

LED Downlight TAKEO Series T200-38W-930-60



Light Output Ratio:	100.0%	
Luminaire Power:	40.36 W	
SHR Nominal:	0.75	Calculated using the TM5
SHR Maximum:	0.95	fine grid method.

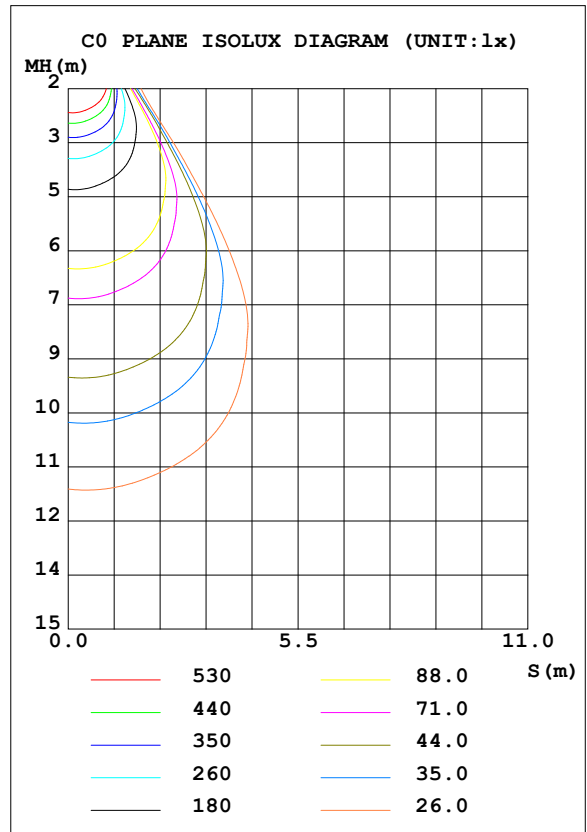
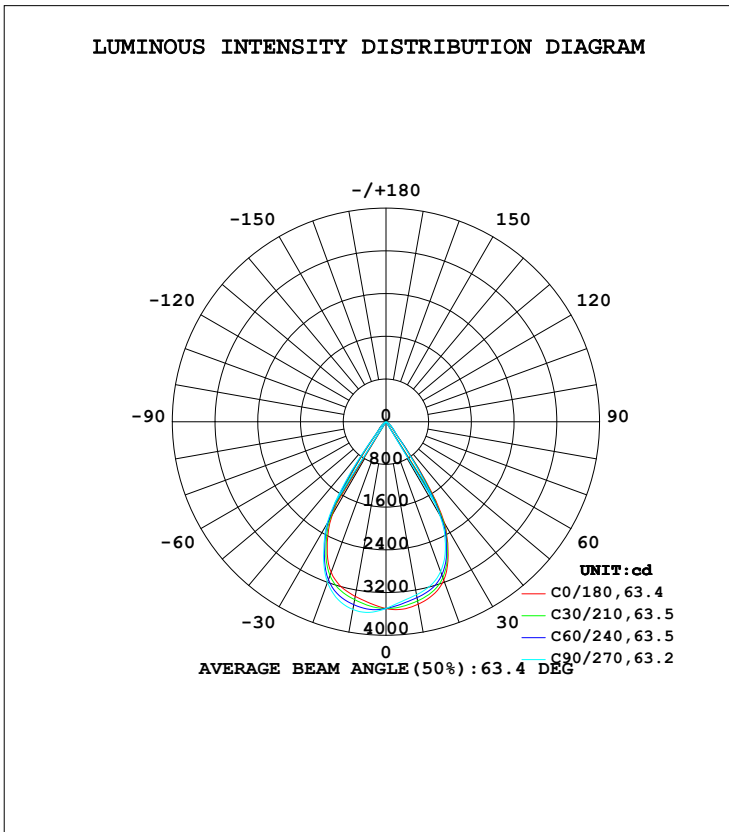
C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: HIGH  
Temperature: 25.3DEG  
Operators: Men Yongjian  
Test Date: 2018-07-04

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  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:220.4V I:0.1882A P:40.36W PF:0.9768 Freq:49.90Hz Lamp Flux:3321.14x1 lm		
NAME: T200-38W-930-60	TYPE:Downlight	SERIAL No.:
SPEC.:3000K	DIM.: φ218mm*H126mm	
MFR.: NEKO LIGHTING AG		

DATA OF LAMP		PHOTOMETRIC DATA Eff: 82.29 lm/W			
MODEL	CITIZEN-3000K	I <sub>max</sub> (cd)	3629	S/MH (C0/180)	0.90
NOMINAL POWER (W)	42	LOR (%)	100.0	S/MH (C90/270)	0.94
RATED VOLTAGE (V)	220	TOTAL FLUX (lm)	3321.1	η UP, DN (C0-180)	0.0, 49.1
NOMINAL FLUX (lm)	3321.14	CIE CLASS	DIRECT	η UP, DN (C180-360)	0.0, 50.9
LAMPS INSIDE	1	η up (%)	0.0	CIBSE SHR NOM	0.75
TEST VOLTAGE (V)	220	η down (%)	100.0	CIBSE SHR MAX	0.95



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**ZONAL FLUX DIAGRAM**

ZONAL FLUX DIAGRAM:

$\gamma$	C0	C45	C90	C135	C180	C225	C270	C315	$\gamma$	$\Phi$ zone	$\Phi$ total	%lum,lamp
10	3470	3377	3290	3259	3320	3425	3569	3580	0- 10	329.7	329.7	9.93,9.93
20	3160	3090	2989	2948	3002	3102	3203	3220	10- 20	926.2	1256	37.8,37.8
30	2196	2135	2008	1951	2010	2106	2222	2258	20- 30	1220	2476	74.6,74.6
40	276.9	290.7	295.7	283.9	264.2	254.9	263.2	278.4	30- 40	633.6	3110	93.6,93.6
50	105.5	117.0	124.8	121.9	107.9	95.62	90.56	99.31	40- 50	135.8	3245	97.7,97.7
60	33.04	36.35	39.99	40.78	33.96	28.19	25.37	29.74	50- 60	55.47	3301	99.4,99.4
70	5.857	8.191	9.474	9.610	6.646	3.906	3.010	3.929	60- 70	18.46	3319	99.9,99.9
80	0.2762	0.2514	0.2899	0.2736	0.2237	0.2232	0.2172	0.2476	70- 80	1.516	3321	100,100
90	0.2130	0.2143	0.2217	0.2146	0.1109	0.1159	0.1273	0.1314	80- 90	0.2195	3321	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): 3189.6 lm

%lum = 96.0%  
%lamp = 96.0%

Conical surface Flux(120deg): 3300.9 lm

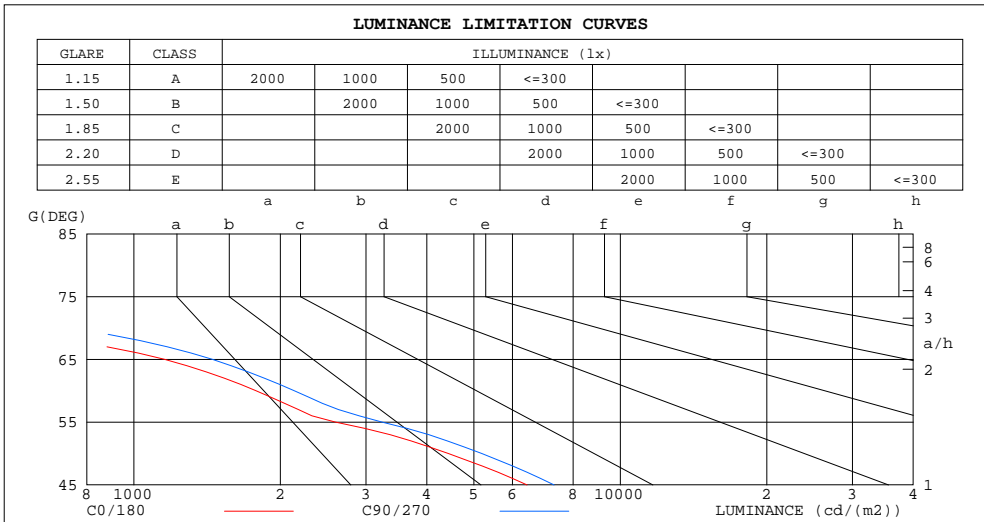
%lum = 99.4%  
%lamp = 99.4%

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Humidity:56%  
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**LUMINANCE LIMITATION CURVES**

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LUMINANCE cd/(m2)		
G(DEG)	C0/180	C90/270
85	73	73
80	43	45
75	38	69
70	462	740
65	1156	1450
60	1782	2136
55	2594	3233
50	4426	5184
45	6432	7310

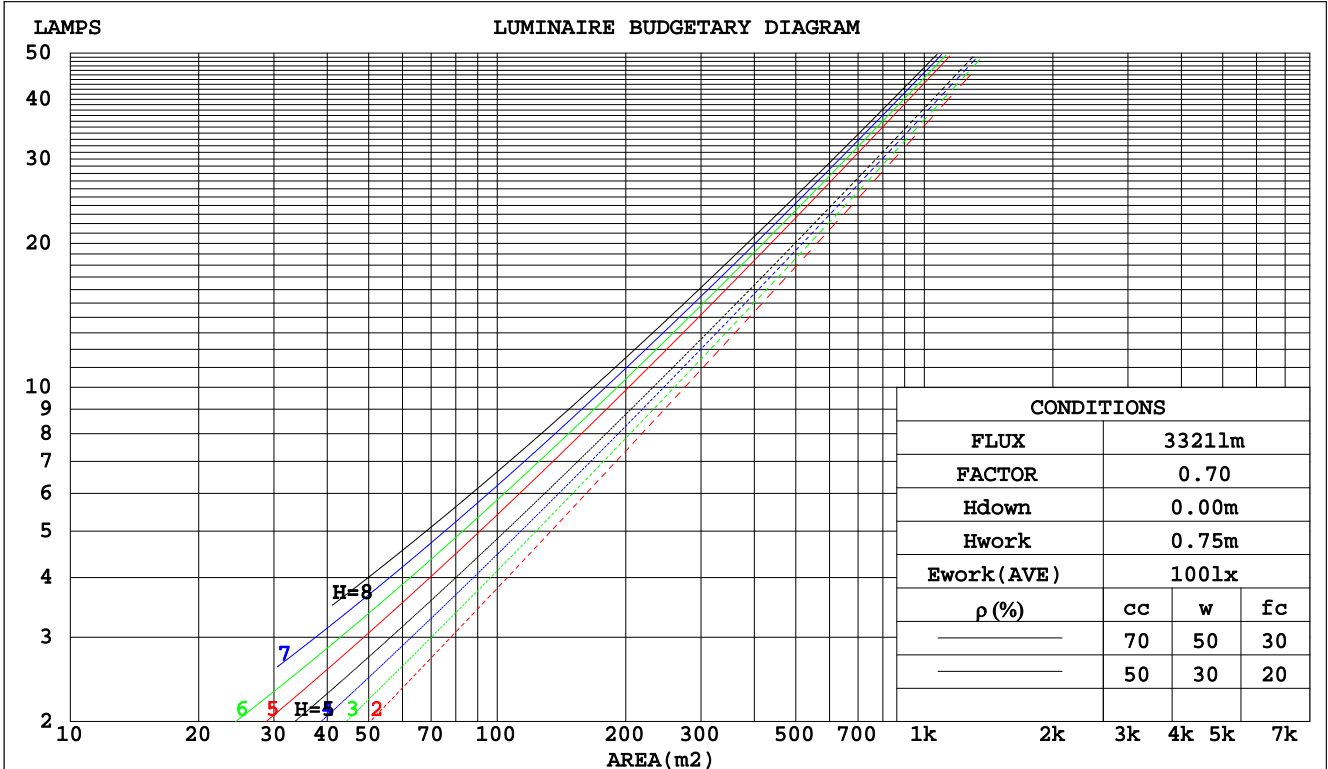
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**CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM**

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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	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	1.11	1.08	1.06	1.09	1.06	1.04	1.05	1.03	1.01	1.01	.99	.98	.97	.96	.95	.94
2.0	1.03	.99	.96	1.01	.98	.95	.98	.95	.93	.95	.93	.91	.92	.91	.89	.87
3.0	.96	.91	.87	.95	.90	.87	.92	.88	.85	.90	.87	.84	.88	.85	.83	.81
4.0	.90	.84	.80	.89	.84	.80	.87	.82	.79	.85	.81	.78	.83	.80	.77	.76
5.0	.84	.79	.74	.83	.78	.74	.82	.77	.73	.80	.76	.73	.78	.75	.72	.70
6.0	.79	.73	.69	.78	.73	.69	.77	.72	.68	.75	.71	.68	.74	.70	.67	.66
7.0	.74	.68	.64	.74	.68	.64	.72	.67	.64	.71	.67	.63	.70	.66	.63	.62
8.0	.70	.64	.60	.70	.64	.60	.68	.63	.60	.67	.63	.60	.67	.62	.59	.58
9.0	.66	.60	.56	.66	.60	.56	.65	.60	.56	.64	.59	.56	.63	.59	.56	.54
10.0	.63	.57	.53	.62	.57	.53	.61	.56	.53	.61	.56	.53	.60	.56	.53	.51



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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	.177	.101	.032	.170	.097	.031	.158	.090	.029	.146	.084	.027	.135	.078	.025	
2.0	.170	.093	.029	.164	.090	.028	.153	.085	.027	.144	.081	.025	.135	.076	.024	
3.0	.162	.086	.026	.157	.084	.025	.148	.080	.024	.140	.077	.023	.132	.073	.023	
4.0	.154	.080	.024	.150	.079	.023	.142	.076	.023	.135	.073	.022	.128	.070	.021	
5.0	.147	.075	.022	.144	.074	.021	.137	.071	.021	.130	.069	.020	.125	.067	.020	
6.0	.141	.071	.020	.137	.069	.020	.132	.067	.020	.126	.065	.019	.121	.064	.019	
7.0	.135	.067	.019	.132	.066	.019	.126	.064	.018	.121	.062	.018	.117	.061	.018	
8.0	.129	.063	.018	.126	.062	.018	.122	.061	.017	.117	.059	.017	.113	.058	.017	
9.0	.124	.060	.017	.121	.059	.017	.117	.058	.016	.113	.057	.016	.109	.056	.016	
10.0	.119	.057	.016	.117	.056	.016	.113	.055	.016	.109	.054	.015	.106	.053	.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	.146	.135	.125	.100	.093	.086	.058	.054	.050	.018	.017	.016	
2.0	.156	.133	.113	.134	.114	.097	.092	.079	.068	.053	.046	.040	.017	.015	.013	
3.0	.144	.114	.090	.123	.098	.078	.085	.068	.054	.049	.040	.032	.016	.013	.011	
4.0	.133	.099	.072	.115	.085	.063	.079	.060	.044	.046	.035	.026	.015	.011	.009	
5.0	.125	.087	.060	.107	.076	.052	.074	.053	.037	.043	.031	.022	.014	.010	.007	
6.0	.118	.078	.050	.101	.068	.043	.070	.047	.031	.040	.028	.018	.013	.009	.006	
7.0	.111	.070	.042	.096	.061	.037	.066	.043	.026	.038	.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	.012	.011	.007	.004	
10.0	.096	.055	.027	.083	.048	.024	.057	.033	.017	.033	.020	.010	.011	.006	.003	

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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:

UGR(Unified Glare Rating) Table

Test:U:220.4V I:0.1882A P:40.36W PF:0.9768 Freq:49.90Hz Lamp Flux:3321.14x1 lm		
NAME: T200-38W-930-60	TYPE:Downlight	SERIAL No.:
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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	11.9	12.9	12.2	13.0	13.2	11.4	12.3	11.6	12.5	12.7
3H	11.8	12.7	12.0	12.9	13.1	11.3	12.1	11.5	12.3	12.5
4H	11.7	12.5	12.0	12.7	13.0	11.2	12.0	11.4	12.2	12.4
6H	11.6	12.4	11.9	12.6	12.9	11.1	11.8	11.4	12.1	12.3
8H	11.6	12.3	11.9	12.6	12.8	11.0	11.8	11.3	12.0	12.3
12H	11.5	12.2	11.8	12.5	12.8	11.0	11.7	11.3	12.0	12.2
4H 2H	11.7	12.5	12.0	12.8	13.0	11.2	12.0	11.5	12.2	12.4
3H	11.6	12.3	11.9	12.5	12.8	11.0	11.8	11.4	12.0	12.3
4H	11.5	12.1	11.8	12.4	12.7	11.0	11.6	11.3	11.9	12.2
6H	11.4	11.9	11.8	12.3	12.6	10.9	11.4	11.2	11.8	12.1
8H	11.3	11.8	11.7	12.2	12.6	10.8	11.3	11.2	11.7	12.0
12H	11.3	11.7	11.7	12.1	12.5	10.8	11.2	11.2	11.6	12.0
8H 4H	11.3	11.8	11.7	12.2	12.6	10.8	11.3	11.2	11.7	12.1
6H	11.2	11.7	11.7	12.0	12.5	10.7	11.1	11.1	11.5	11.9
8H	11.2	11.5	11.6	12.0	12.4	10.7	11.0	11.1	11.4	11.9
12H	11.1	11.4	11.6	11.9	12.3	10.6	10.9	11.1	11.4	11.8
12H 4H	11.3	11.8	11.7	12.1	12.5	10.8	11.2	11.2	11.6	12.0
6H	11.2	11.5	11.6	12.0	12.4	10.7	11.0	11.1	11.4	11.9
8H	11.1	11.4	11.6	11.9	12.3	10.6	10.9	11.1	11.4	11.8
Variations with the observer position at spacings:										
S = 1.0H	+ 4.2 / - 6.3					+ 3.0 / - 4.8				
1.5H	+ 5.7 / - 4.7					+ 4.1 / - 3.7				
2.0H	+ 3.9 / - 4.3					+ 3.9 / - 4.5				

CIE Pub.117, 3321 lm Total Lamp Luminous Flux Correct (8log(F/F0) = 4.2)

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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	77	87	81	77	86	81	77	74
0.80	95	89	85	94	89	85	93	88	85	81
1.00	99	94	90	99	93	90	97	93	89	86
1.25	103	98	95	102	98	94	100	97	94	90
1.50	106	101	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	104	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			

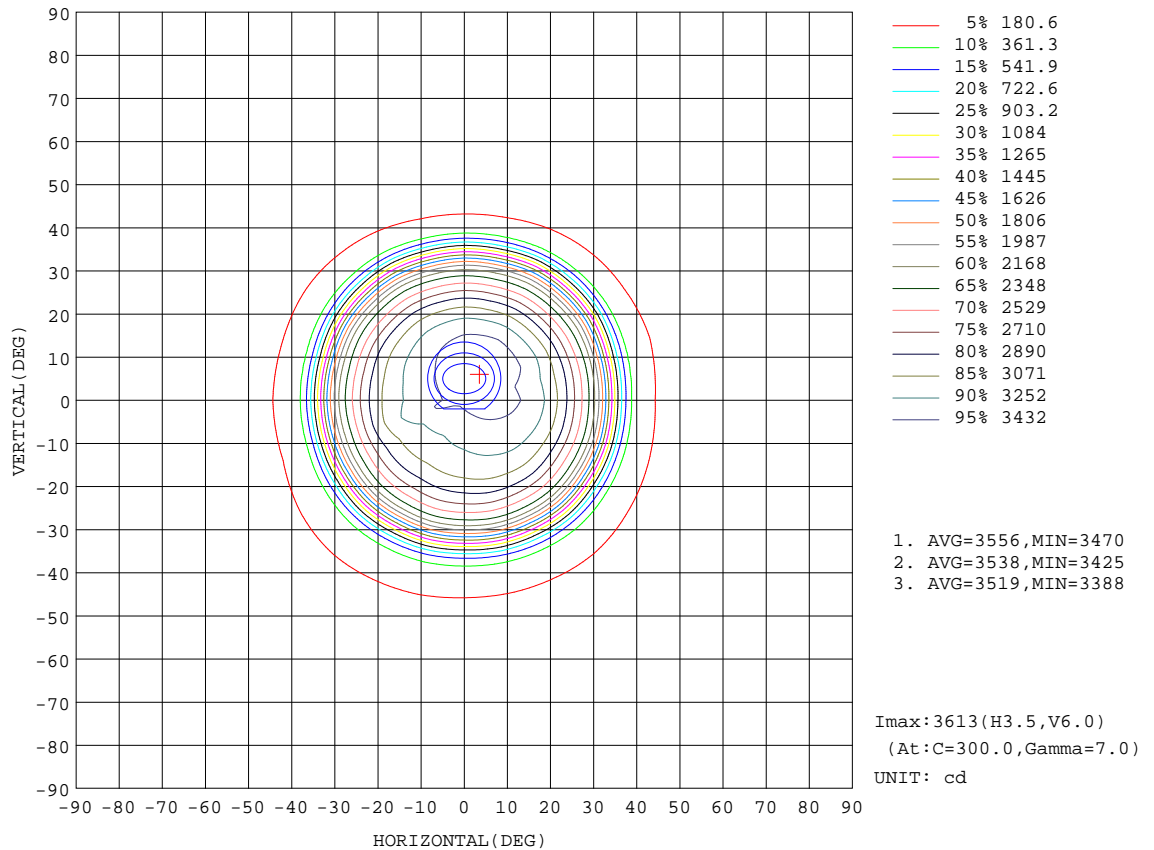
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**ISOCANDELA DIAGRAM**

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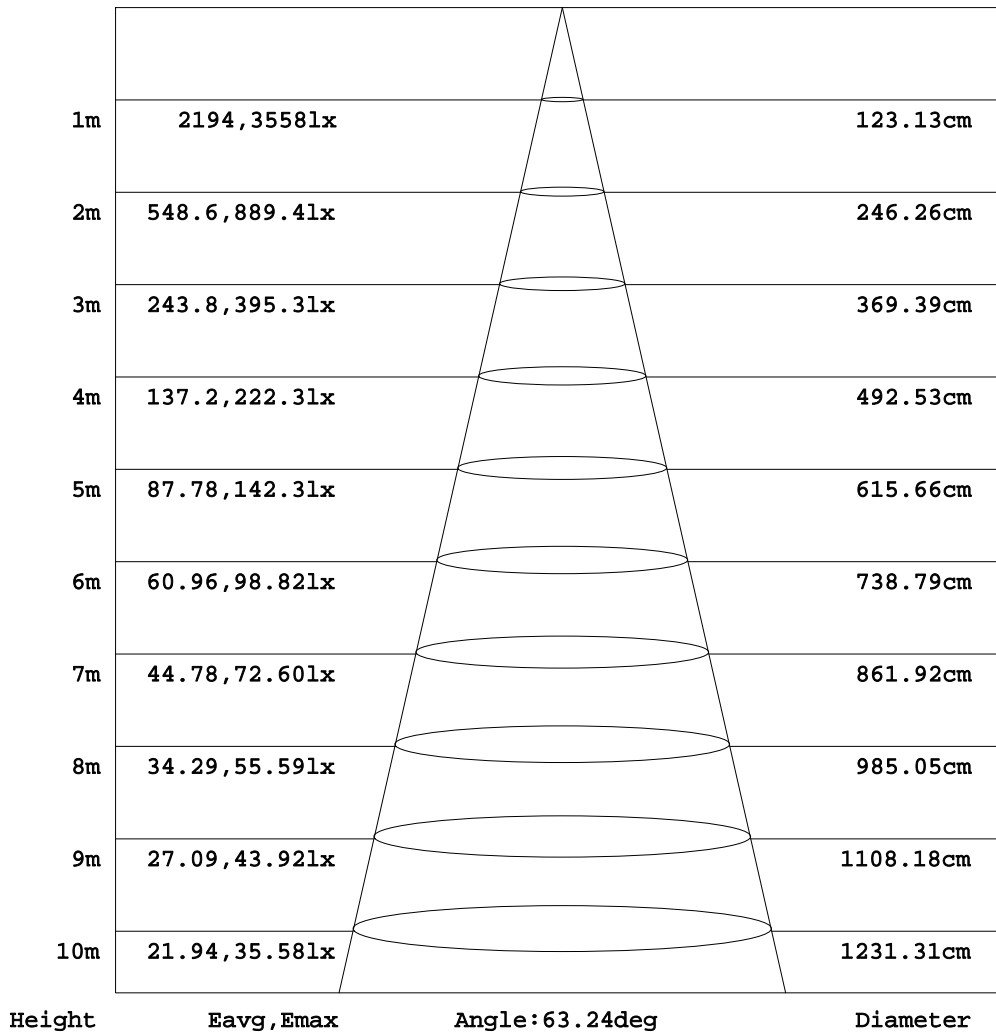
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**AAI Figure**

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Flux out:2692 lm



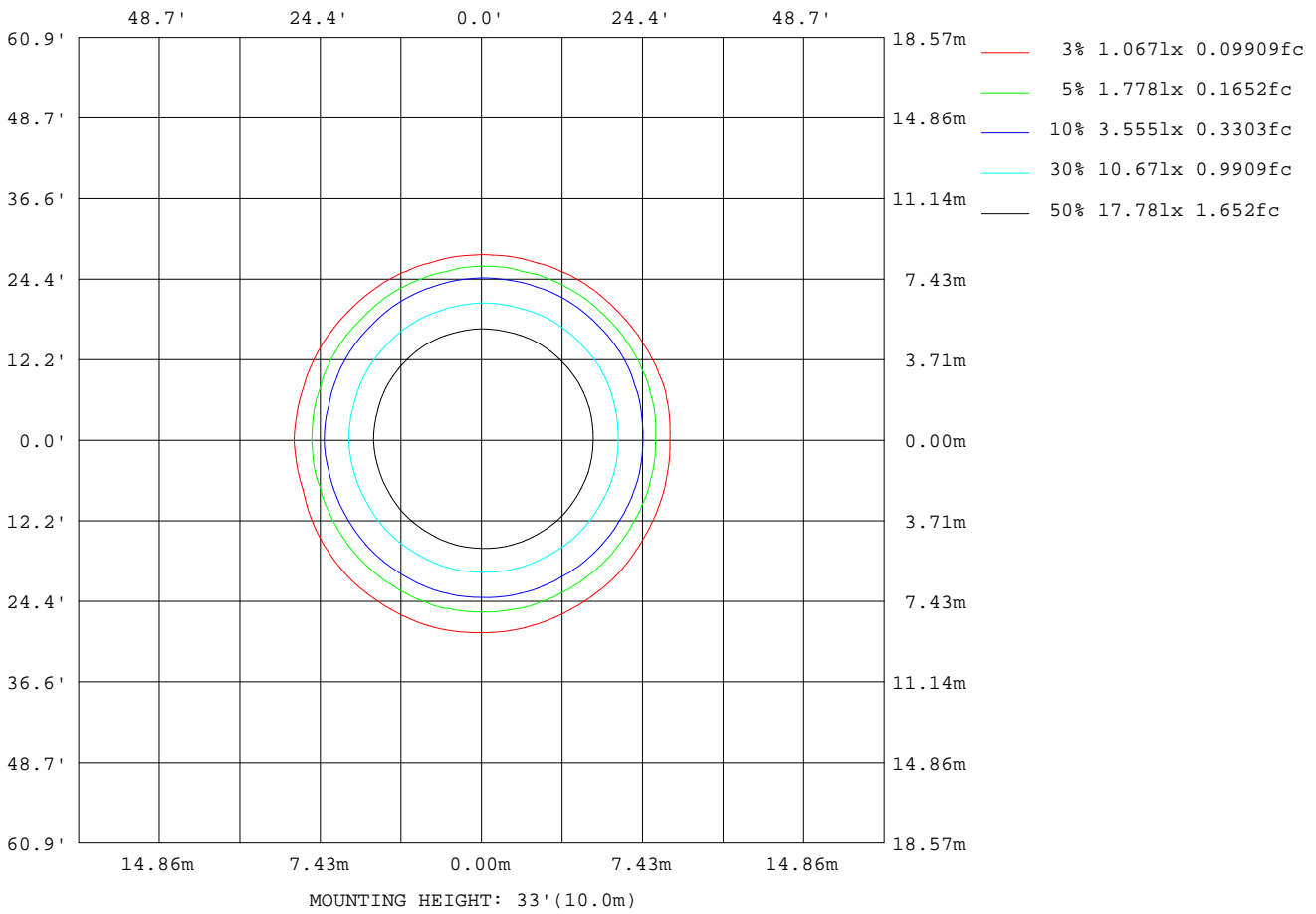
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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**ISOLUX DIAGRAM**

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LED Avg.L Report

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SPEC.:3000K	DIM.: φ218mm*H126mm	
MFR.: NEKO LIGHTING AG		

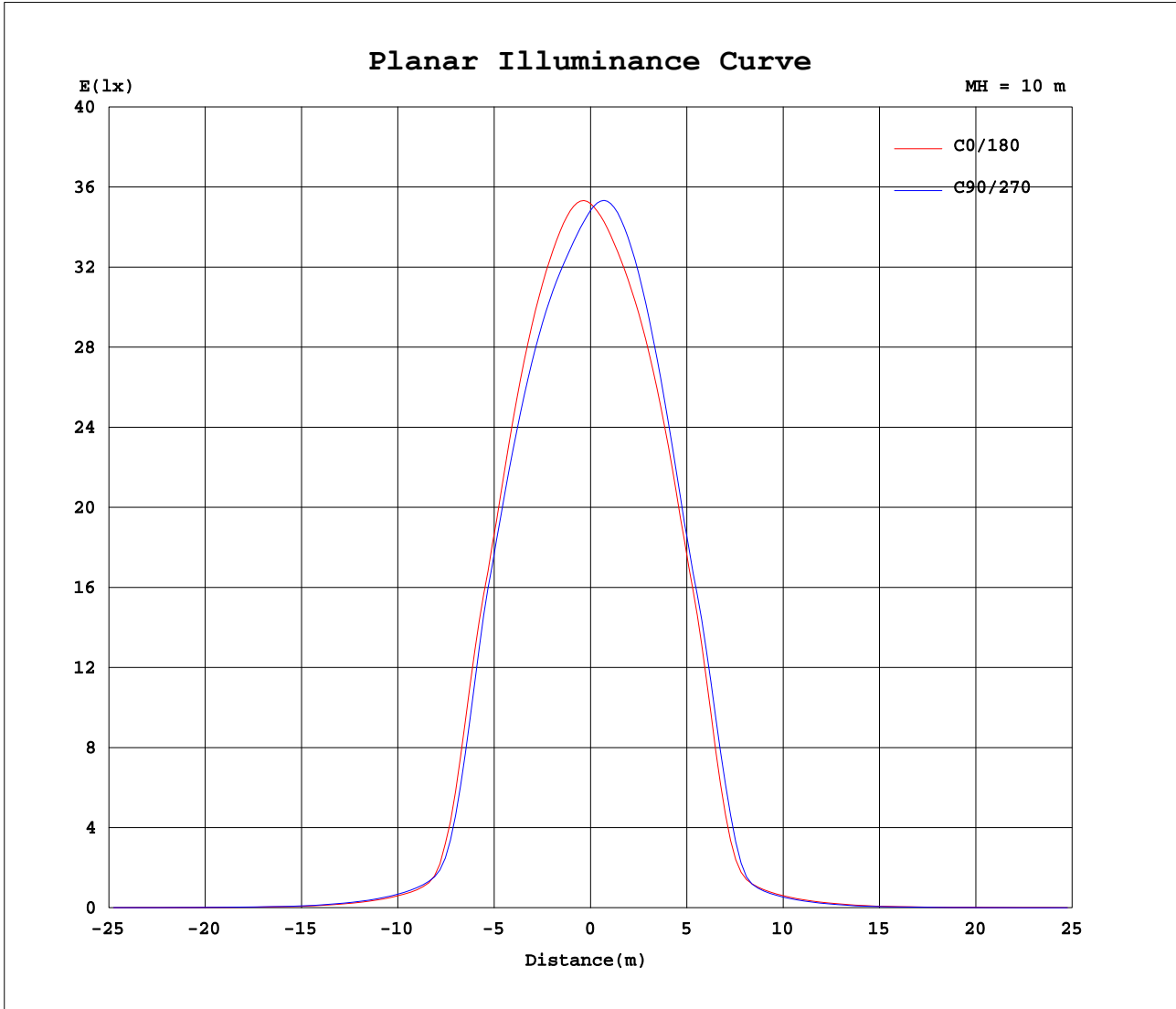
AvgL	cd/m2
L_0~180 (65) av	1173
L_0~180 (75) av	36
L_0~180 (85) av	60
L_90~270 (65) av	1122
L_90~270 (75) av	50
L_90~270 (85) av	62
L_45 (65) av	1170
L_45 (75) av	41
L_45 (85) av	61

Standard: GB/T 29293-2012

C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:Men Yongjian  
Test Date:2018-07-04

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: 2018-07-04

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 1.0DEG  
 Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.288  
 Humidity: 56%  
 Test Distance: 5.850m [K=1.0000]  
 Remarks:



