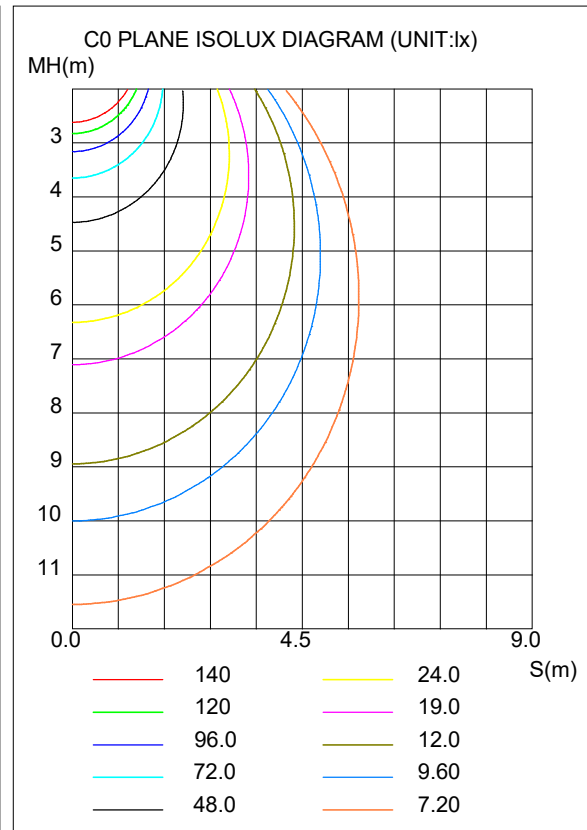
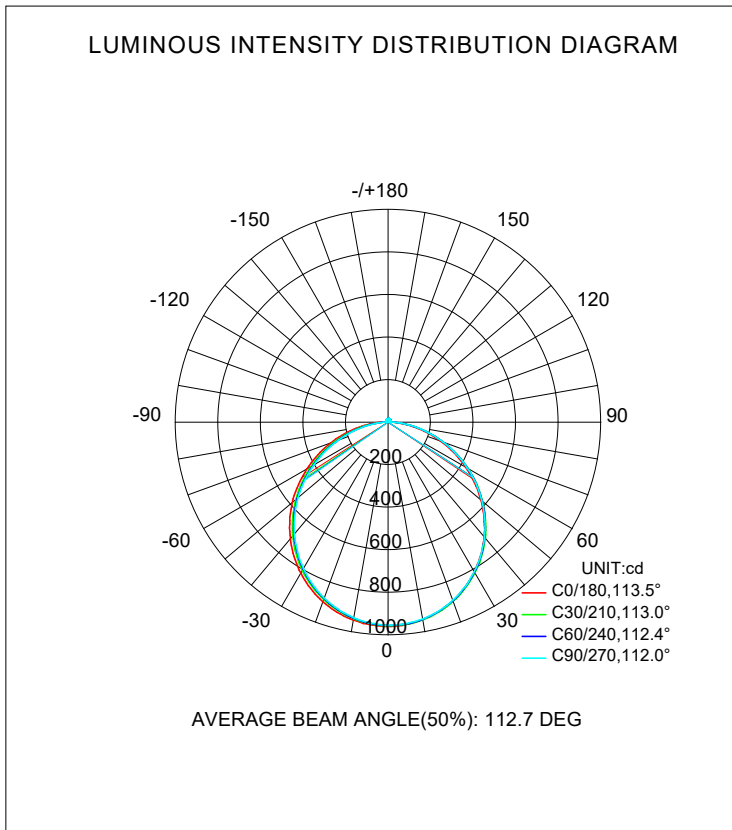


Luminaire Photometric Test Report

Test:U:220.4V I:0.0964A P:20.30W PF:0.9550 Lamp Flux:2834.58x1 lm		
NAME: PAN/595/20W	TYPE: LED	
DIM.: 595*595mm	SUR.: 545*545mm	
MFR.:		

DATA OF LAMP		PHOTOMETRIC DATA				Eff: 81.5 lm/W
MODEL	PAN/595/20W	I _{max} (cd)	960.0	S/MH(C0/180)		1.26
NOMINAL POWER(W)	20	LOR(%)	100.0	S/MH(C90/270)		1.26
RATED VOLTAGE(V)	220	TOTAL FLUX(lm)	2834.6	η UP, DN(C0-180)		1.1,49.1
NOMINAL FLUX(lm)	2834.58	CIE CLASS	DIRECT	η UP, DN(C180-360)		1.3,48.5
LAMPS INSIDE	1	η up(%)	2.4	CIBSE SHR NOM		1.25
TEST VOLTAGE(V)	220.4	η down(%)	97.6	CIBSE SHR MAX		1.35



Zonal Flux Diagram

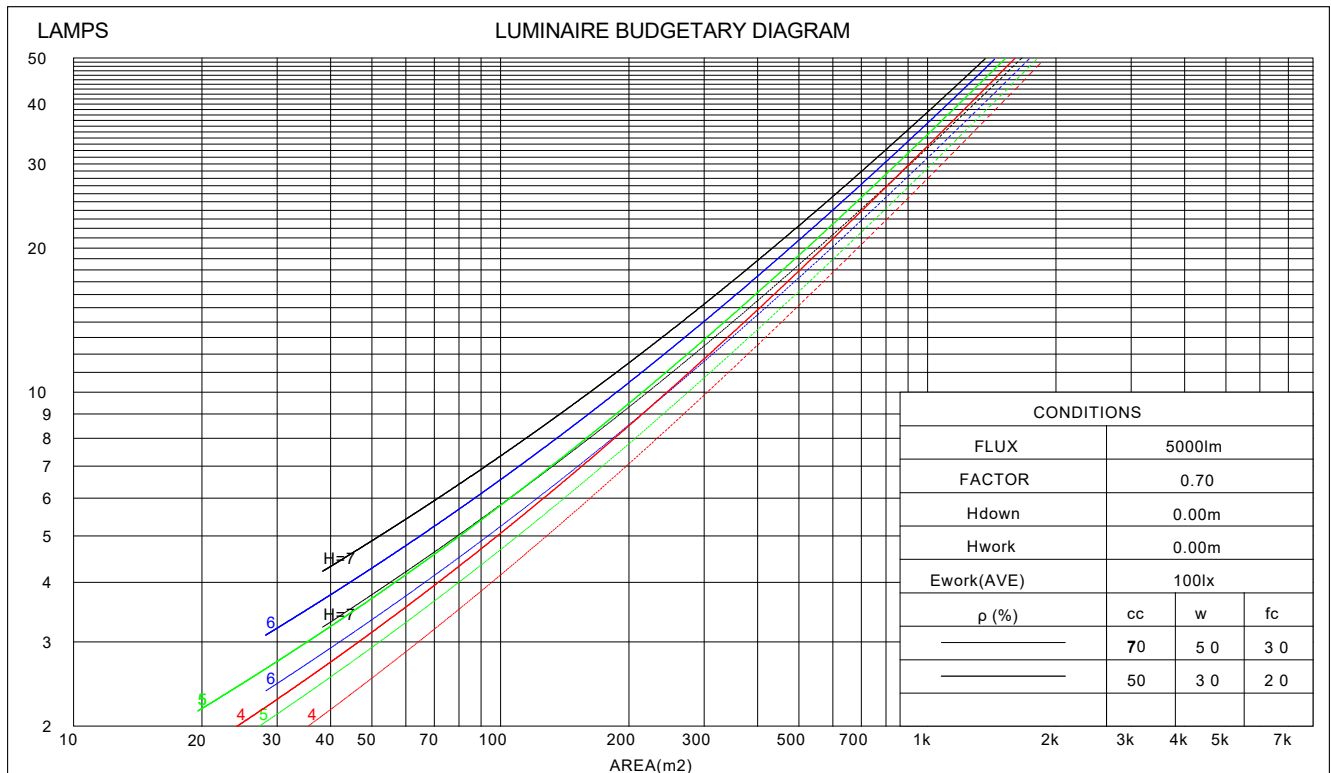
ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum,lamp
10	942.9	942.2	939.6	935.8	944.9	937.1	934.2	937.0	0- 10	90.40	90.40	3.19,3.19
20	893.4	893.9	890.4	886.4	898.4	884.6	879.7	887.8	10- 20	259.0	349.4	12.3,12.3
30	812.5	816.1	811.6	805.5	819.8	802.5	796.0	808.0	20- 30	392.8	742.2	26.2,26.2
40	703.1	709.5	705.3	697.8	714.5	692.6	685.6	700.0	30- 40	474.1	1216	42.9,42.9
50	570.0	579.6	576.1	567.9	588.4	562.6	552.0	570.5	40- 50	492.1	1708	60.3,60.3
60	421.1	431.9	430.2	422.6	441.1	413.8	403.1	422.1	50- 60	445.4	2154	76,76
70	265.4	277.2	276.4	270.0	287.5	259.2	248.7	268.0	60- 70	342.5	2496	88.1,88.1
80	115.7	127.7	129.1	123.7	140.0	113.0	103.7	119.8	70- 80	204.5	2701	95.3,95.3
90	5.638	8.701	10.95	6.718	14.58	7.771	7.610	7.726	80- 90	64.80	2766	97.6,97.6
100	7.032	6.652	6.562	6.736	8.905	9.114	8.932	8.949	90-100	7.890	2773	97.8,97.8
110	8.765	8.367	8.301	8.454	10.45	10.57	10.45	10.37	100-110	9.161	2783	98.2,98.2
120	10.36	10.00	9.966	10.07	11.92	12.03	11.95	11.81	110-120	10.15	2793	98.5,98.5
130	11.75	11.44	11.38	11.48	13.16	13.21	13.11	12.98	120-130	10.47	2803	98.9,98.9
140	12.73	12.52	12.46	12.54	13.97	14.01	13.89	13.80	130-140	9.895	2813	99.2,99.2
150	13.67	13.58	13.52	13.58	14.74	14.75	14.66	14.56	140-150	8.568	2822	99.5,99.5
160	15.00	14.98	14.93	15.02	15.74	15.74	15.67	15.55	150-160	6.789	2828	99.8,99.8
170	16.43	16.37	16.28	16.36	16.73	16.67	16.60	16.53	160-170	4.508	2833	99.9,99.9
180	16.76	16.83	16.61	16.72	16.80	16.82	16.60	16.72	170-180	1.591	2835	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

CU and Luminaire Budgetary Estimate Diagram

Test: U:220.4V I:0.0964A P:20.30W PF:0.9550 Lamp Flux:2834.58x1 lm		
NAME: PAN/595/20W	TYPE: LED	
DIM.: 595*595mm	SUR.: 545*545mm	
MFR.:		

ρ cc	80%			70%			50%			30%			10%			0
ρ w	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρ fc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio															
	Coefficients of Utilization(CU)															
0.0	1.18	1.18	1.18	1.15	1.15	1.15	1.10	1.10	1.10	1.05	1.05	1.05	.00	.00	.00	.98
1.0	1.03	.99	.95	1.00	.97	.93	.96	.93	.90	.91	.89	.86	.87	.85	.83	.81
2.0	.90	.83	.77	.87	.81	.76	.83	.78	.74	.80	.75	.71	.76	.73	.70	.67
3.0	.79	.70	.64	.77	.69	.63	.73	.67	.61	.70	.65	.60	.67	.63	.59	.56
4.0	.69	.61	.54	.68	.60	.53	.65	.58	.52	.63	.56	.51	.60	.55	.50	.48
5.0	.62	.53	.46	.61	.52	.46	.58	.51	.45	.56	.50	.44	.54	.48	.44	.41
6.0	.56	.47	.40	.55	.46	.40	.53	.45	.39	.51	.44	.39	.49	.43	.38	.36
7.0	.51	.42	.36	.50	.41	.35	.48	.40	.35	.46	.39	.34	.45	.39	.34	.32
8.0	.46	.38	.32	.45	.37	.31	.44	.36	.31	.42	.36	.31	.41	.35	.30	.28
9.0	.42	.34	.28	.42	.34	.28	.40	.33	.28	.39	.32	.28	.38	.32	.27	.26
10.0	.39	.31	.26	.38	.31	.26	.37	.30	.25	.36	.30	.25	.35	.29	.25	.23



Goniophotometers System Test Report



WEC and CCEB

Test: U:220.4V I:0.0964A P:20.30W PF:0.9550 Lamp Flux:2834.58x1 lm														
NAME: PAN/595/20W							TYPE: LED							
DIM.: 595*595mm							SUR.: 545*545mm							
MFR.:														

ρ cc	80%			70%			50%			30%			10%			0
ρ w	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρ fc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Wall Exitance Coefficients(WEC)									
0.0																
1.0	.315	.179	.057	.307	.175	.056	.293	.168	.054	.276	.161	.052	.267	.155	.050	
2.0	.295	.161	.050	.288	.158	.049	.275	.153	.047	.263	.147	.046	.252	.142	.045	
3.0	.272	.145	.043	.265	.142	.043	.254	.138	.042	.243	.133	.041	.233	.129	.040	
4.0	.250	.130	.038	.245	.128	.038	.234	.124	.037	.225	.121	.036	.216	.117	.036	
5.0	.231	.118	.034	.226	.116	.034	.217	.113	.033	.208	.110	.033	.200	.107	.032	
6.0	.214	.107	.031	.210	.106	.030	.201	.103	.030	.194	.101	.030	.186	.098	.029	
7.0	.199	.098	.028	.195	.097	.028	.188	.095	.027	.181	.093	.027	.174	.091	.027	
8.0	.186	.091	.026	.182	.090	.025	.176	.088	.025	.169	.086	.025	.163	.084	.024	
9.0	.174	.084	.023	.171	.083	.023	.164	.081	.023	.159	.080	.023	.154	.078	.023	
10.0	.164	.078	.022	.161	.078	.022	.155	.076	.021	.150	.075	.021	.145	.073	.021	

ρ cc	80%			70%			50%			30%			10%			0
ρ w	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρ fc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Ceiling Cavity Exitance Coefficients(CCEC)									
0.0	.209	.209	.209	.179	.179	.179	.122	.122	.122	.070	.070	.070	.022	.022	.022	
1.0	.199	.175	.153	.171	.150	.131	.117	.103	.091	.067	.060	.053	.022	.019	.017	
2.0	.191	.151	.117	.164	.130	.101	.112	.090	.070	.065	.052	.041	.021	.017	.013	
3.0	.184	.133	.093	.158	.115	.081	.108	.080	.057	.062	.047	.033	.020	.015	.011	
4.0	.176	.120	.077	.151	.104	.067	.104	.072	.047	.060	.042	.028	.019	.014	.009	
5.0	.169	.110	.066	.145	.095	.058	.100	.066	.041	.058	.039	.024	.019	.013	.008	
6.0	.161	.101	.058	.139	.088	.051	.096	.061	.036	.056	.036	.021	.018	.012	.007	
7.0	.155	.095	.052	.133	.082	.046	.092	.057	.032	.053	.034	.019	.017	.011	.006	
8.0	.148	.089	.048	.128	.077	.042	.088	.054	.030	.051	.032	.018	.017	.010	.006	
9.0	.142	.084	.044	.122	.073	.039	.085	.051	.028	.049	.030	.016	.016	.010	.005	
10.0	.136	.080	.042	.118	.069	.036	.082	.049	.026	.048	.029	.015	.015	.009	.005	

Uncorrected UGR Table

Test: U:220.4V I:0.0964A P:20.30W PF:0.9550 Lamp Flux:2834.58x1 lm		
NAME: PAN/595/20W	TYPE: LED	
DIM.: 595*595mm	SUR.: 545*545mm	
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	16.5	18.0	16.8	18.2	18.5	16.5	18.0	16.8	18.3	18.5
3H	18.0	19.4	18.4	19.7	20.0	18.1	19.5	18.4	19.8	20.1
4H	18.7	20.0	19.0	20.3	20.6	18.8	20.1	19.1	20.4	20.7
6H	19.1	20.4	19.5	20.7	21.0	19.3	20.5	19.7	20.8	21.2
8H	19.3	20.5	19.7	20.8	21.1	19.5	20.7	19.9	21.0	21.3
12H	19.4	20.5	19.8	20.9	21.2	19.6	20.8	20.0	21.1	21.5
4H 2H	17.1	18.4	17.5	18.7	19.0	17.2	18.5	17.5	18.8	19.1
3H	18.9	20.0	19.3	20.4	20.7	18.9	20.1	19.3	20.4	20.8
4H	19.6	20.7	20.0	21.0	21.4	19.7	20.8	20.1	21.1	21.5
6H	20.2	21.2	20.7	21.6	22.0	20.4	21.3	20.8	21.7	22.1
8H	20.4	21.3	20.9	21.7	22.2	20.6	21.5	21.1	21.9	22.3
12H	20.6	21.4	21.1	21.8	22.3	20.8	21.6	21.3	22.0	22.5
8H 4H	19.9	20.8	20.4	21.2	21.7	20.0	20.9	20.5	21.3	21.7
6H	20.7	21.4	21.2	21.9	22.4	20.8	21.6	21.3	22.0	22.5
8H	21.0	21.7	21.5	22.1	22.6	21.2	21.8	21.7	22.3	22.8
12H	21.3	21.8	21.8	22.3	22.8	21.5	22.0	22.0	22.5	23.0
12H 4H	20.0	20.8	20.4	21.2	21.6	20.0	20.8	20.5	21.3	21.7
6H	20.8	21.4	21.3	21.9	22.4	20.9	21.5	21.4	22.0	22.5
8H	21.2	21.7	21.7	22.2	22.7	21.3	21.9	21.8	22.3	22.9
Variations with the observer position at spacings:										
S = 1.0H	+ 0.1 / - 0.2					+ 0.1 / - 0.2				
1.5H	+ 0.2 / - 0.3					+ 0.2 / - 0.3				
2.0H	+ 0.1 / - 0.3					+ 0.1 / - 0.3				

CIE Pub.117 Corrected 2835 lm Total Lamp Luminous Flux.(8log(F/F0) = 3.6)

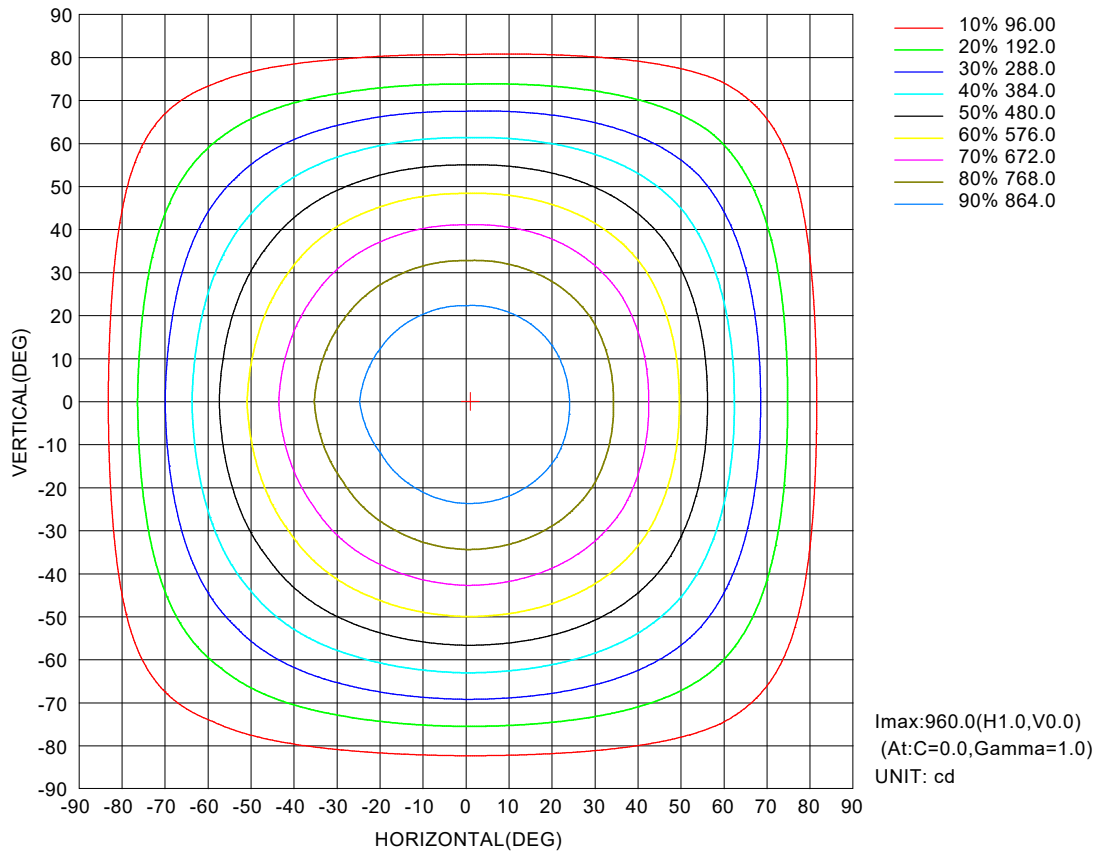
Utilisation Factors Table

Test: U:220.4V I:0.0964A P:20.30W PF:0.9550 Lamp Flux:2834.58x1 lm		
NAME: PAN/595/20W	TYPE: LED	
DIM.: 595*595mm	SUR.: 545*545mm	
MFR.:		

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 = 0.6	56	45	38	56	45	38	54	44	37	31
0.80	66	55	47	65	54	47	63	53	47	40
1.00	75	64	56	73	63	56	71	64	55	48
1.25	82	71	64	80	70	63	77	69	63	55
1.50	87	77	70	85	76	69	82	74	68	60
2.00	94	85	78	92	84	78	88	81	76	67
2.50	98	90	84	96	88	83	91	85	80	72
3.00	101	94	89	99	92	87	94	89	85	76
4.00	105	100	95	103	97	93	98	94	90	80
5.00	108	103	99	105	101	97	100	97	93	83
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004			Suspended				SHRNOM = 1.25			

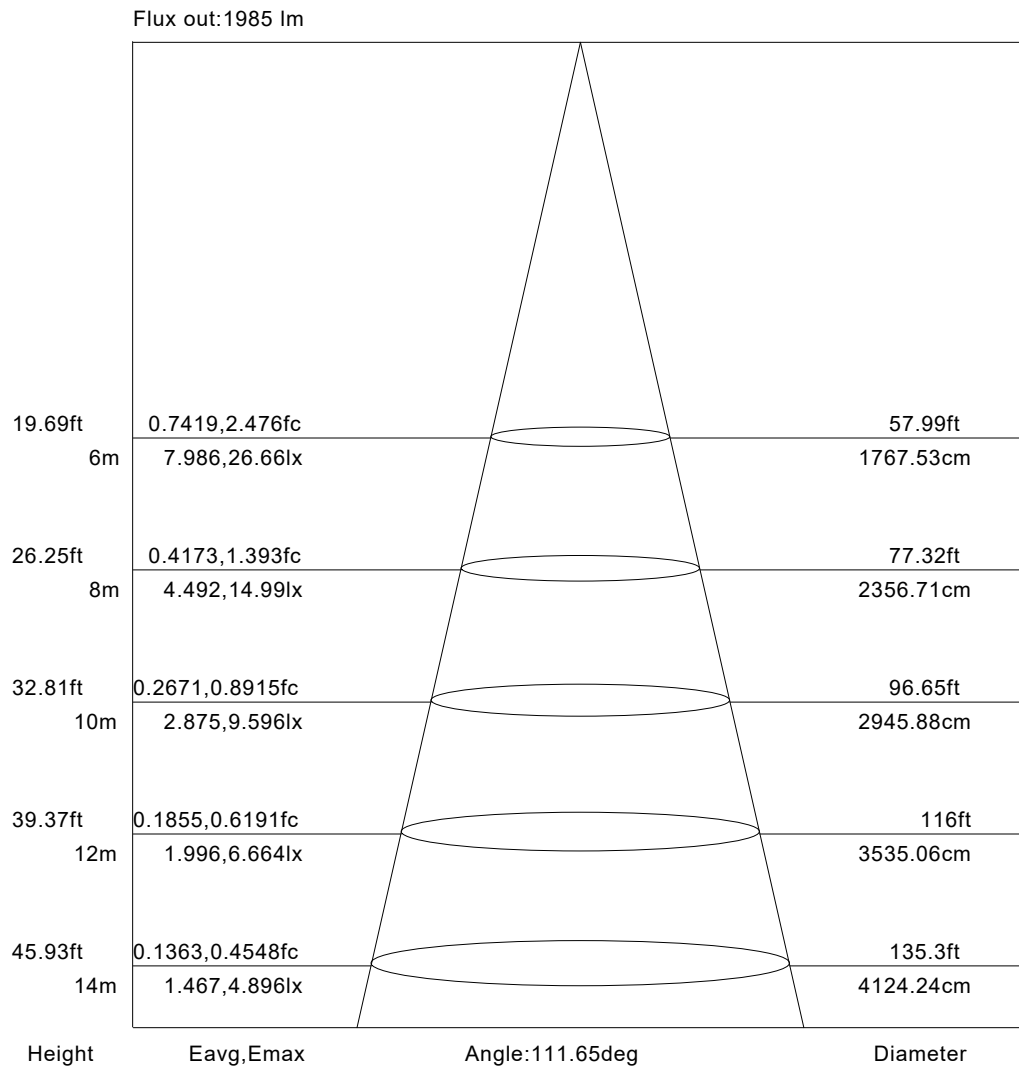
Isocandela Diagram

Test: U:220.4V I:0.0964A P:20.30W PF:0.9550 Lamp Flux:2834.58x1 lm		
NAME: PAN/595/20W	TYPE: LED	
DIM.: 595*595mm	SUR.: 545*545mm	
MFR.:		



AAI Figure

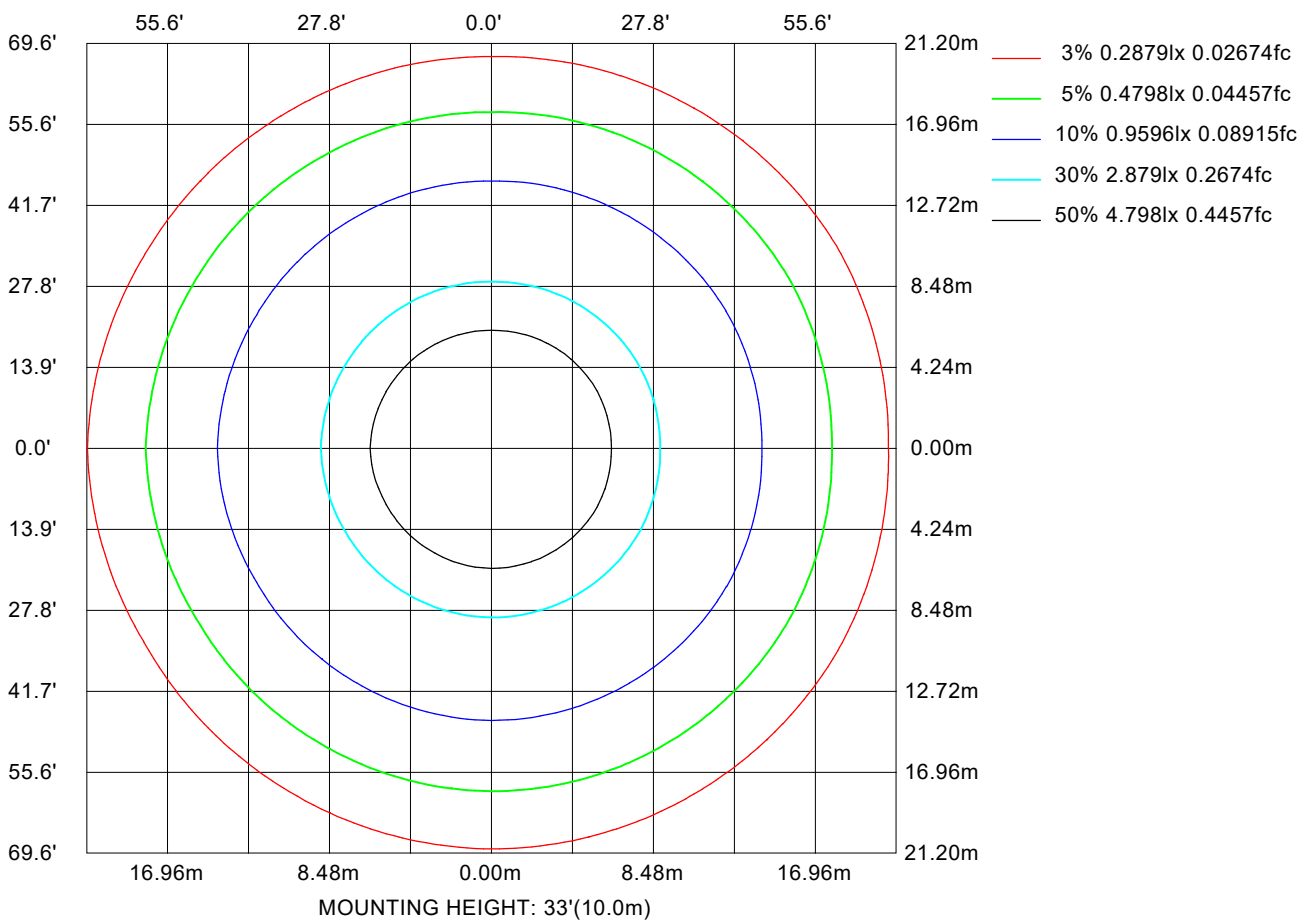
Test: U:220.4V I:0.0964A P:20.30W PF:0.9550 Lamp Flux:2834.58x1 lm		
NAME: PAN/595/20W	TYPE: LED	
DIM.: 595*595mm	SUR.: 545*545mm	
MFR.:		



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

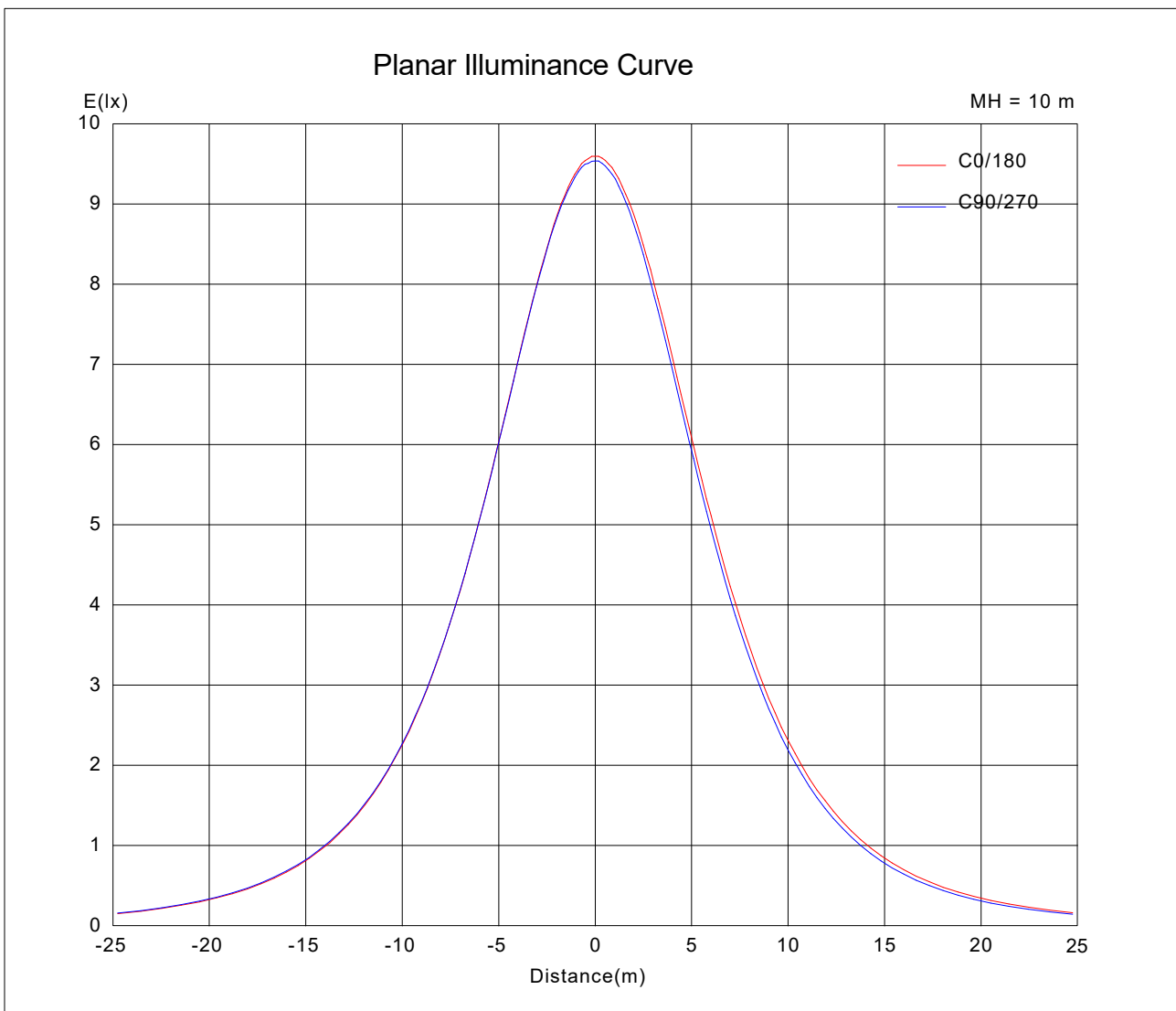
Isolux Diagram

Test: U:220.4V I:0.0964A P:20.30W PF:0.9550 Lamp Flux:2834.58x1 lm		
NAME: PAN/595/20W	TYPE: LED	
DIM.: 595*595mm	SUR.: 545*545mm	
MFR.:		



Planar Illuminance Curve

Test: U:220.4V I:0.0964A P:20.30W PF:0.9550 Lamp Flux:2834.58x1 lm		
NAME: PAN/595/20W	TYPE: LED	
DIM.: 595*595mm	SUR.: 545*545mm	
MFR.:		



Luminous Distribution Intensity Data

Test: U:220.4V I:0.0964A P:20.30W PF:0.9550 Lamp Flux:2834.58x1 lm		
NAME: PAN/595/20W	TYPE: LED	
DIM.: 595*595mm	SUR.: 545*545mm	
MFR.:		

Table--1

UNIT: cd

C(DEG) \ y(DEG)	0	30	60	90	120	150	180	210	240	270	300	330							
0	960	957	955	954	953	953	960	957	955	954	953	953							
5	955	955	952	951	950	948	957	952	949	948	949	949							
10	943	943	942	940	937	935	945	939	936	934	936	938							
15	921	924	921	919	915	914	925	916	913	911	914	917							
20	893	895	893	890	887	886	898	887	882	880	886	890							
25	856	861	857	855	850	848	862	850	844	841	849	855							
30	812	818	814	812	806	805	820	807	798	796	804	812							
35	760	768	764	762	755	755	771	755	747	743	752	762							
40	703	711	708	705	698	698	714	697	688	686	695	705							
45	639	648	646	643	635	635	655	635	626	621	633	643							
50	570	581	578	576	568	568	588	567	558	552	565	576							
55	497	509	507	505	498	497	516	495	484	479	491	504							
60	421	433	431	430	423	422	441	420	408	403	416	428							
65	343	356	354	353	347	345	365	343	330	326	339	352							
70	265	278	277	276	271	269	288	266	253	249	261	275							
75	189	201	200	200	195	195	212	190	178	173	186	198							
80	116	129	126	129	123	124	140	118	108	104	115	125							
85	51.8	62.1	62.7	63.7	60.2	58.7	73.0	54.8	46.5	42.7	51.0	59.5							
90	5.64	7.40	10.0	10.9	7.69	5.75	14.6	7.86	7.68	7.61	7.58	7.88							
95	6.17	5.91	5.72	5.69	5.81	5.96	8.26	8.42	8.34	8.16	8.20	8.28							
100	7.03	6.72	6.58	6.56	6.67	6.80	8.91	9.16	9.06	8.93	8.90	9.00							
105	7.92	7.58	7.45	7.45	7.54	7.65	9.69	9.90	9.81	9.70	9.64	9.70							
110	8.77	8.43	8.30	8.30	8.38	8.53	10.5	10.6	10.5	10.4	10.3	10.4							
115	9.58	9.25	9.14	9.16	9.21	9.34	11.2	11.3	11.3	11.2	11.1	11.1							
120	10.4	10.1	9.94	9.97	10.0	10.1	11.9	12.0	12.0	11.9	11.8	11.8							
125	11.1	10.8	10.7	10.7	10.7	10.9	12.6	12.7	12.7	12.6	12.4	12.5							
130	11.8	11.5	11.4	11.4	11.4	11.5	13.2	13.2	13.2	13.1	13.0	13.0							
135	12.3	12.1	12.0	12.0	12.0	12.1	13.6	13.7	13.6	13.5	13.4	13.4							
140	12.7	12.6	12.5	12.5	12.5	12.6	14.0	14.0	14.0	13.9	13.8	13.8							
145	13.1	13.1	13.0	12.9	13.0	13.0	14.3	14.4	14.4	14.2	14.2	14.2							
150	13.7	13.6	13.5	13.5	13.5	13.6	14.7	14.7	14.8	14.7	14.5	14.6							
155	14.3	14.3	14.2	14.2	14.2	14.3	15.2	15.2	15.2	15.1	15.0	15.1							
160	15.0	15.0	15.0	14.9	15.0	15.1	15.7	15.7	15.8	15.7	15.5	15.6							
165	15.8	15.8	15.8	15.8	15.7	15.8	16.3	16.3	16.3	16.2	16.1	16.1							
170	16.4	16.3	16.4	16.3	16.3	16.4	16.7	16.8	16.6	16.6	16.6	16.5							
175	16.7	16.8	16.8	16.6	16.7	16.8	16.9	16.9	16.8	16.7	16.8	16.7							
180	16.8	16.9	16.8	16.6	16.8	16.7	16.8	16.9	16.8	16.6	16.8	16.7							