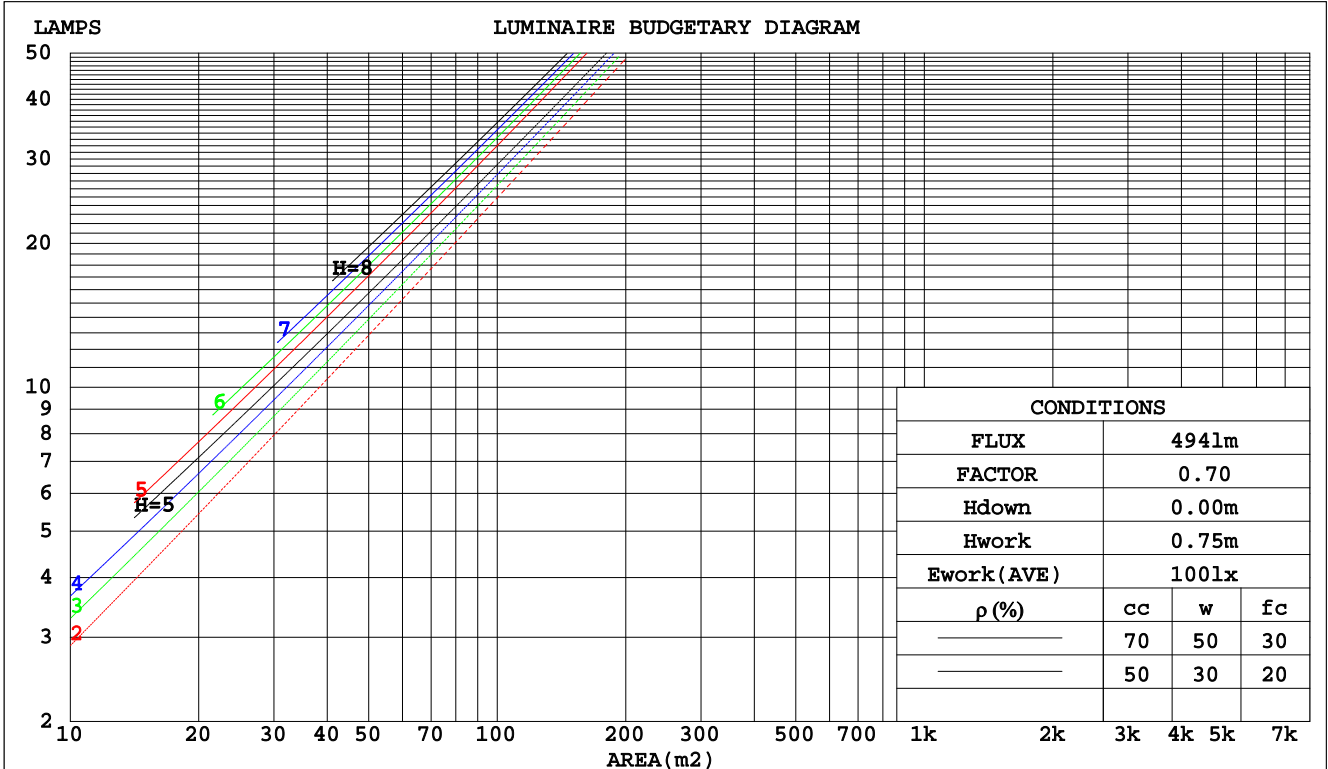
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CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

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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
pw																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	1.13	1.11	1.09	1.11	1.09	1.07	1.07	1.05	1.04	1.03	1.02	1.01	.00	.99	.98	.96
2.0	1.07	1.04	1.02	1.06	1.03	1.01	1.03	1.00	.98	.00	.98	.96	.97	.96	.94	.93
3.0	1.03	.99	.96	1.01	.98	.95	.99	.96	.94	.97	.94	.92	.94	.93	.91	.90
4.0	.98	.94	.91	.97	.94	.91	.95	.92	.90	.93	.91	.89	.92	.90	.88	.87
5.0	.95	.90	.87	.94	.90	.87	.92	.89	.86	.91	.88	.85	.89	.87	.85	.84
6.0	.91	.87	.84	.90	.86	.84	.89	.86	.83	.88	.85	.82	.87	.84	.82	.81
7.0	.88	.84	.81	.87	.83	.80	.86	.83	.80	.85	.82	.80	.84	.81	.79	.78
8.0	.85	.81	.78	.85	.81	.78	.84	.80	.77	.83	.80	.77	.82	.79	.77	.76
9.0	.82	.78	.75	.82	.78	.75	.81	.78	.75	.80	.77	.75	.80	.77	.75	.74
10.0	.80	.76	.73	.80	.76	.73	.79	.75	.73	.78	.75	.73	.78	.75	.73	.72



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WEC AND CCEC

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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						Wall Exitance Coefficients(WEC)									
0.0																
1.0	.139	.079	.025	.133	.076	.024	.120	.069	.022	.109	.063	.020	.098	.057	.018	
2.0	.129	.071	.022	.124	.068	.021	.114	.063	.020	.104	.059	.018	.096	.054	.017	
3.0	.121	.064	.019	.117	.062	.019	.108	.059	.018	.100	.055	.017	.093	.051	.016	
4.0	.114	.059	.017	.110	.058	.017	.103	.055	.016	.096	.052	.016	.090	.049	.015	
5.0	.108	.055	.016	.104	.054	.016	.098	.051	.015	.092	.049	.014	.087	.046	.014	
6.0	.102	.051	.015	.099	.050	.014	.094	.048	.014	.089	.046	.014	.084	.044	.013	
7.0	.097	.048	.014	.095	.047	.013	.090	.045	.013	.086	.044	.013	.082	.042	.012	
8.0	.093	.045	.013	.090	.045	.013	.086	.043	.012	.083	.042	.012	.079	.041	.012	
9.0	.089	.043	.012	.087	.042	.012	.083	.041	.012	.080	.040	.011	.077	.039	.011	
10.0	.085	.041	.011	.083	.040	.011	.080	.039	.011	.077	.038	.011	.074	.037	.011	

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	.169	.158	.148	.144	.135	.127	.099	.093	.088	.057	.054	.051	.018	.017	.017	
2.0	.151	.133	.118	.129	.114	.102	.088	.079	.071	.051	.046	.042	.016	.015	.014	
3.0	.136	.113	.095	.116	.098	.083	.080	.068	.058	.046	.040	.034	.015	.013	.011	
4.0	.123	.098	.078	.106	.085	.068	.073	.059	.048	.042	.035	.028	.014	.011	.009	
5.0	.113	.086	.065	.097	.074	.057	.067	.052	.040	.039	.030	.024	.012	.010	.008	
6.0	.104	.076	.055	.090	.066	.048	.062	.046	.034	.036	.027	.020	.012	.009	.007	
7.0	.097	.068	.047	.083	.059	.041	.058	.041	.029	.033	.024	.017	.011	.008	.006	
8.0	.091	.061	.041	.078	.053	.035	.054	.037	.025	.031	.022	.015	.010	.007	.005	
9.0	.085	.055	.035	.073	.048	.031	.051	.034	.022	.030	.020	.013	.010	.007	.004	
10.0	.080	.051	.031	.069	.044	.027	.048	.031	.019	.028	.018	.011	.009	.006	.004	

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 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.288
 Humidity:52%
 Test Distance:5.850m [K=1.0000]
 Remarks:

UGR(Unified Glare Rating) Table

Test:U:220.5V I:0.0444A P:7.986W PF:0.8113 Freq:49.90Hz Lamp Flux:493.867x1 lm		
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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	10.0	10.6	10.2	10.8	10.9	10.7	11.4	10.9	11.5	11.7
3H	9.8	10.4	10.0	10.6	10.8	10.5	11.2	10.8	11.3	11.5
4H	9.7	10.3	10.0	10.5	10.7	10.5	11.1	10.7	11.3	11.5
6H	9.6	10.2	9.9	10.4	10.7	10.4	10.9	10.7	11.2	11.4
8H	9.6	10.1	9.9	10.4	10.6	10.3	10.9	10.6	11.1	11.4
12H	9.6	10.1	9.9	10.3	10.6	10.3	10.8	10.6	11.1	11.3
4H 2H	9.7	10.3	10.0	10.5	10.7	10.5	11.1	10.7	11.3	11.5
3H	9.5	10.1	9.9	10.3	10.6	10.3	10.8	10.6	11.1	11.3
4H	9.5	9.9	9.8	10.2	10.5	10.2	10.7	10.5	11.0	11.3
6H	9.4	9.8	9.7	10.1	10.4	10.1	10.5	10.5	10.8	11.2
8H	9.3	9.7	9.7	10.0	10.4	10.0	10.4	10.4	10.8	11.1
12H	9.2	9.6	9.6	10.0	10.4	10.0	10.3	10.4	10.7	11.1
8H 4H	9.3	9.7	9.7	10.0	10.4	10.0	10.4	10.4	10.8	11.1
6H	9.2	9.5	9.6	9.9	10.3	9.9	10.2	10.3	10.6	11.0
8H	9.1	9.4	9.6	9.8	10.3	9.9	10.2	10.3	10.6	11.0
12H	9.1	9.3	9.5	9.8	10.2	9.8	10.0	10.3	10.5	11.0
12H 4H	9.2	9.6	9.6	10.0	10.4	10.0	10.3	10.4	10.7	11.1
6H	9.1	9.4	9.6	9.8	10.3	9.9	10.2	10.3	10.6	11.0
8H	9.1	9.3	9.5	9.8	10.2	9.8	10.0	10.3	10.5	11.0
Variations with the observer position at spacings:										
S = 1.0H	+ 3.3 / -21.4					+ 3.4 / -21.4				
1.5H	+ 6.1 / -19.5					+ 6.2 / -20.1				
2.0H	+ 4.7 / - 4.5					+ 6.0 / - 5.4				

CIE Pub.117, 493.9 lm Total Lamp Luminous Flux Correct (8log(F/F0) = -2.5)

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UTILIZATION FACTORS TABLE

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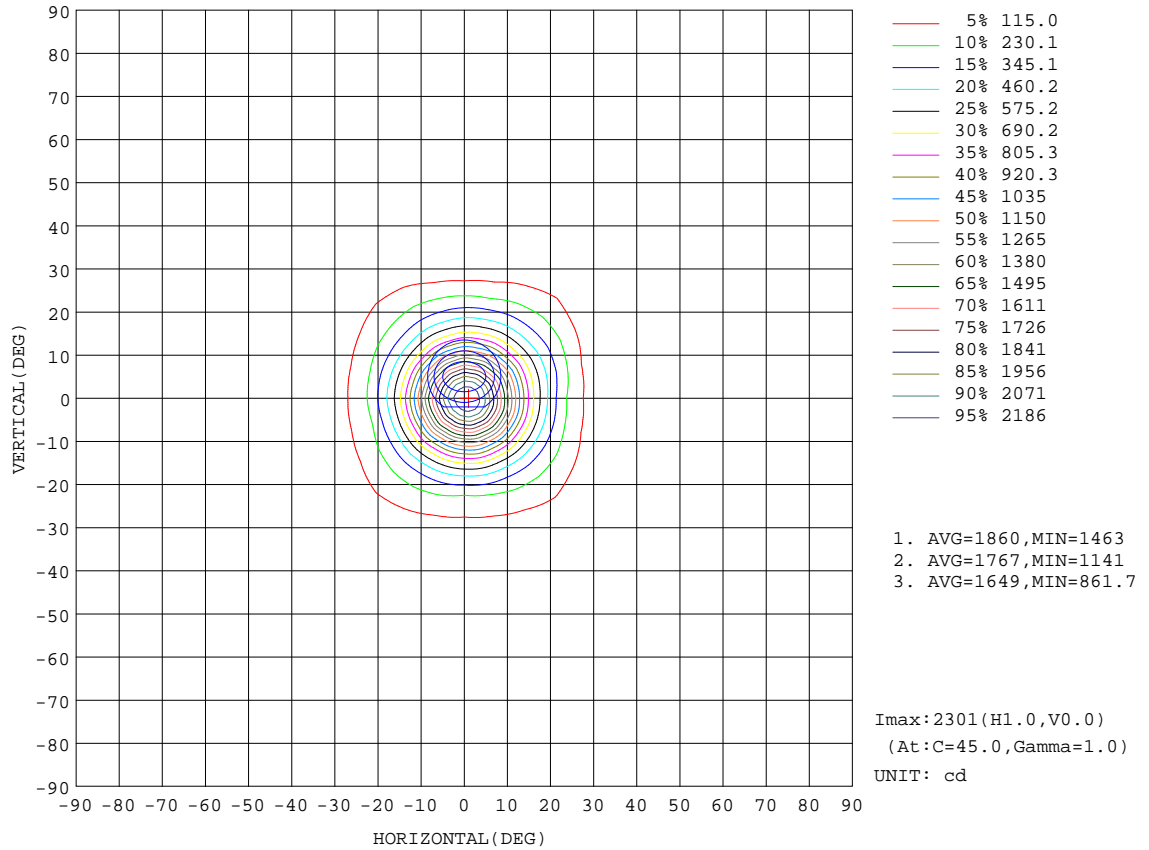
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	91	85	82	91	85	82	90	85	82	79
0.80	98	93	90	97	93	89	96	92	89	86
1.00	102	97	94	101	96	93	99	96	93	89
1.25	105	101	98	104	100	97	102	99	96	93
1.50	108	104	101	107	103	100	104	101	99	95
2.00	110	106	103	108	105	103	106	103	101	96
2.50	111	108	105	110	107	104	107	104	102	97
3.00	113	110	107	111	108	106	108	106	104	98
4.00	115	112	110	113	110	109	109	107	106	99
5.00	116	114	112	114	112	111	110	109	107	100
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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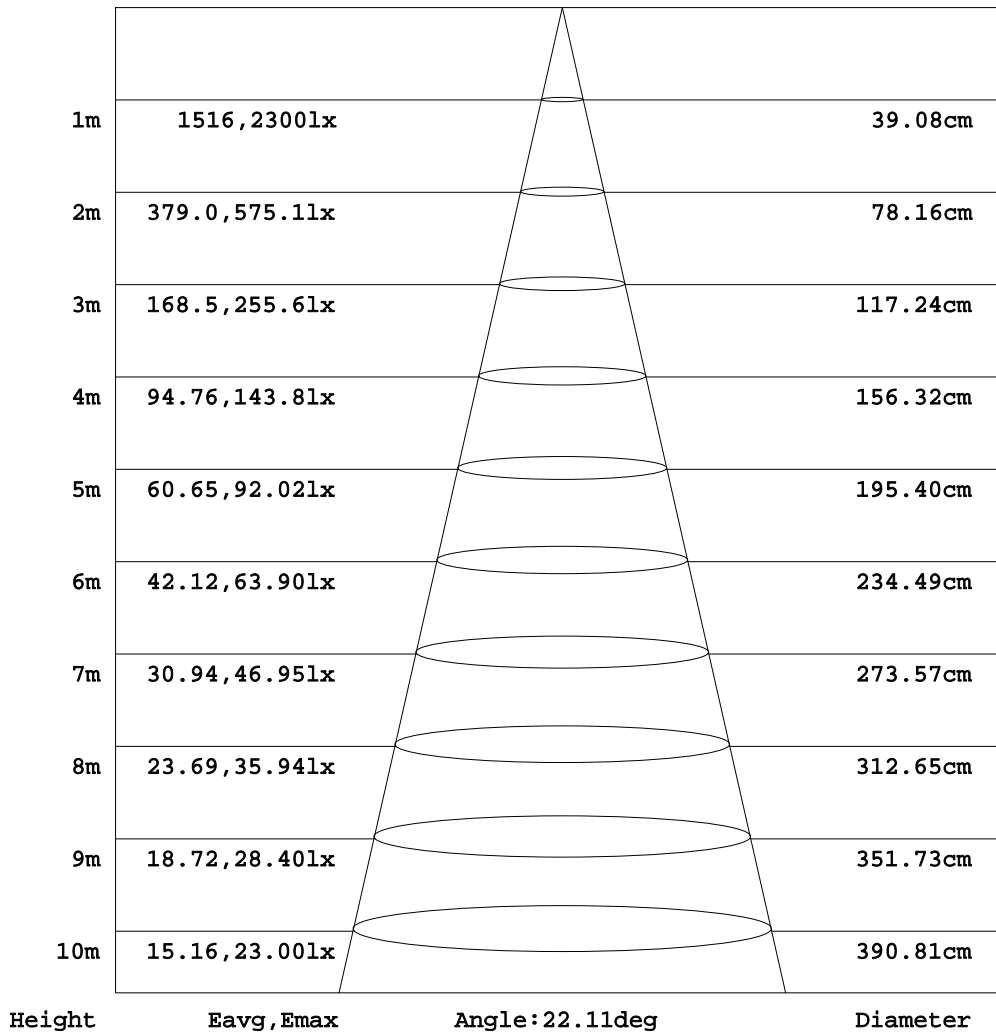
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AAI Figure

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Flux out:215.2 lm



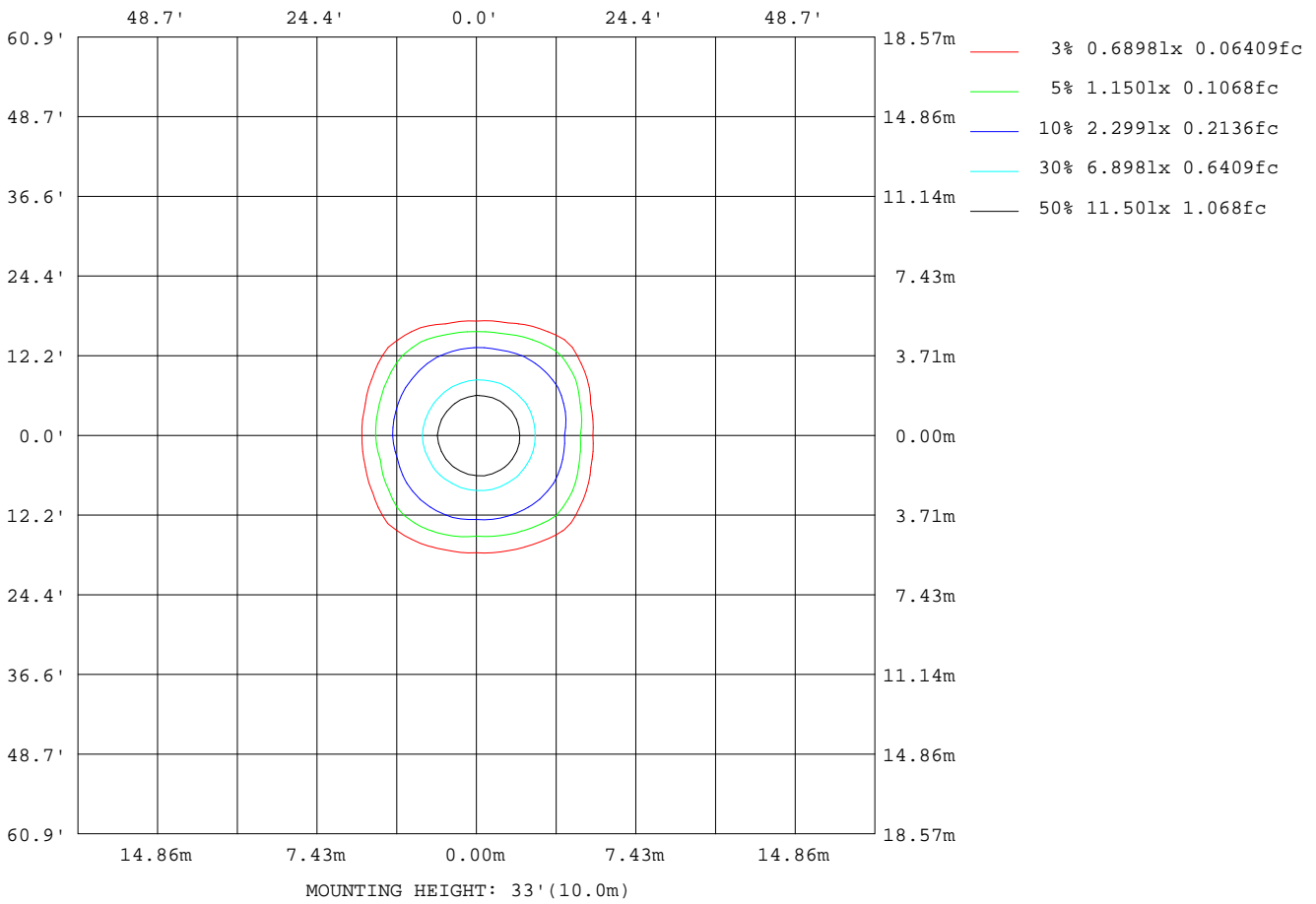
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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ISOLUX DIAGRAM

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LED Avg.L Report

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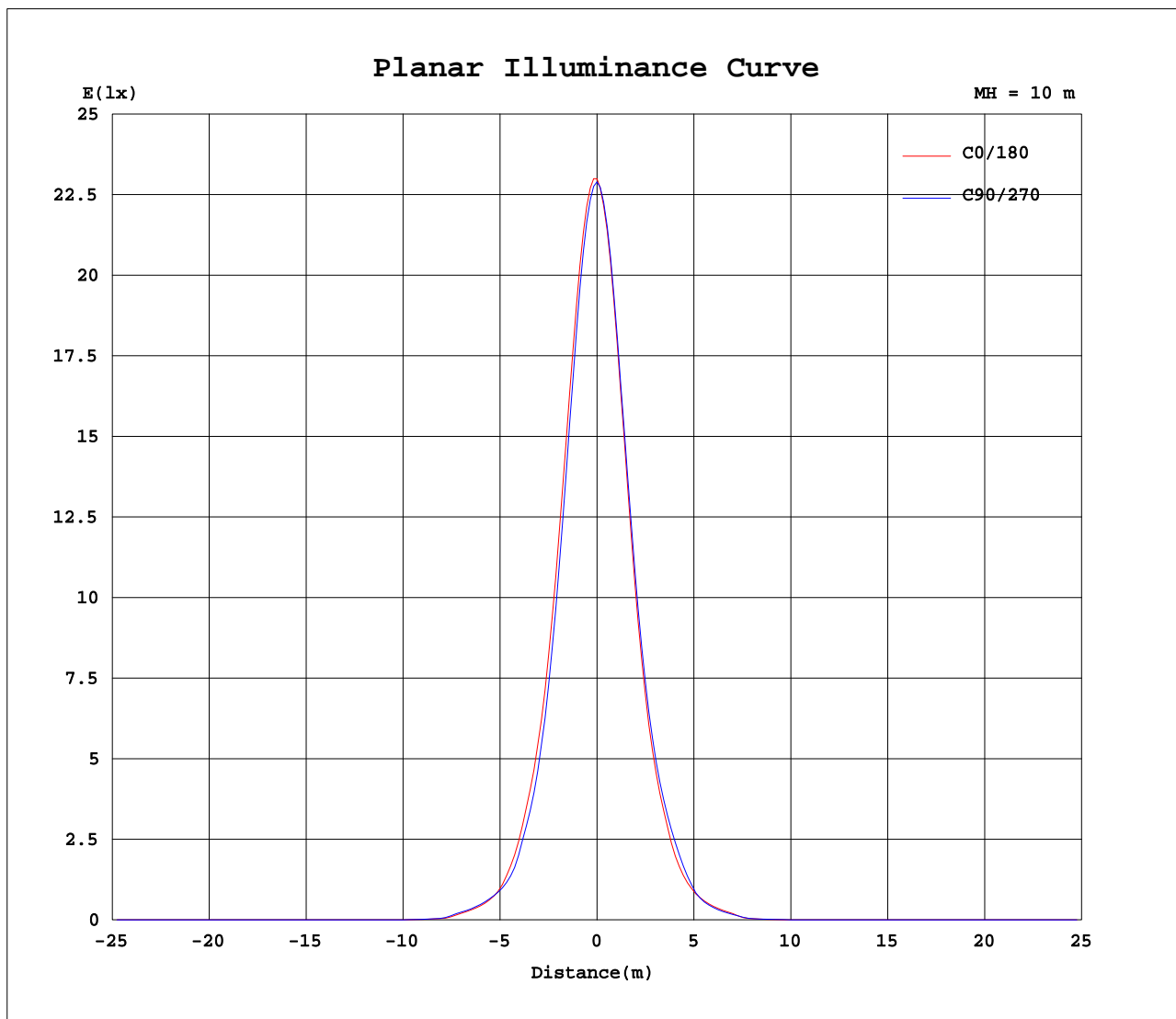
AvgL	cd/m2
L_0~180(65)av	30
L_0~180(75)av	14
L_0~180(85)av	28
L_90~270(65)av	33
L_90~270(75)av	21
L_90~270(85)av	37
L_45(65)av	21
L_45(75)av	15
L_45(85)av	36

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Meng yongjian
Test Date:2018-06-08

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.288
Humidity:52%
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: Meng yongjian
 Test Date: 2018-06-08

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.288
 Humidity: 52%
 Test Distance: 5.850m [K=1.0000]
 Remarks:

