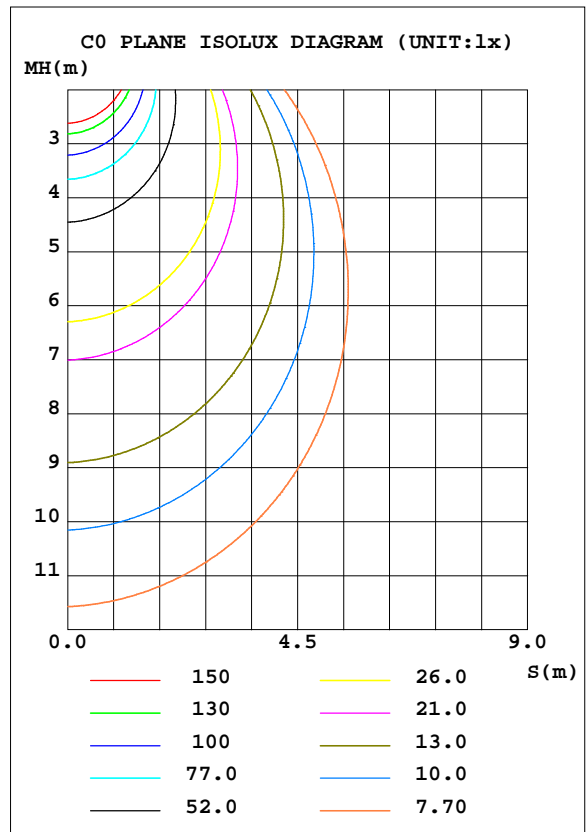
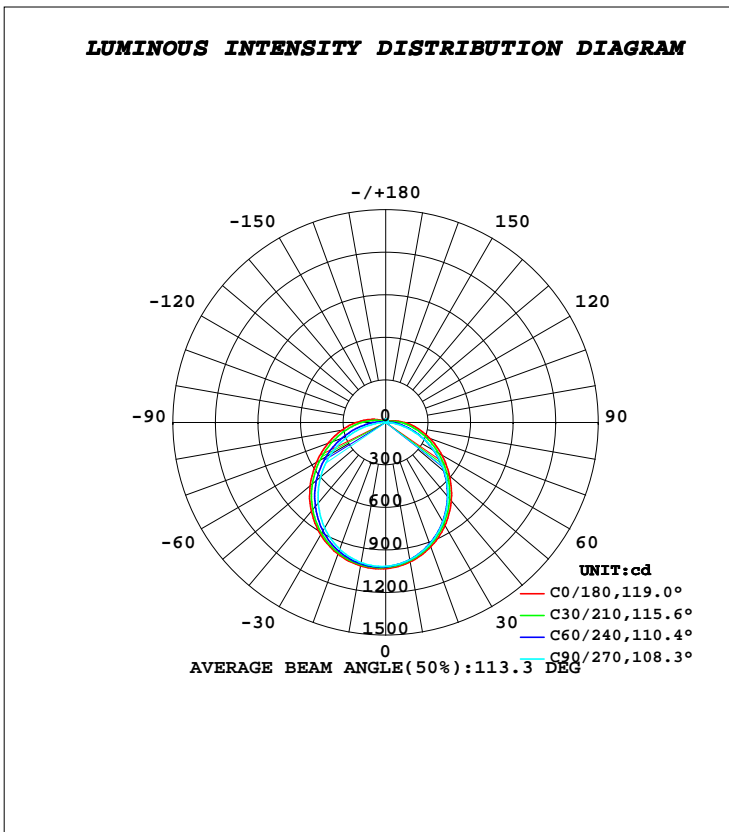


**LUMINAIRE PHOTOMETRIC TEST REPORT**

Test:U:220.1V I:0.1700A P:31.20W PF:0.8230 Lamp Flux:3270.67x1 lm		
NAME: 0.9M-33W-4500K	TYPE:LED	
MFR.:		

DATA OF LAMP		PHOTOMETRIC DATA Eff: 104.83 lm/W			
MODEL	0.9M-33W-4500K	I <sub>max</sub> (cd)	1034	S/MH(C0/180)	1.22
NOMINAL POWER(W)	33	LOR(%)	100.0	S/MH(C90/270)	1.20
RATED VOLTAGE(V)	220	TOTAL FLUX(lm)	3270.7	η UP, DN(C0-180)	2.5,44.9
NOMINAL FLUX(lm)	3270.67	CIE CLASS	DIRECT	η UP, DN(C180-360)	3.1,49.4
LAMPS INSIDE	1	η up(%)	5.6	CIBSE SHR NOM	1.25
TEST VOLTAGE(V)	220.1	η down(%)	94.4	CIBSE SHR MAX	1.35



**C Range: 0 - 360DEG**  
**C Interval: 30.0DEG**  
**Test Speed: HIGH**  
**Temperature:25.3DEG**  
**Operators:DAMIN**  
**Test Date:2018-01-17**

**γ Range: 0 - 180DEG**  
**γ Interval: 1.0DEG**  
**Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.267**  
**Humidity:65.0%**  
**Test Distance:8.000m [K=0.7063]**  
**Remarks:**

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

$\gamma$	C0	C45	C90	C135	C180	C225	C270	C315	$\gamma$	$\Phi$ zone	$\Phi$ total	%lum,lamp
10	998.5	985.9	983.0	991.8	1027	1016	1003	993.4	0- 10	96.27	96.27	2.94,2.94
20	933.2	915.0	912.3	935.2	987.2	972.9	951.0	937.5	10- 20	275.0	371.3	11.4,11.4
30	838.4	814.4	809.7	846.9	915.9	895.1	861.1	848.4	20- 30	415.3	786.6	24,24
40	720.6	691.0	684.1	734.0	816.7	786.8	741.0	731.6	30- 40	499.2	1286	39.3,39.3
50	588.3	552.7	543.1	603.6	697.6	657.5	600.0	596.4	40- 50	518.8	1805	55.2,55.2
60	456.4	408.9	391.9	463.4	563.4	512.0	443.9	449.5	50- 60	476.4	2281	69.7,69.7
70	332.7	272.6	237.2	325.1	433.7	366.1	280.5	307.7	60- 70	385.4	2666	81.5,81.5
80	222.3	157.0	88.55	201.9	312.8	232.0	117.6	183.8	70- 80	267.3	2934	89.7,89.7
90	133.6	75.16	6.641	108.7	208.3	126.3	9.782	91.78	80- 90	152.5	3086	94.4,94.4
100	67.13	30.71	8.749	49.96	122.8	58.83	9.475	38.04	90-100	75.92	3162	96.7,96.7
110	27.65	15.21	10.85	21.77	60.32	25.35	11.34	17.55	100-110	34.90	3197	97.7,97.7
120	14.49	13.92	13.02	13.70	25.50	15.08	13.44	14.61	110-120	17.66	3214	98.3,98.3
130	16.43	15.90	15.17	15.08	16.50	15.75	15.57	16.55	120-130	13.59	3228	98.7,98.7
140	18.33	17.86	17.33	17.18	18.19	17.67	17.61	18.38	130-140	13.01	3241	99.1,99.1
150	19.99	19.70	19.36	19.09	19.69	19.48	19.55	20.08	140-150	11.74	3253	99.5,99.5
160	21.59	21.34	21.16	20.83	21.44	21.14	21.25	21.61	150-160	9.442	3262	99.7,99.7
170	23.12	22.72	22.65	22.39	22.91	22.43	22.52	22.71	160-170	6.213	3268	99.9,99.9
180	23.29	22.97	23.06	23.04	23.45	22.95	23.01	23.04	170-180	2.183	3271	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

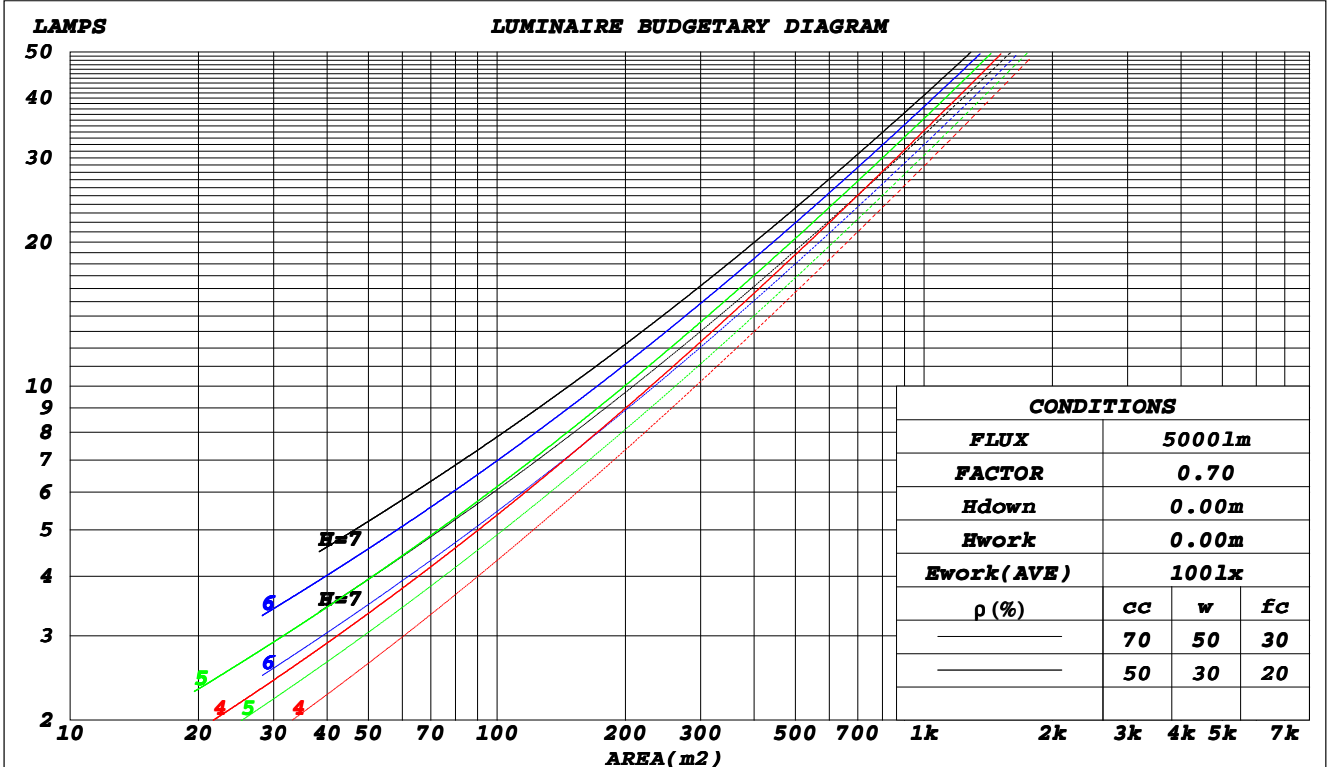
C Range: 0 - 360DEG  
 C Interval: 30.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:DAMIN  
 Test Date:2018-01-17

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 1.0DEG  
 Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.267  
 Humidity:65.0%  
 Test Distance:8.000m [K=0.7063]  
 Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:220.1V I:0.1700A P:31.20W PF:0.8230 Lamp Flux:3270.67x1 lm		
NAME: 0.9M-33W-4500K	TYPE:LED	
MFR.:		

ρcc	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	1.18	1.18	1.18	1.14	1.14	1.14	1.08	1.08	1.08	1.02	1.02	1.02	.97	.97	.97	.94
1.0	1.01	.96	.92	.98	.93	.90	.92	.89	.86	.88	.85	.82	.83	.81	.79	.76
2.0	.87	.80	.74	.85	.78	.72	.80	.75	.70	.76	.71	.67	.72	.68	.65	.62
3.0	.76	.68	.61	.74	.66	.60	.70	.64	.58	.67	.61	.56	.63	.59	.55	.52
4.0	.67	.58	.51	.66	.57	.51	.62	.55	.49	.59	.53	.48	.56	.51	.47	.44
5.0	.60	.51	.44	.59	.50	.43	.56	.48	.42	.53	.47	.41	.51	.45	.40	.38
6.0	.54	.45	.38	.53	.44	.38	.50	.43	.37	.48	.41	.36	.46	.40	.36	.33
7.0	.49	.40	.34	.48	.39	.33	.46	.38	.33	.44	.37	.32	.42	.36	.31	.29
8.0	.45	.36	.30	.44	.35	.30	.42	.34	.29	.40	.33	.29	.39	.33	.28	.26
9.0	.41	.33	.27	.40	.32	.27	.38	.31	.26	.37	.30	.26	.36	.30	.25	.23
10.0	.38	.30	.24	.37	.29	.24	.36	.29	.24	.34	.28	.23	.33	.27	.23	.21



C Range: 0 - 360DEG  
 C Interval: 30.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators: DAMIN  
 Test Date: 2018-01-17

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.267  
 Humidity: 65.0%  
 Test Distance: 8.000m [K=0.7063]  
 Remarks:

**WEC AND CCEC**

Test:U:220.1V I:0.1700A P:31.20W PF:0.8230 Lamp Flux:3270.67x1 lm		
NAME: 0.9M-33W-4500K	TYPE:LED	
MFR.:		

$\rho_{cc}$	80%			70%			50%			30%			10%			0
$\rho_w$	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
$\rho_{fc}$	20%			20%			20%			20%			20%			0
<b>RCR</b>	<b>RCR:Room Cavity Ratio</b>						<b>Wall Exitance Coefficients(WEC)</b>									
0.0																
1.0	.345	.196	.062	.336	.192	.061	.319	.183	.059	.304	.175	.056	.290	.168	.054	
2.0	.311	.170	.052	.303	.167	.051	.288	.160	.050	.274	.154	.048	.262	.148	.047	
3.0	.282	.150	.045	.275	.147	.044	.261	.142	.043	.249	.136	.042	.238	.132	.041	
4.0	.257	.133	.039	.251	.131	.039	.239	.127	.038	.228	.122	.037	.217	.118	.036	
5.0	.236	.120	.035	.230	.118	.034	.219	.114	.034	.209	.110	.033	.200	.107	.032	
6.0	.217	.109	.031	.212	.107	.031	.203	.104	.030	.194	.101	.030	.185	.098	.029	
7.0	.201	.100	.028	.197	.098	.028	.188	.095	.027	.180	.092	.027	.172	.090	.026	
8.0	.188	.092	.026	.183	.090	.026	.176	.088	.025	.168	.085	.025	.161	.083	.024	
9.0	.175	.085	.024	.172	.084	.023	.164	.081	.023	.158	.079	.023	.151	.077	.022	
10.0	.165	.079	.022	.161	.078	.022	.155	.076	.021	.148	.074	.021	.143	.072	.021	

$\rho_{cc}$	80%			70%			50%			30%			10%			0
$\rho_w$	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
$\rho_{fc}$	20%			20%			20%			20%			20%			0
<b>RCR</b>	<b>RCR:Room Cavity Ratio</b>						<b>Ceiling Cavity Exitance Coefficients(CCEC)</b>									
0.0	.233	.233	.233	.200	.200	.200	.136	.136	.136	.078	.078	.078	.025	.025	.025	
1.0	.226	.199	.175	.193	.171	.151	.132	.118	.104	.076	.068	.061	.024	.022	.020	
2.0	.218	.175	.139	.187	.151	.120	.128	.105	.084	.074	.061	.049	.024	.020	.016	
3.0	.211	.158	.117	.181	.137	.101	.124	.095	.071	.072	.055	.042	.023	.018	.014	
4.0	.203	.145	.101	.174	.126	.088	.120	.087	.062	.069	.051	.037	.022	.017	.012	
5.0	.195	.135	.091	.168	.117	.079	.115	.082	.056	.067	.048	.033	.022	.016	.011	
6.0	.188	.127	.083	.161	.110	.072	.111	.077	.051	.065	.045	.030	.021	.015	.010	
7.0	.181	.120	.077	.156	.104	.067	.107	.073	.048	.062	.043	.028	.020	.014	.009	
8.0	.174	.114	.073	.150	.099	.064	.104	.070	.045	.060	.041	.027	.020	.013	.009	
9.0	.168	.109	.070	.145	.095	.061	.100	.067	.043	.058	.039	.026	.019	.013	.009	
10.0	.162	.105	.067	.140	.091	.059	.097	.064	.042	.057	.038	.025	.018	.012	.008	

C Range: 0 - 360DEG  
 C Interval: 30.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:DAMIN  
 Test Date:2018-01-17

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 1.0DEG  
 Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.267  
 Humidity:65.0%  
 Test Distance:8.000m [K=0.7063]  
 Remarks:

**Uncorrected UGR Table**

Test:U:220.1V I:0.1700A P:31.20W PF:0.8230 Lamp Flux:3270.67x1 lm		
NAME: 0.9M-33W-4500K	TYPE:LED	
MFR.:		

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	20.2	21.7	20.6	22.0	22.3	19.6	21.1	19.9	21.4	21.7
3H	22.1	23.5	22.5	23.9	24.2	21.0	22.4	21.4	22.7	23.1
4H	23.1	24.4	23.5	24.8	25.2	21.6	22.9	22.0	23.2	23.6
6H	24.1	25.4	24.6	25.7	26.1	21.9	23.2	22.3	23.5	23.9
8H	24.7	25.9	25.1	26.3	26.7	22.0	23.2	22.4	23.6	24.0
12H	25.3	26.4	25.7	26.8	27.3	22.0	23.2	22.5	23.6	24.0
4H 2H	20.8	22.1	21.2	22.4	22.8	20.3	21.6	20.6	21.9	22.3
3H	22.9	24.0	23.3	24.4	24.9	21.8	23.0	22.3	23.4	23.8
4H	24.0	25.1	24.5	25.5	26.0	22.5	23.6	23.0	24.0	24.5
6H	25.2	26.2	25.7	26.6	27.1	23.0	24.0	23.5	24.4	24.9
8H	25.9	26.8	26.4	27.2	27.7	23.2	24.1	23.7	24.5	25.0
12H	26.6	27.4	27.1	27.9	28.5	23.3	24.1	23.8	24.6	25.1
8H 4H	24.3	25.2	24.8	25.6	26.1	23.0	23.9	23.5	24.3	24.8
6H	25.7	26.5	26.3	27.0	27.5	23.7	24.4	24.2	24.9	25.5
8H	26.6	27.2	27.1	27.8	28.3	23.9	24.6	24.5	25.1	25.7
12H	27.5	28.1	28.1	28.7	29.2	24.1	24.7	24.7	25.3	25.9
12H 4H	24.3	25.1	24.8	25.6	26.1	23.1	23.9	23.6	24.4	24.9
6H	25.8	26.5	26.4	27.0	27.6	23.9	24.6	24.4	25.1	25.7
8H	26.7	27.3	27.3	27.8	28.4	24.3	24.8	24.8	25.4	26.0
<b>Variations with the observer position at spacings:</b>										
S = 1.0H	+ 0.1 / - 0.1					+ 0.1 / - 0.2				
1.5H	+ 0.2 / - 0.2					+ 0.2 / - 0.3				
2.0H	+ 0.1 / - 0.2					+ 0.1 / - 0.3				

CIE Pub.117 Corrected 3271 lm Total Lamp Luminous Flux.(8log(F/F0) = 4.1)

C Range: 0 - 360DEG  
 C Interval: 30.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:DAMIN  
 Test Date:2018-01-17

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.267  
 Humidity:65.0%  
 Test Distance:8.000m [K=0.7063]  
 Remarks:

**UTILIZATION FACTORS TABLE**

Test:U:220.1V I:0.1700A P:31.20W PF:0.8230 Lamp Flux:3270.67x1 lm		
NAME: 0.9M-33W-4500K	TYPE:LED	
MFR.:		

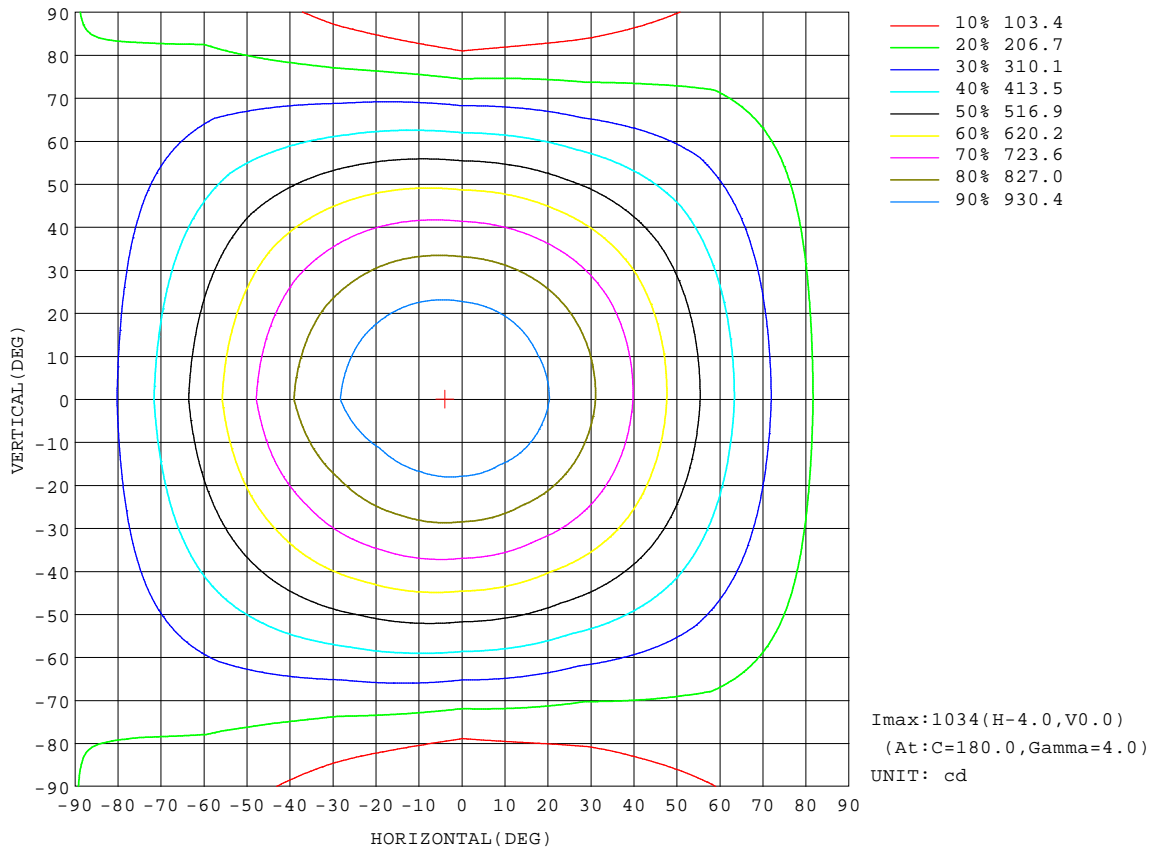
REFLECTANCE										
<b>Ceiling</b>	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
<b>Walls</b>	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
<b>Working plane</b>	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
<b>ROOM INDEX</b>	<b>UTILIZATION FACTORS(PERCENT) <math>k(RI) \times RCR = 5</math></b>									
<b>k = 0.60</b>	54	42	35	53	42	35	52	42	35	28
<b>0.80</b>	64	52	44	63	51	44	61	50	44	36
<b>1.00</b>	72	60	53	71	60	52	68	61	51	44
<b>1.25</b>	79	68	60	77	67	60	74	65	58	50
<b>1.50</b>	84	73	66	82	72	65	78	70	64	55
<b>2.00</b>	91	81	74	89	80	73	85	77	71	62
<b>2.50</b>	95	86	79	93	85	78	88	81	76	66
<b>3.00</b>	99	91	84	96	89	83	91	85	80	70
<b>4.00</b>	103	96	91	100	94	89	95	90	86	75
<b>5.00</b>	105	100	95	102	97	93	97	93	89	78
<b>ROOM INDEX</b>	<b>UF(total)</b>									<b>Direct</b>
<b>According to DIN EN 13032-2 2004</b>			<b>Suspended</b>					<b>SHRNOM = 1.25</b>		

**C Range: 0 - 360DEG**  
**C Interval: 30.0DEG**  
**Test Speed: HIGH**  
**Temperature:25.3DEG**  
**Operators:DAMIN**  
**Test Date:2018-01-17**

**$\gamma$  Range: 0 - 180DEG**  
 **$\gamma$  Interval: 1.0DEG**  
**Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.267**  
**Humidity:65.0%**  
**Test Distance:8.000m [K=0.7063]**  
**Remarks:**

**ISOCANDELA DIAGRAM**

Test:U:220.1V I:0.1700A P:31.20W PF:0.8230 Lamp Flux:3270.67x1 lm		
NAME: 0.9M-33W-4500K	TYPE:LED	
MFR.:		



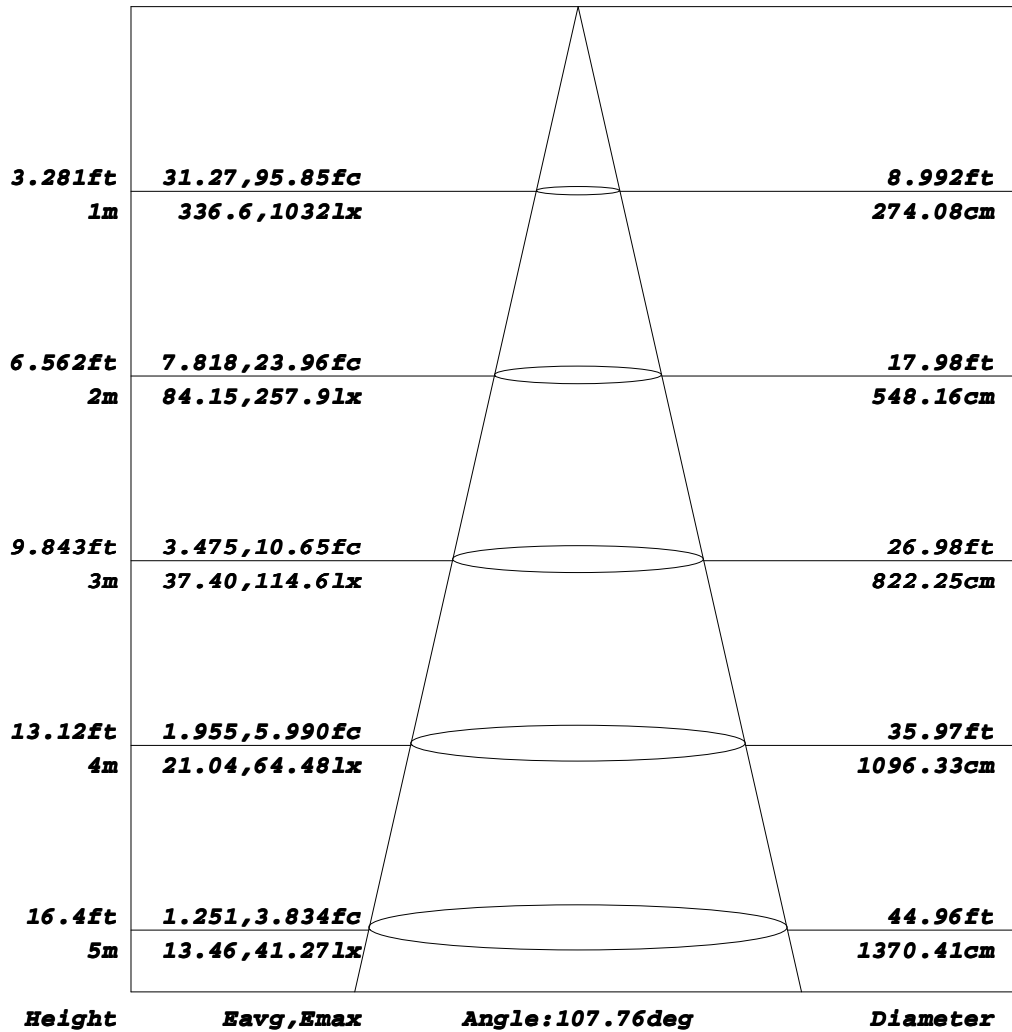
**C Range: 0 - 360DEG**  
**C Interval: 30.0DEG**  
**Test Speed: HIGH**  
**Temperature: 25.3DEG**  
**Operators: DAMIN**  
**Test Date: 2018-01-17**

**γ Range: 0 - 180DEG**  
**γ Interval: 1.0DEG**  
**Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.267**  
**Humidity: 65.0%**  
**Test Distance: 8.000m [K=0.7063]**  
**Remarks:**

**AAI Figure**

Test:U:220.1V I:0.1700A P:31.20W PF:0.8230 Lamp Flux:3270.67x1 lm		
NAME: 0.9M-33W-4500K	TYPE:LED	
MFR.:		

Flux out:2003 lm



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

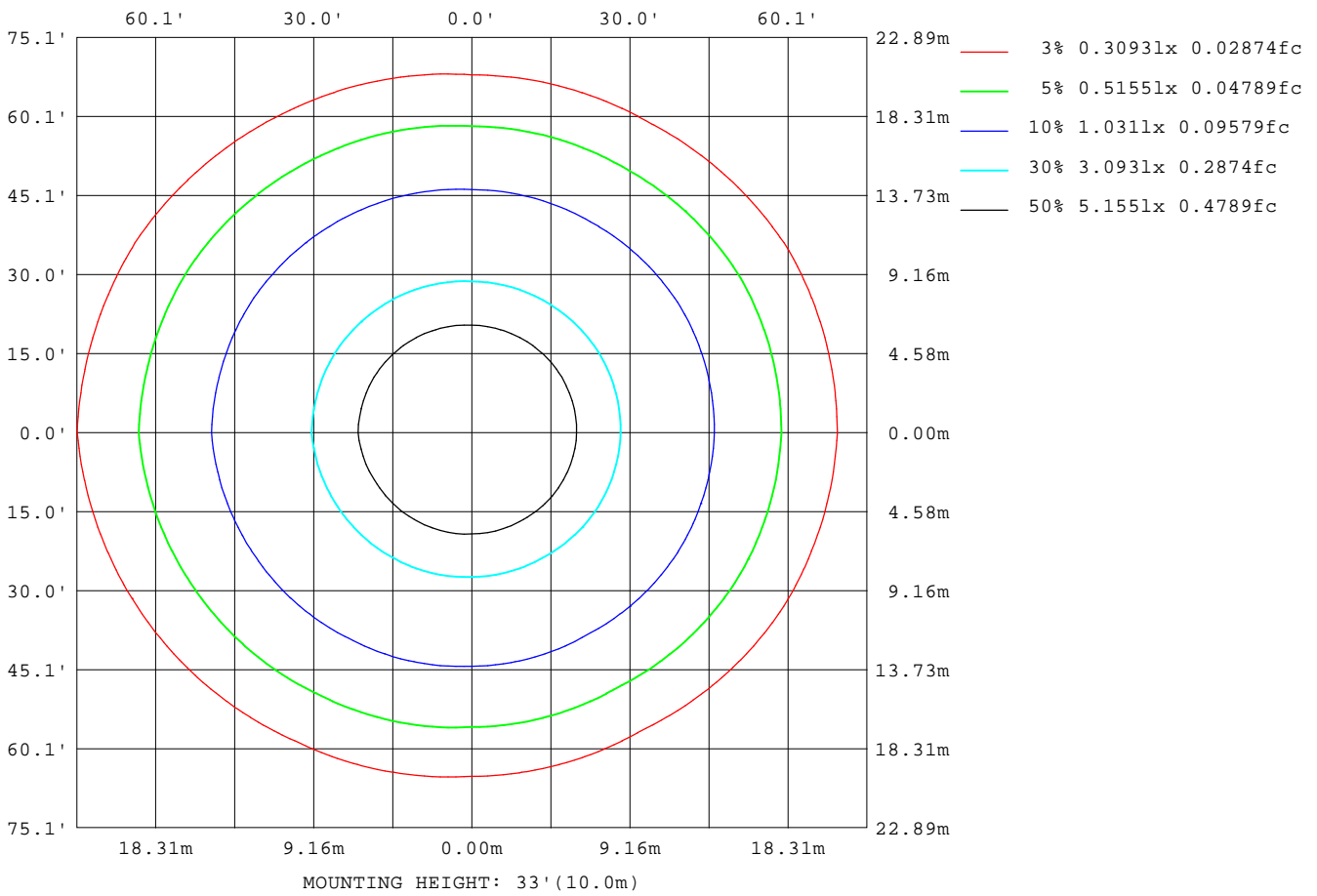
C Range: 0 - 360DEG  
 C Interval: 30.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators: DAMIN  
 Test Date: 2018-01-17

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.267  
 Humidity: 65.0%  
 Test Distance: 8.000m [K=0.7063]  
 Remarks:



**ISOLUX DIAGRAM**

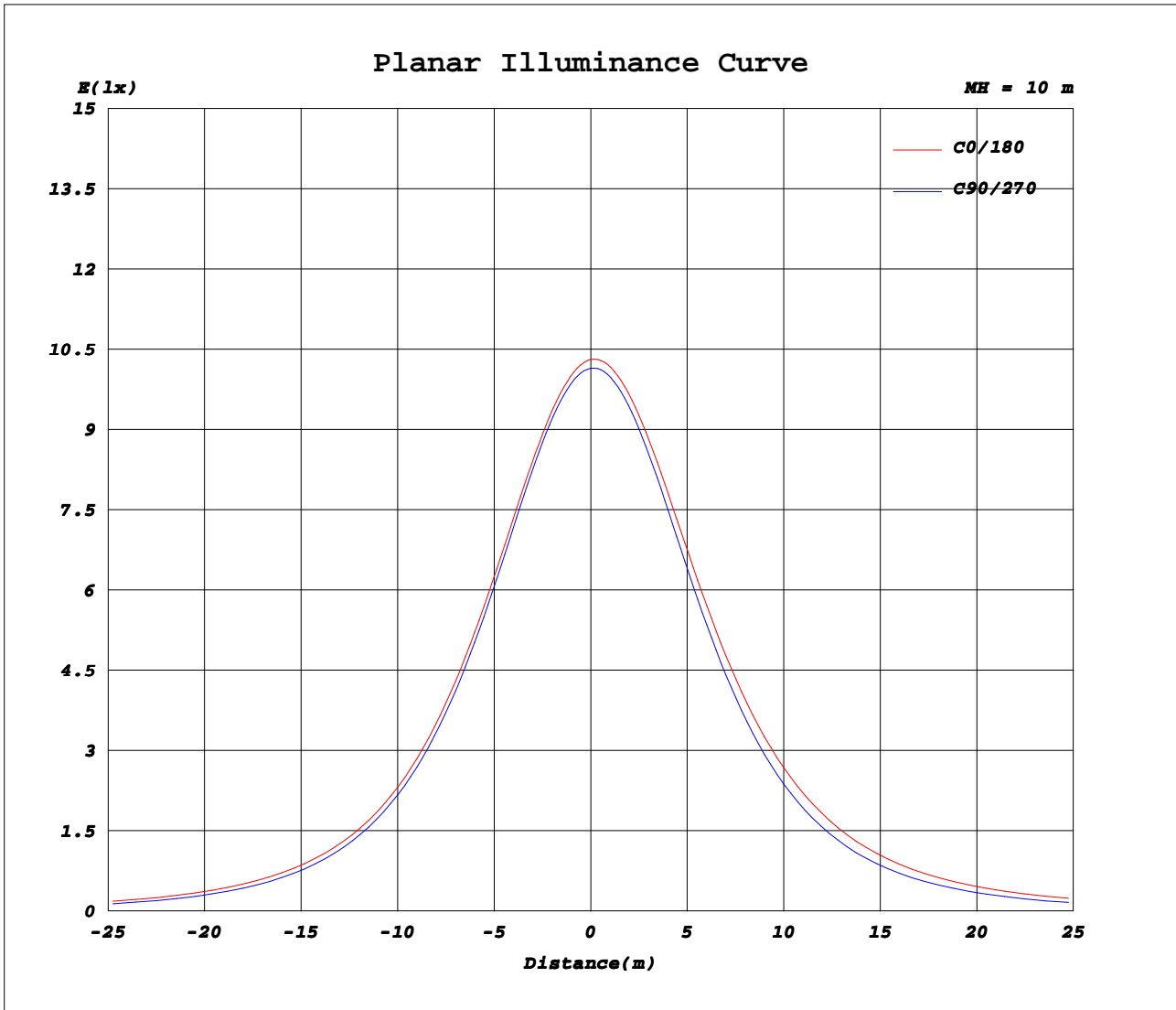
Test:U:220.1V I:0.1700A P:31.20W PF:0.8230 Lamp Flux:3270.67x1 lm		
NAME: 0.9M-33W-4500K	TYPE:LED	
MFR.:		



**C Range: 0 - 360DEG**  
**C Interval: 30.0DEG**  
**Test Speed: HIGH**  
**Temperature: 25.3DEG**  
**Operators: DAMIN**  
**Test Date: 2018-01-17**

**γ Range: 0 - 180DEG**  
**γ Interval: 1.0DEG**  
**Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.267**  
**Humidity: 65.0%**  
**Test Distance: 8.000m [K=0.7063]**  
**Remarks:**

**Planar Illuminance Curve**



**C Range: 0 - 360DEG**  
**C Interval: 30.0DEG**  
**Test Speed: HIGH**  
**Temperature: 25.3DEG**  
**Operators: DAMIN**  
**Test Date: 2018-01-17**

**γ Range: 0 - 180DEG**  
**γ Interval: 1.0DEG**  
**Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.267**  
**Humidity: 65.0%**  
**Test Distance: 8.000m [K=0.7063]**  
**Remarks:**

**LUMINOUS DISTRIBUTION INTENSITY DATA**

Test:U:220.1V I:0.1700A P:31.20W PF:0.8230 Lamp Flux:3270.67x1 lm		
NAME: 0.9M-33W-4500K	TYPE:LED	
MFR.:		

Table--1

UNIT: cd

C (DEG) \ γ (DEG)	0	30	60	90	120	150	180	210	240	270	300	330							
0	1031	1023	1018	1015	1013	1011	1031	1023	1018	1015	1013	1011							
5	1019	1011	1005	1004	1005	1008	1034	1026	1020	1015	1010	1005							
10	999	989	982	983	988	996	1027	1019	1012	1003	997	990							
15	970	959	950	952	961	975	1011	1003	994	982	975	965							
20	933	920	910	912	925	945	987	979	967	951	942	933							
25	889	875	861	864	881	908	955	946	930	911	901	893							
30	838	823	806	810	830	863	916	905	885	861	852	845							
35	782	766	745	750	774	813	870	856	832	804	796	791							
40	721	702	680	684	712	756	817	801	772	741	733	730							
45	655	636	610	615	646	695	760	741	708	672	666	666							
50	588	567	538	543	577	631	698	676	639	600	595	598							
55	522	497	465	469	505	564	630	607	564	523	517	528							
60	456	429	389	392	431	495	563	537	487	444	440	459							
65	393	363	315	314	358	429	498	468	410	364	362	393							
70	333	302	244	237	285	365	434	400	332	280	286	329							
75	275	244	179	161	217	304	372	335	257	197	217	269							
80	222	192	122	88.5	156	248	313	275	189	118	154	214							
85	176	146	77.8	30.7	106	196	258	219	130	49.0	101	165							
90	134	105	44.9	6.64	67.0	150	208	170	82.8	9.78	61.5	122							
95	97.0	73.0	24.1	7.81	38.8	111	163	127	48.8	8.69	34.1	86.1							
100	67.1	47.8	13.6	8.75	21.5	78.4	123	90.3	27.3	9.48	18.8	57.2							
105	43.8	29.9	10.7	9.73	13.0	52.2	88.3	60.7	15.7	10.4	12.4	36.5							
110	27.7	18.9	11.6	10.9	10.7	32.8	60.3	38.8	11.9	11.3	12.2	22.9							
115	17.9	13.9	12.6	12.0	11.7	20.6	39.2	24.5	12.4	12.4	13.1	16.0							
120	14.5	14.3	13.6	13.0	12.8	14.6	25.5	16.7	13.4	13.4	14.1	15.1							
125	15.4	15.3	14.6	14.1	13.9	14.0	17.8	15.1	14.4	14.5	15.1	16.0							
130	16.4	16.2	15.6	15.2	15.0	15.1	16.5	16.0	15.5	15.6	16.2	16.9							
135	17.4	17.2	16.6	16.3	16.1	16.2	17.3	17.0	16.5	16.6	17.1	17.8							
140	18.3	18.2	17.6	17.3	17.1	17.2	18.2	17.9	17.5	17.6	18.1	18.7							
145	19.2	19.1	18.5	18.4	18.1	18.2	18.9	18.7	18.4	18.6	19.0	19.5							
150	20.0	20.0	19.5	19.4	19.1	19.1	19.7	19.6	19.4	19.6	19.9	20.3							
155	20.8	20.8	20.3	20.3	20.0	19.9	20.6	20.4	20.3	20.4	20.7	21.1							
160	21.6	21.5	21.2	21.2	20.9	20.7	21.4	21.1	21.1	21.3	21.5	21.8							
165	22.4	22.2	21.9	22.0	21.7	21.5	22.2	21.8	21.9	21.9	22.1	22.3							
170	23.1	22.8	22.6	22.7	22.5	22.3	22.9	22.4	22.5	22.5	22.6	22.8							
175	23.5	23.1	23.0	23.1	22.9	22.9	23.1	22.6	22.8	22.8	22.9	22.9							
180	23.3	23.0	22.9	23.1	23.0	23.1	23.4	22.9	23.0	23.0	23.0	23.0							

**C Range: 0 - 360DEG**  
**C Interval: 30.0DEG**  
**Test Speed: HIGH**  
**Temperature: 25.3DEG**  
**Operators: DAMIN**  
**Test Date: 2018-01-17**

**γ Range: 0 - 180DEG**  
**γ Interval: 1.0DEG**  
**Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.267**  
**Humidity: 65.0%**  
**Test Distance: 8.000m [K=0.7063]**  
**Remarks:**