

LED Downlight TAKEO Series T200-52W-930-18



Light Output Ratio:	100.0%	
Luminaire Power:	55.91 W	
SHR Nominal:	0.00	Calculated using the TM5
SHR Maximum:	1.00	fine grid method.

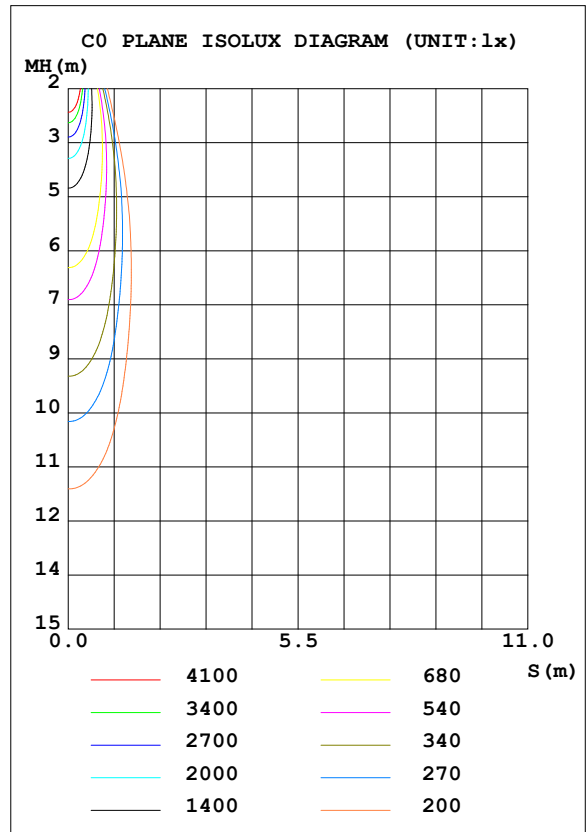
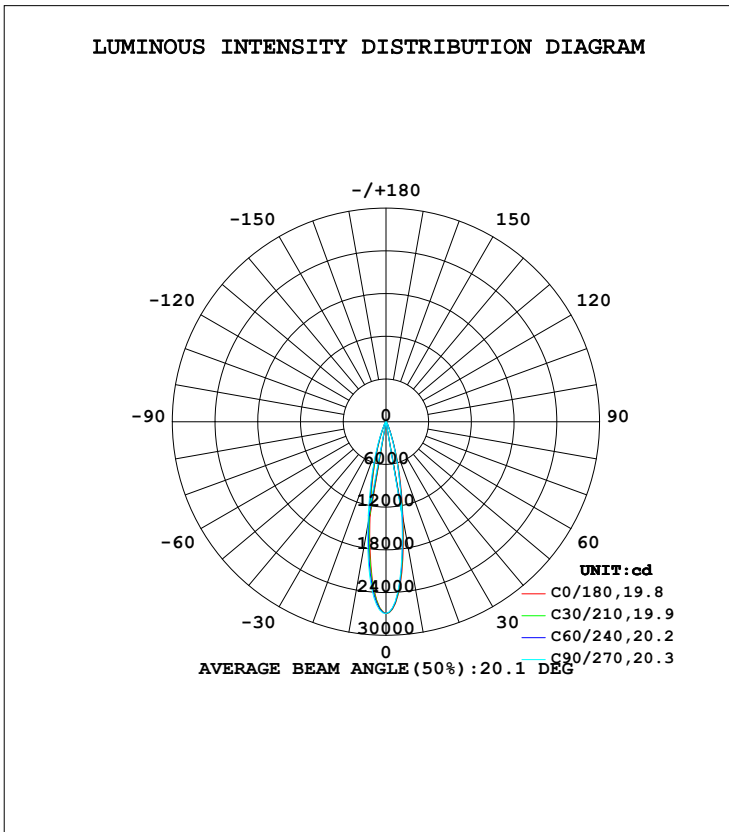
C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: Men Yongjian
Test Date: 2018-07-04

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:

LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:220.6V I:0.2623A P:55.91W PF:0.9685 Freq:49.90Hz Lamp Flux:4640.37x1 lm		
NAME: T200-52W-930-18	TYPE:Downlight	SERIAL No.:
SPEC.:3000K	DIM.: φ218mm*H126mm	
MFR.: NEKO LIGHTING AG		

DATA OF LAMP		PHOTOMETRIC DATA Eff: 83.00 lm/W			
MODEL	CITIZEN-3000K	I _{max} (cd)	26948	S/MH (C0/180)	0.33
NOMINAL POWER (W)	56	LOR (%)	100.0	S/MH (C90/270)	0.36
RATED VOLTAGE (V)	220	TOTAL FLUX (lm)	4640.4	η UP, DN (C0-180)	0.0, 48.0
NOMINAL FLUX (lm)	4640.37	CIE CLASS	DIRECT	η UP, DN (C180-360)	0.0, 52.0
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	1376	1352	1284	1254	1291	1347	1460	1467	0- 10	1858	1858	40,40
20	281.7	267.9	240.2	233.6	243.9	270.3	315.6	313.3	10- 20	1870	3728	80.3,80.3
30	55.89	54.59	50.34	48.28	50.60	54.86	59.94	60.12	20- 30	547.8	4276	92.1,92.1
40	23.34	23.30	21.92	20.91	21.38	22.63	23.77	23.80	30- 40	218.5	4495	96.9,96.9
50	7.263	7.725	7.008	6.691	6.509	7.098	7.047	7.378	40- 50	105.2	4600	99.1,99.1
60	1.635	1.693	1.574	1.562	1.445	1.476	1.448	1.607	50- 60	31.56	4631	99.8,99.8
70	0.2988	0.3134	0.2543	0.2424	0.2192	0.2055	0.2257	0.2810	60- 70	8.046	4639	100,100
80	0.0279	0.0245	0.0269	0.0241	0.0246	0.0256	0.0248	0.0276	70- 80	0.7167	4640	100,100
90	0.0194	0.0192	0.0193	0.0184	0.0150	0.0149	0.0153	0.0169	80- 90	0.2443	4640	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:×10cd									UNIT:lm		

Conical surface Flux(90deg): 4560.2 lm

%lum = 98.3%

%lamp = 98.3%

Conical surface Flux(120deg): 4631.4 lm

%lum = 99.8%

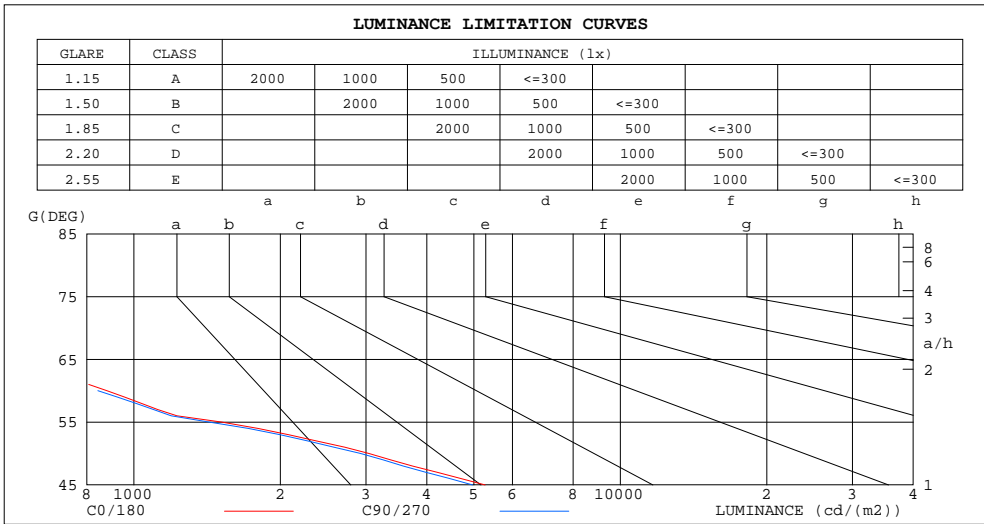
%lamp = 99.8%

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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	42
75	35	34
70	235	199
65	545	493
60	880	843
55	1513	1427
50	3040	2921
45	5271	4969

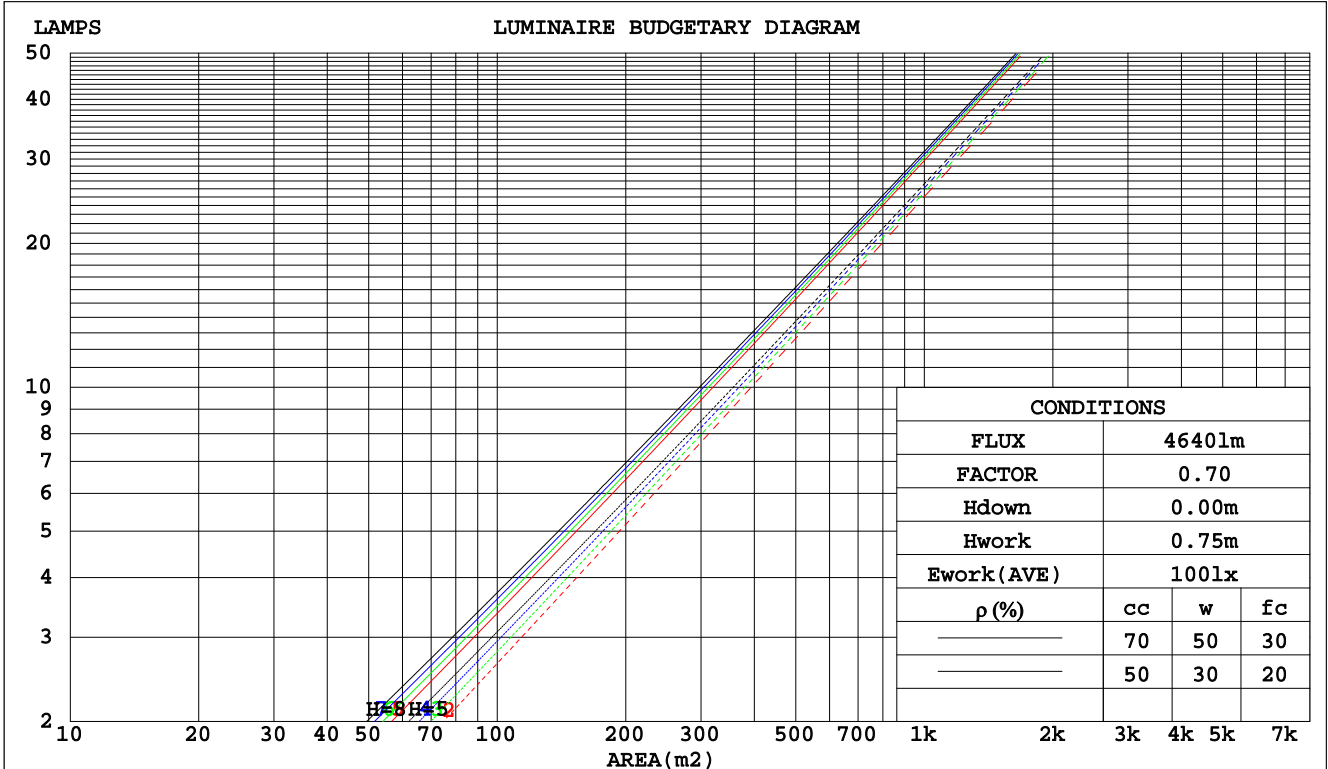
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CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

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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																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	1.08	1.07	1.06	1.04	1.03	1.02	1.01	.00	.99	.98	.97
2.0	1.08	1.05	1.02	1.06	1.03	1.01	1.03	1.01	.99	1.00	.98	.97	.97	.96	.95	.93
3.0	1.03	.00	.97	1.02	.99	.96	.99	.97	.94	.97	.95	.93	.95	.93	.92	.90
4.0	.99	.95	.92	.98	.94	.92	.96	.93	.91	.94	.92	.90	.93	.90	.89	.87
5.0	.96	.91	.88	.95	.91	.88	.93	.90	.87	.92	.89	.87	.90	.88	.86	.85
6.0	.92	.88	.85	.92	.88	.85	.90	.87	.84	.89	.86	.84	.88	.85	.83	.82
7.0	.90	.85	.83	.89	.85	.82	.88	.84	.82	.87	.84	.82	.86	.83	.81	.80
8.0	.87	.83	.80	.86	.83	.80	.85	.82	.80	.85	.82	.79	.84	.81	.79	.78
9.0	.84	.80	.78	.84	.80	.78	.83	.80	.77	.83	.79	.77	.82	.79	.77	.76
10.0	.82	.78	.76	.82	.78	.76	.81	.78	.75	.81	.78	.75	.80	.77	.75	.74



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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	.136	.077	.025	.129	.074	.023	.117	.067	.021	.106	.061	.020	.095	.055	.018	
2.0	.126	.069	.021	.121	.067	.021	.111	.062	.019	.101	.057	.018	.093	.052	.017	
3.0	.118	.063	.019	.113	.061	.018	.105	.057	.017	.097	.053	.016	.090	.050	.015	
4.0	.110	.057	.017	.106	.056	.016	.099	.053	.016	.093	.050	.015	.086	.047	.014	
5.0	.104	.053	.015	.100	.052	.015	.094	.049	.014	.089	.047	.014	.083	.045	.013	
6.0	.098	.049	.014	.095	.048	.014	.090	.046	.013	.085	.044	.013	.080	.042	.013	
7.0	.093	.046	.013	.090	.045	.013	.086	.043	.013	.082	.042	.012	.078	.040	.012	
8.0	.088	.043	.012	.086	.042	.012	.082	.041	.012	.078	.040	.011	.075	.038	.011	
9.0	.084	.041	.011	.082	.040	.011	.079	.039	.011	.076	.038	.011	.072	.037	.011	
10.0	.081	.039	.011	.079	.038	.011	.076	.037	.010	.073	.036	.010	.070	.035	.010	

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	.168	.158	.148	.144	.135	.127	.098	.093	.088	.057	.054	.051	.018	.017	.017	
2.0	.150	.133	.118	.129	.114	.102	.088	.079	.071	.051	.046	.042	.016	.015	.014	
3.0	.135	.113	.096	.116	.098	.083	.080	.068	.058	.046	.040	.034	.015	.013	.011	
4.0	.123	.098	.079	.105	.085	.069	.072	.059	.048	.042	.035	.029	.013	.011	.009	
5.0	.112	.086	.066	.096	.074	.057	.066	.052	.041	.038	.030	.024	.012	.010	.008	
6.0	.103	.076	.056	.089	.065	.049	.061	.046	.034	.035	.027	.020	.011	.009	.007	
7.0	.095	.067	.048	.082	.058	.042	.057	.041	.029	.033	.024	.018	.011	.008	.006	
8.0	.089	.061	.041	.076	.053	.036	.053	.037	.025	.031	.022	.015	.010	.007	.005	
9.0	.083	.055	.036	.072	.048	.031	.050	.033	.022	.029	.020	.013	.009	.006	.004	
10.0	.078	.050	.031	.067	.043	.027	.047	.031	.019	.027	.018	.012	.009	.006	.004	

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 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

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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	3.4	4.0	3.6	4.2	4.3	3.2	3.8	3.4	4.0	4.1
3H	3.3	3.9	3.5	4.1	4.2	3.1	3.7	3.3	3.9	4.1
4H	3.2	3.8	3.5	4.0	4.2	3.0	3.6	3.3	3.8	4.0
6H	3.1	3.7	3.4	3.9	4.1	2.9	3.5	3.2	3.7	3.9
8H	3.1	3.6	3.4	3.8	4.1	2.9	3.4	3.2	3.6	3.9
12H	3.0	3.5	3.3	3.8	4.1	2.8	3.3	3.1	3.6	3.9
4H 2H	3.2	3.8	3.5	4.0	4.2	3.0	3.6	3.3	3.8	4.0
3H	3.1	3.6	3.4	3.9	4.1	2.9	3.4	3.2	3.7	3.9
4H	3.0	3.5	3.3	3.8	4.1	2.8	3.3	3.1	3.6	3.9
6H	2.9	3.3	3.3	3.6	4.0	2.7	3.1	3.1	3.4	3.8
8H	2.8	3.2	3.2	3.6	3.9	2.6	3.0	3.0	3.4	3.7
12H	2.8	3.1	3.2	3.5	3.9	2.6	2.9	3.0	3.3	3.7
8H 4H	2.8	3.2	3.2	3.6	3.9	2.7	3.0	3.0	3.4	3.7
6H	2.7	3.1	3.2	3.4	3.9	2.5	2.9	3.0	3.2	3.7
8H	2.7	3.0	3.1	3.4	3.8	2.5	2.8	2.9	3.2	3.6
12H	2.6	2.9	3.1	3.3	3.8	2.4	2.7	2.9	3.1	3.6
12H 4H	2.8	3.1	3.2	3.5	3.9	2.6	2.9	3.0	3.3	3.7
6H	2.7	3.0	3.1	3.4	3.8	2.5	2.8	2.9	3.2	3.6
8H	2.6	2.9	3.1	3.3	3.8	2.4	2.7	2.9	3.1	3.6
Variations with the observer position at spacings:										
S = 1.0H	+ 2.4 / - 7.8					+ 2.4 / - 7.7				
1.5H	+ 3.4 / - 6.4					+ 3.1 / - 6.0				
2.0H	+ 5.3 / - 6.9					+ 5.0 / - 6.8				

CIE Pub.117, 4640 lm Total Lamp Luminous Flux Correct (8log(F/F0) = 5.3)

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UTILIZATION FACTORS TABLE

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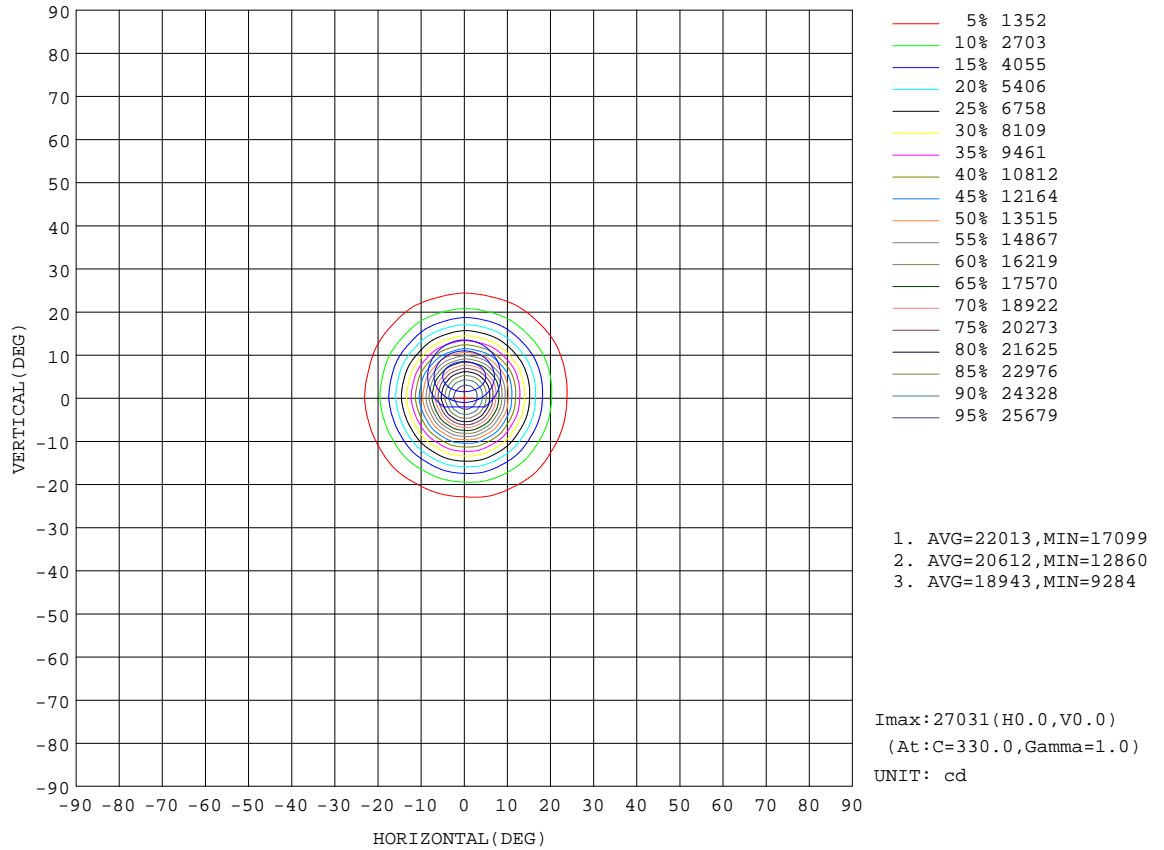
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	90	84	80	89	83	80	88	83	80	77
0.80	97	91	88	96	91	88	95	90	87	84
1.00	101	96	92	100	95	92	98	95	91	88
1.25	105	100	96	104	99	96	102	98	95	91
1.50	107	103	100	106	102	99	104	100	98	94
2.00	109	106	103	108	104	102	105	103	100	95
2.50	111	107	105	109	106	104	106	104	102	96
3.00	112	109	107	111	108	106	107	105	103	97
4.00	114	112	110	112	110	108	109	107	106	99
5.00	115	113	112	113	112	110	109	108	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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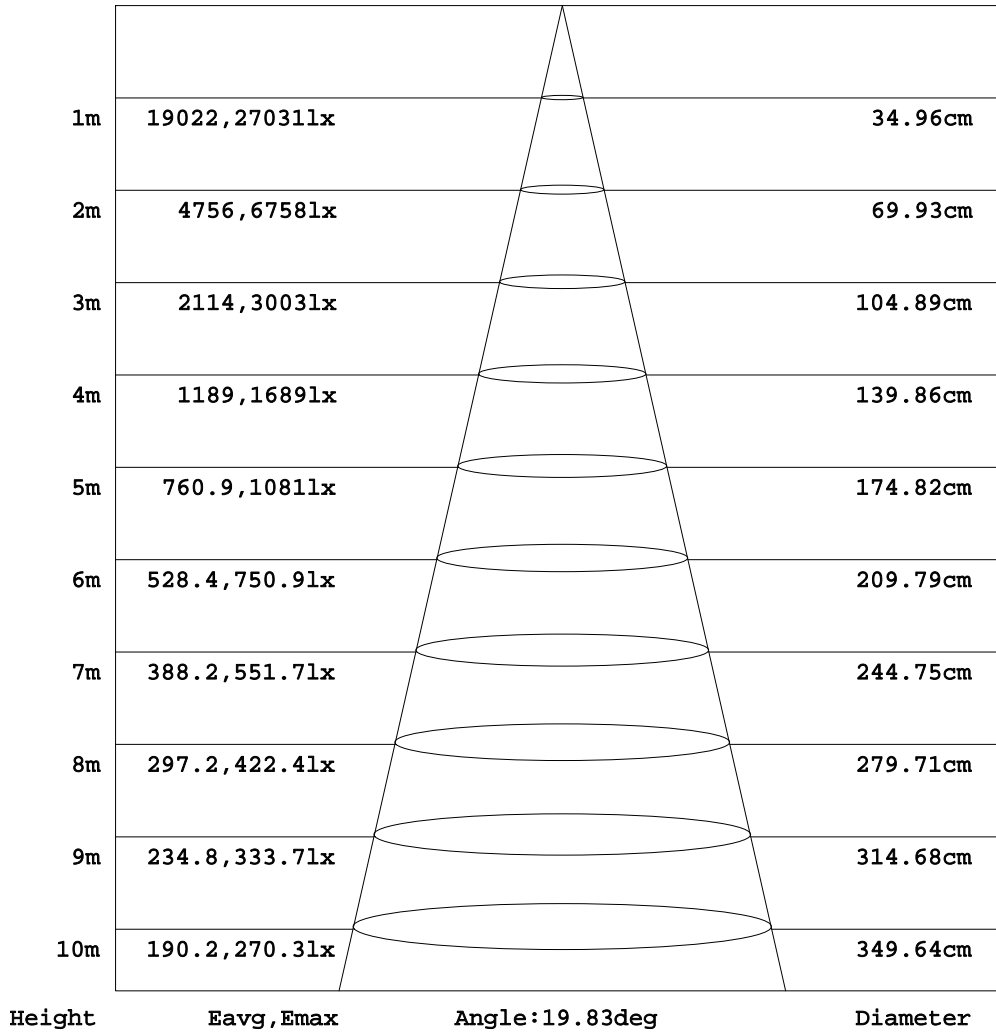
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AAI Figure

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Flux out:1858 lm



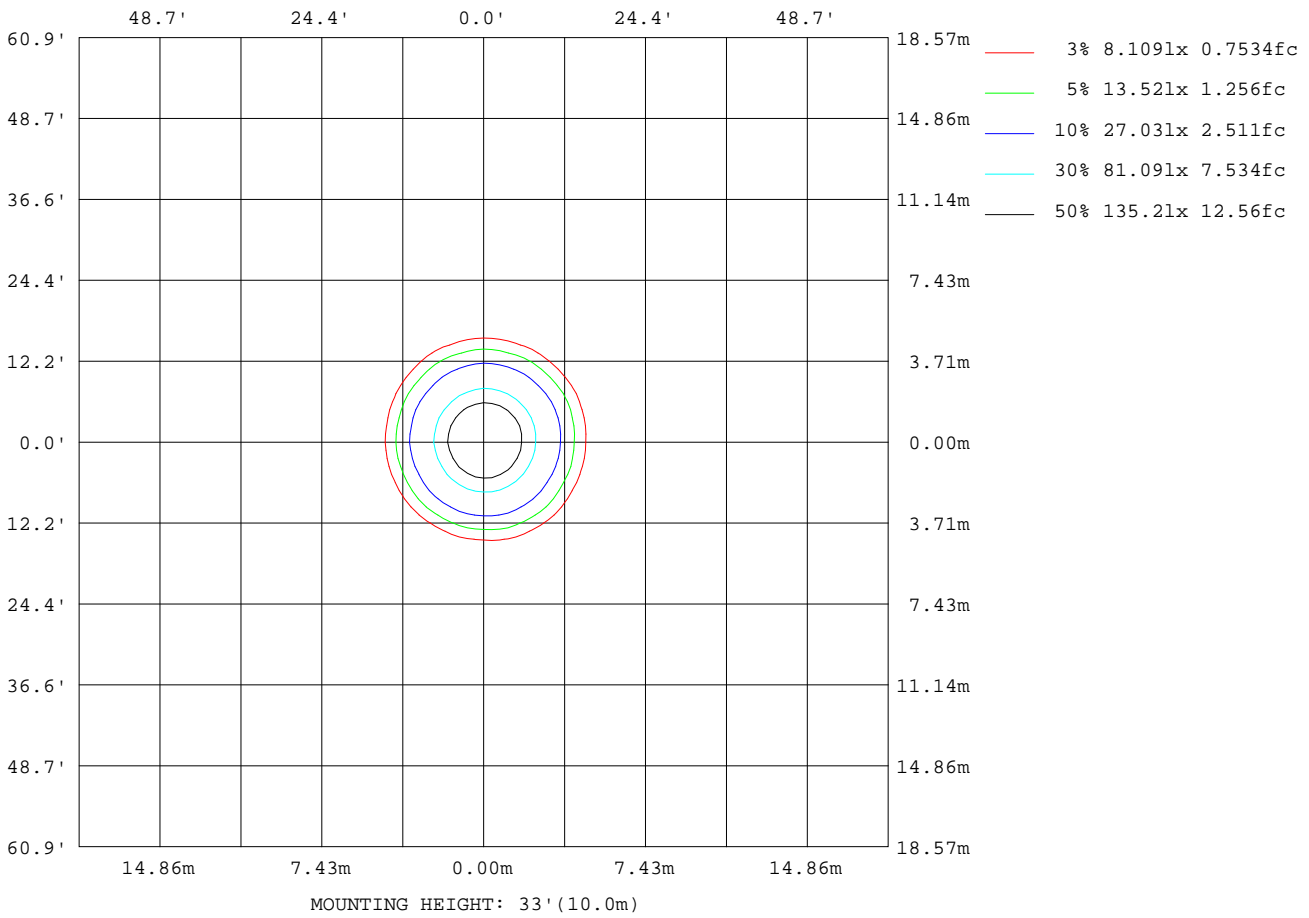
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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ISOLUX DIAGRAM

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LED Avg.L Report

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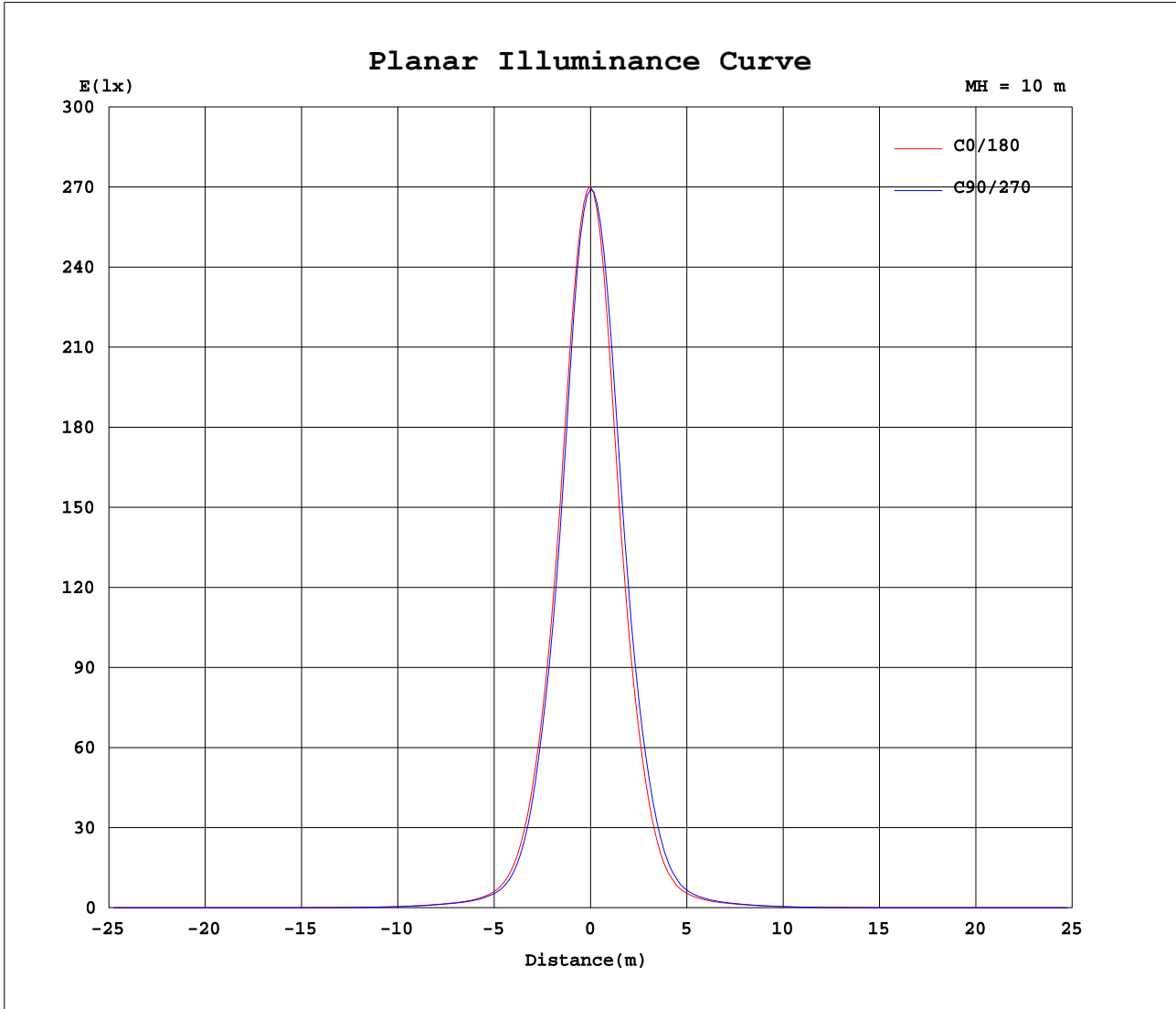
AvgL	cd/m2
L_0~180 (65) av	502
L_0~180 (75) av	32
L_0~180 (85) av	72
L_90~270 (65) av	470
L_90~270 (75) av	31
L_90~270 (85) av	73
L_45 (65) av	505
L_45 (75) av	32
L_45 (85) av	71

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

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:

