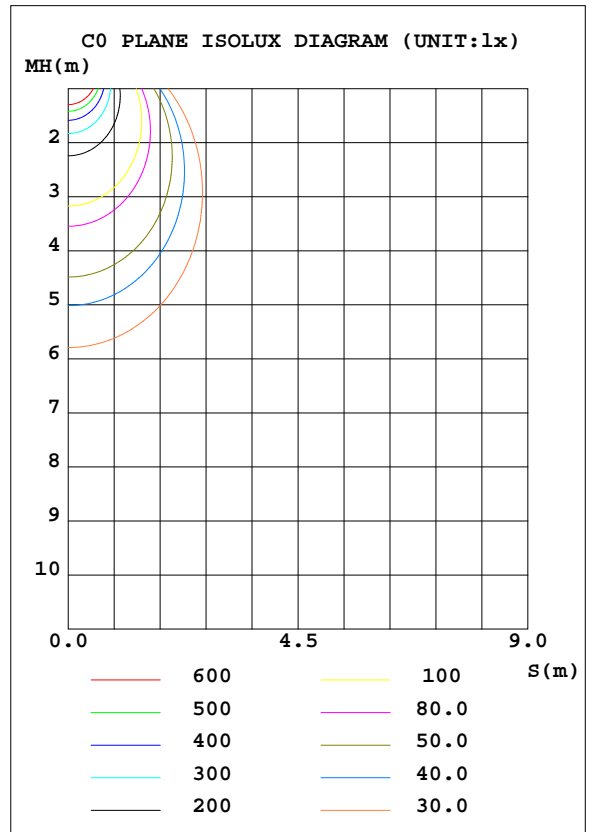
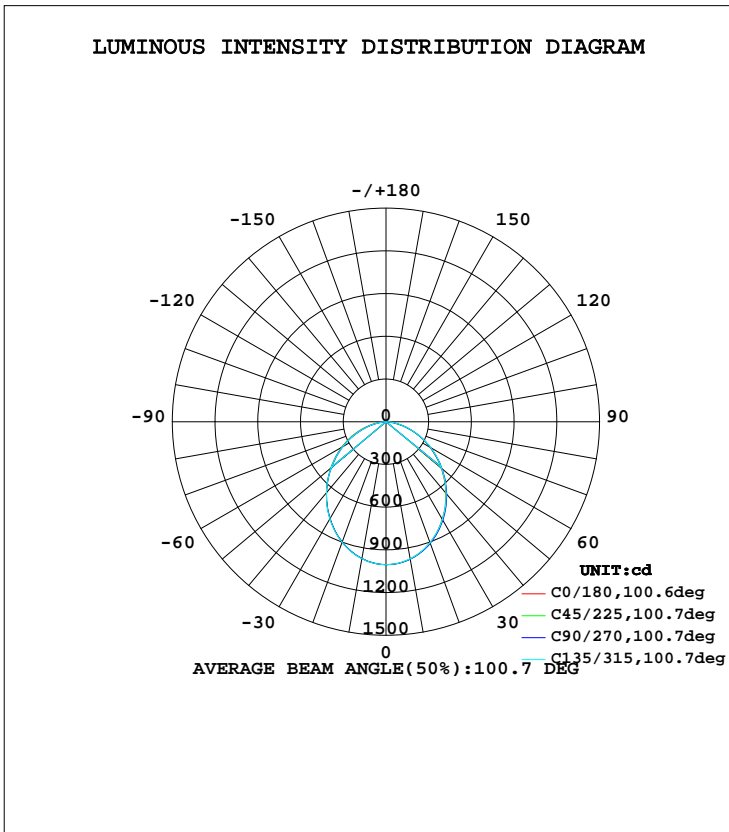


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:240.1V I:0.0900A P:21.50W PF:0.9890 Lamp Flux:2527.52x1 lm		
NAME: CP20W-CC	TYPE:20W	WEIGHT:
DIM.:	SPEC.:4000K	SERIAL No.:1
MFR.:	SUR.:0.0865	PROTECTION ANGLE:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 117.56 lm/W			
MODEL	CP20W-CC	I <sub>max</sub> (cd)	1004	S/MH(C0/180)	1.17
NOMINAL POWER(W)	20	LOR(%)	100.0	S/MH(C90/270)	1.17
RATED VOLTAGE(V)	240	TOTAL FLUX(lm)	2527.5	η UP, DN(C0-180)	0.7, 49.1
NOMINAL FLUX(lm)	2527.52	CIE CLASS	DIRECT	η UP, DN(C180-360)	0.6, 49.7
LAMPS INSIDE	1	η up(%)	1.2	CIBSE SHR NOM	1.25
TEST VOLTAGE(V)	240.1	η down(%)	98.8	CIBSE SHR MAX	1.35



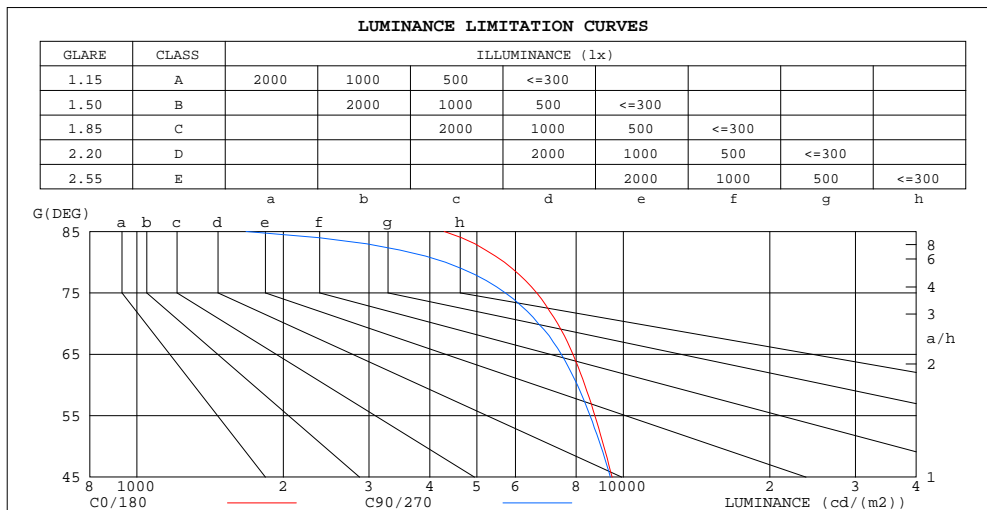
C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:DAMIN  
 Test Date:2021-08-06

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.276  
 Humidity:65.0%  
 Test Distance:10.237m [K=1.0000]  
 Remarks:

ZONAL FLUX DIAGRAM  
AND LUMINANCE LIMITATION CURVES

ZONAL FLUX DIAGRAM:

$\gamma$	C0	C45	C90	C135	C180	C225	C270	C315	$\gamma$	$\Phi$ zone	$\Phi$ total	$\Phi$ lum,lamp
10	976.2	975.5	975.2	976.4	978.0	978.2	980.6	978.2	0- 10	94.54	94.54	3.74,3.74
20	899.6	899.5	899.3	901.4	903.8	905.1	908.5	904.2	10- 20	266.4	360.9	14.3,14.3
30	786.0	786.8	786.8	788.1	790.8	793.1	798.5	792.6	20- 30	391.4	752.3	29.8,29.8
40	650.6	651.6	650.0	651.5	654.5	657.2	663.5	657.9	30- 40	453.0	1205	47.7,47.7
50	505.6	505.6	500.5	502.6	506.6	509.1	514.1	511.5	40- 50	448.5	1654	65.4,65.4
60	359.4	355.5	348.2	350.2	355.5	357.1	360.0	361.9	50- 60	385.8	2040	80.7,80.7
70	216.3	209.3	198.1	202.7	210.0	208.2	209.8	214.3	60- 70	278.8	2318	91.7,91.7
80	85.35	76.90	64.74	71.24	78.57	75.24	73.93	80.63	70- 80	147.7	2466	97.6,97.6
90	1.491	1.084	1.000	1.047	0.9353	0.9211	0.8878	0.9446	80- 90	30.08	2496	98.8,98.8
100	2.082	2.098	2.097	2.157	1.861	1.754	1.718	1.696	90-100	1.717	2498	98.8,98.8
110	3.510	3.510	3.514	3.540	3.165	2.999	2.994	2.978	100-110	2.732	2501	98.9,98.9
120	5.025	4.982	5.045	4.978	4.357	4.340	4.276	4.277	110-120	3.941	2505	99.1,99.1
130	6.540	6.384	6.426	6.357	5.719	5.583	5.606	5.573	120-130	4.796	2509	99.3,99.3
140	7.582	7.786	7.411	7.759	7.022	6.893	6.956	6.841	130-140	5.132	2515	99.5,99.5
150	9.081	9.065	9.296	9.050	8.217	7.979	8.161	8.041	140-150	4.973	2520	99.7,99.7
160	10.24	10.11	10.44	9.993	9.062	8.853	9.032	8.893	150-160	4.224	2524	99.9,99.9
170	10.23	10.65	10.32	10.49	9.862	9.837	9.918	9.900	160-170	2.795	2527	100,100
180	10.76	10.80	10.68	10.73	10.77	10.78	10.69	10.68	170-180	0.9899	2528	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		



LUMINANCE cd/(m2)		
G(DEG)	C0/180	C90/270
85	4284	1677
80	5697	4306
75	6638	5724
70	7329	6688
65	7878	7455
60	8331	8044
55	8739	8544
50	9117	8992
45	9486	9406

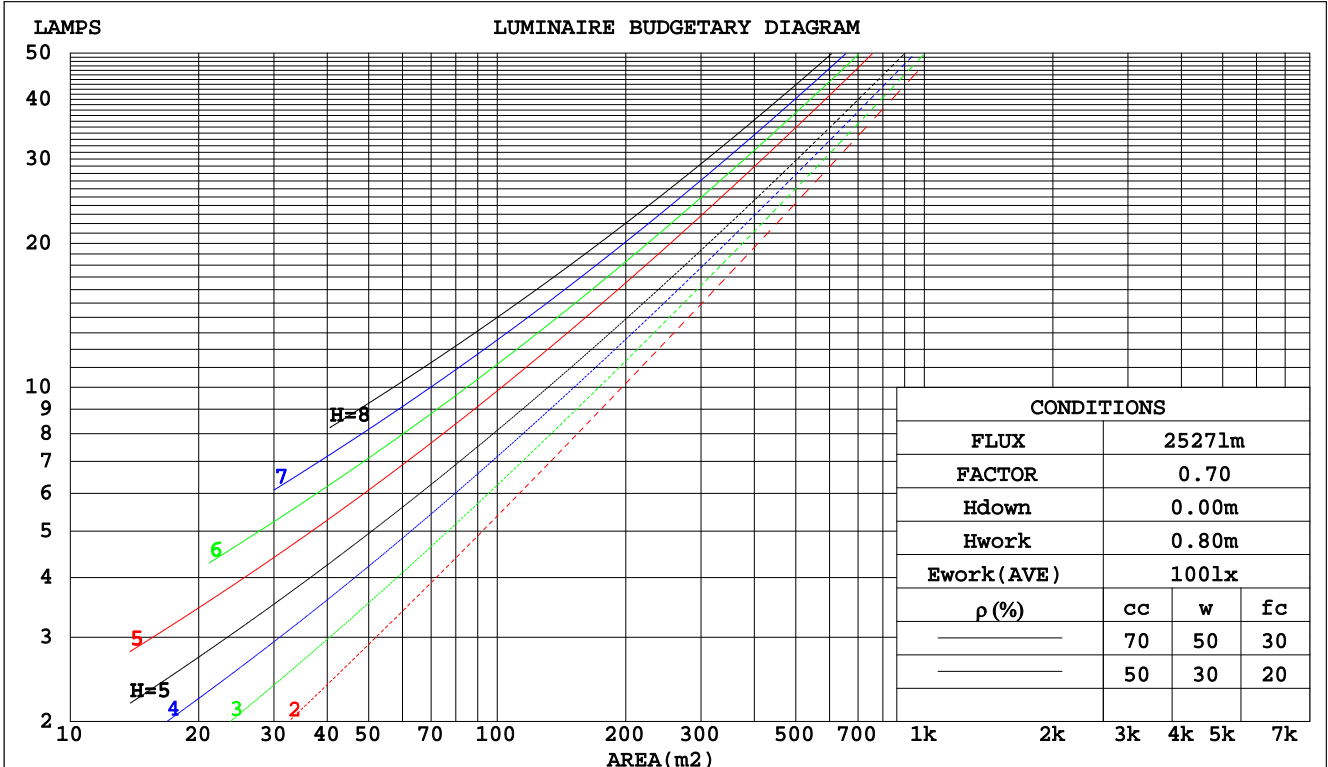
C Range: 0 - 360DEG  
C Interval: 45.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:DAMIN  
Test Date:2021-08-06

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 1.0DEG  
Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.276  
Humidity:65.0%  
Test Distance:10.237m [K=1.0000]  
Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:240.1V I:0.0900A P:21.50W PF:0.9890 Lamp Flux:2527.52x1 lm		
NAME: CP20W-CC	TYPE:20W	WEIGHT:
DIM.:	SPEC.:4000K	SERIAL No.:1
MFR.:	SUR.:0.0865	PROTECTION ANGLE:

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	1.10	1.10	1.10	1.05	1.05	1.05	1.01	1.01	1.01	.99
1.0	1.05	1.00	.97	1.02	.98	.95	.98	.95	.92	.94	.91	.89	.90	.88	.86	.84
2.0	.92	.85	.80	.90	.84	.79	.86	.81	.77	.82	.78	.75	.79	.76	.73	.71
3.0	.81	.73	.67	.79	.72	.66	.76	.70	.65	.73	.68	.63	.70	.66	.62	.60
4.0	.72	.63	.57	.70	.63	.56	.68	.61	.55	.65	.59	.55	.63	.58	.54	.52
5.0	.64	.56	.49	.63	.55	.49	.61	.54	.48	.59	.53	.48	.57	.51	.47	.45
6.0	.58	.49	.43	.57	.49	.43	.55	.48	.42	.53	.47	.42	.52	.46	.42	.39
7.0	.53	.44	.38	.52	.44	.38	.50	.43	.38	.49	.42	.37	.47	.42	.37	.35
8.0	.48	.40	.34	.48	.40	.34	.46	.39	.34	.45	.38	.34	.44	.38	.33	.31
9.0	.44	.36	.31	.44	.36	.31	.43	.36	.31	.41	.35	.30	.40	.34	.30	.28
10.0	.41	.33	.28	.41	.33	.28	.39	.33	.28	.38	.32	.28	.37	.32	.27	.26



C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:DAMIN  
 Test Date:2021-08-06

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.276  
 Humidity:65.0%  
 Test Distance:10.237m [K=1.0000]  
 Remarks:

WEC AND CCEC

Test:U:240.1V I:0.0900A P:21.50W PF:0.9890 Lamp Flux:2527.52x1 lm		
NAME: CP20W-CC	TYPE:20W	WEIGHT:
DIM.:	SPEC.:4000K	SERIAL No.:1
MFR.:	SUR.:0.0865	PROTECTION ANGLE:

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	.291	.166	.053	.284	.162	.051	.270	.155	.050	.257	.148	.048	.246	.142	.046	
2.0	.277	.152	.047	.271	.149	.046	.259	.144	.045	.247	.139	.043	.237	.134	.042	
3.0	.259	.138	.041	.253	.135	.041	.242	.131	.040	.232	.127	.039	.223	.123	.038	
4.0	.240	.125	.037	.235	.123	.036	.225	.119	.036	.216	.116	.035	.208	.113	.034	
5.0	.223	.113	.033	.218	.112	.033	.210	.109	.032	.202	.106	.032	.194	.104	.031	
6.0	.207	.104	.030	.203	.103	.030	.196	.100	.029	.188	.098	.029	.182	.096	.028	
7.0	.193	.096	.027	.190	.095	.027	.183	.092	.027	.176	.090	.026	.170	.089	.026	
8.0	.181	.088	.025	.178	.088	.025	.172	.086	.024	.166	.084	.024	.160	.082	.024	
9.0	.170	.082	.023	.167	.081	.023	.161	.080	.023	.156	.078	.022	.151	.077	.022	
10.0	.160	.077	.021	.157	.076	.021	.152	.075	.021	.148	.073	.021	.143	.072	.021	

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	.200	.200	.200	.171	.171	.171	.117	.117	.117	.067	.067	.067	.021	.021	.021	
1.0	.189	.166	.145	.161	.142	.125	.110	.098	.087	.064	.057	.050	.020	.018	.016	
2.0	.180	.142	.109	.154	.122	.094	.106	.084	.066	.061	.049	.039	.020	.016	.013	
3.0	.172	.124	.086	.147	.107	.074	.101	.074	.052	.058	.043	.031	.019	.014	.010	
4.0	.164	.110	.069	.141	.095	.060	.097	.067	.042	.056	.039	.025	.018	.013	.008	
5.0	.157	.100	.058	.135	.087	.050	.093	.060	.036	.054	.035	.021	.017	.012	.007	
6.0	.150	.092	.050	.129	.079	.043	.089	.056	.031	.052	.033	.018	.017	.011	.006	
7.0	.143	.085	.044	.123	.073	.038	.085	.051	.027	.049	.030	.016	.016	.010	.005	
8.0	.137	.079	.039	.118	.068	.034	.081	.048	.024	.047	.028	.014	.015	.009	.005	
9.0	.131	.074	.035	.113	.064	.031	.078	.045	.022	.045	.027	.013	.015	.009	.004	
10.0	.125	.070	.033	.108	.060	.028	.075	.043	.020	.044	.025	.012	.014	.008	.004	

C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:DAMIN  
 Test Date:2021-08-06

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.276  
 Humidity:65.0%  
 Test Distance:10.237m [K=1.0000]  
 Remarks:

Uncorrected UGR Table

Test:U:240.1V I:0.0900A P:21.50W PF:0.9890 Lamp Flux:2527.52x1 lm										
NAME: CP20W-CC					TYPE:20W			WEIGHT:		
DIM.:					SPEC.:4000K			SERIAL No.:1		
MFR.:					SUR.:0.0865			PROTECTION ANGLE:		
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	20.5	21.9	22.1	20.1	21.5	20.4	21.8	22.0
3H	21.6	22.9	21.9	23.2	23.4	21.4	22.7	21.7	23.0	23.2
4H	22.1	23.4	22.4	23.6	23.9	21.8	23.1	22.1	23.4	23.6
6H	22.5	23.7	22.8	23.9	24.2	22.0	23.2	22.4	23.5	23.8
8H	22.6	23.7	22.9	24.0	24.3	22.1	23.2	22.4	23.5	23.9
12H	22.6	23.7	23.0	24.0	24.3	22.1	23.2	22.4	23.5	23.8
4H 2H	20.7	22.0	21.1	22.3	22.6	20.7	21.9	21.0	22.2	22.5
3H	22.3	23.4	22.7	23.7	24.0	22.1	23.2	22.5	23.5	23.9
4H	22.9	23.9	23.3	24.3	24.6	22.7	23.7	23.1	24.0	24.4
6H	23.4	24.3	23.8	24.7	25.1	23.0	23.9	23.4	24.3	24.7
8H	23.5	24.4	24.0	24.8	25.2	23.1	23.9	23.5	24.3	24.7
12H	23.6	24.4	24.1	24.8	25.2	23.1	23.8	23.5	24.2	24.7
8H 4H	23.1	24.0	23.6	24.3	24.8	22.9	23.7	23.3	24.1	24.5
6H	23.7	24.4	24.2	24.8	25.3	23.3	24.0	23.8	24.5	24.9
8H	23.9	24.5	24.4	25.0	25.4	23.4	24.1	23.9	24.5	25.0
12H	24.0	24.6	24.5	25.0	25.5	23.5	24.0	24.0	24.5	25.0
12H 4H	23.1	23.9	23.6	24.3	24.7	22.9	23.6	23.3	24.1	24.5
6H	23.7	24.3	24.2	24.8	25.3	23.4	24.0	23.8	24.4	24.9
8H	24.0	24.5	24.5	25.0	25.5	23.5	24.0	24.0	24.5	25.0
Variations with the observer position at spacings:										
S = 1.0H	+ 0.2 / - 0.2					+ 0.2 / - 0.3				
1.5H	+ 0.2 / - 0.3					+ 0.2 / - 0.3				
2.0H	+ 0.3 / - 0.3					+ 0.3 / - 0.3				

CIE Pub.117 Corrected 2528 lm Total Lamp Luminous Flux.(8log(F/F0) = 3.2)

C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:DAMIN  
 Test Date:2021-08-06

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.276  
 Humidity:65.0%  
 Test Distance:10.237m [K=1.0000]  
 Remarks:

UTILIZATION FACTORS TABLE

Test:U:240.1V I:0.0900A P:21.50W PF:0.9890 Lamp Flux:2527.52x1 lm		
NAME: CP20W-CC	TYPE:20W	WEIGHT:
DIM.:	SPEC.:4000K	SERIAL No.:1
MFR.:	SUR.:0.0865	PROTECTION ANGLE:

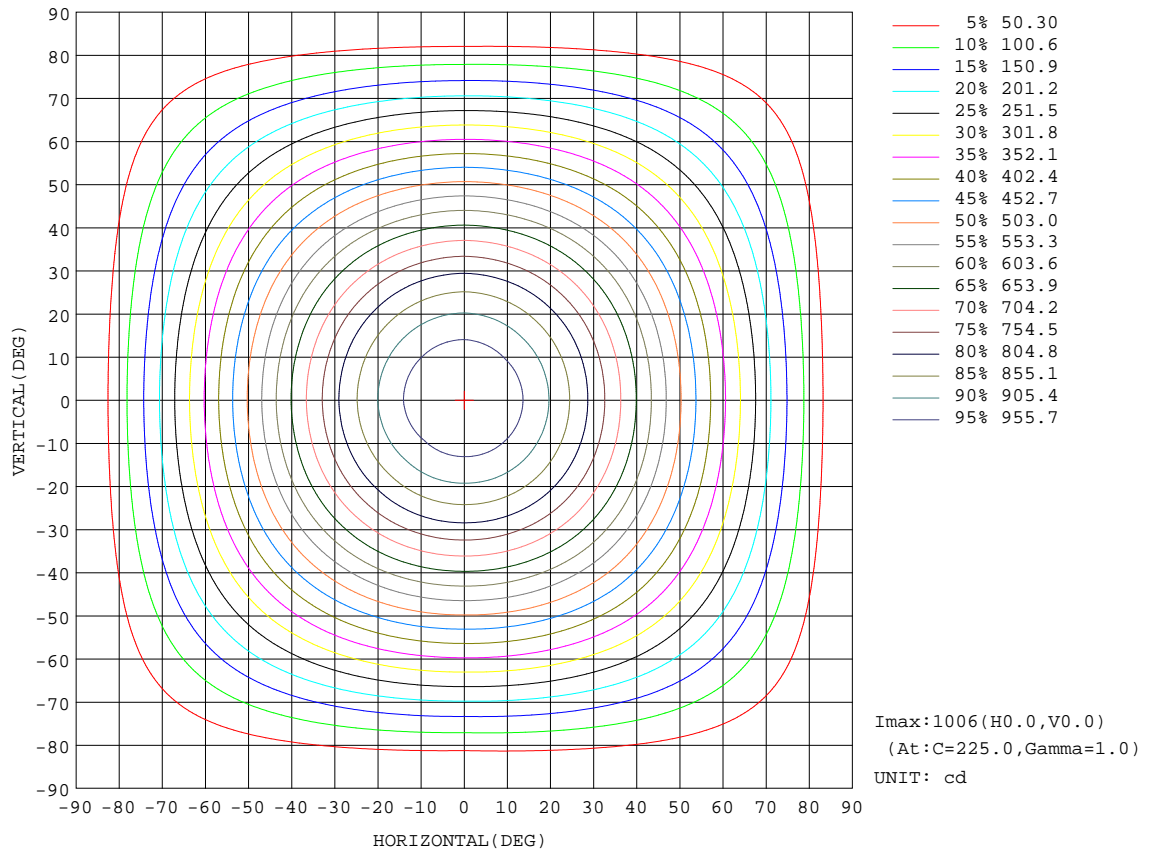
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	59	48	41	58	48	41	57	47	41	35
0.80	69	58	51	68	58	51	66	57	50	44
1.00	78	67	60	76	66	60	74	67	59	52
1.25	85	74	68	83	74	67	80	72	66	59
1.50	89	80	73	88	79	73	85	77	72	64
2.00	96	88	82	94	87	81	91	84	79	71
2.50	100	92	87	98	91	86	94	88	84	75
3.00	103	96	91	101	95	90	97	92	88	79
4.00	107	101	97	104	100	96	100	96	93	84
5.00	109	104	101	107	102	99	102	99	96	86
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004			Suspended				SHRNOM = 1.25			

C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:DAMIN  
 Test Date:2021-08-06

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 1.0DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.276  
 Humidity:65.0%  
 Test Distance:10.237m [K=1.0000]  
 Remarks:

**ISOCANDELA DIAGRAM**

Test:U:240.1V I:0.0900A P:21.50W PF:0.9890 Lamp Flux:2527.52x1 lm		
NAME: CP20W-CC	TYPE:20W	WEIGHT:
DIM.:	SPEC.:4000K	SERIAL No.:1
MFR.:	SUR.:0.0865	PROTECTION ANGLE:

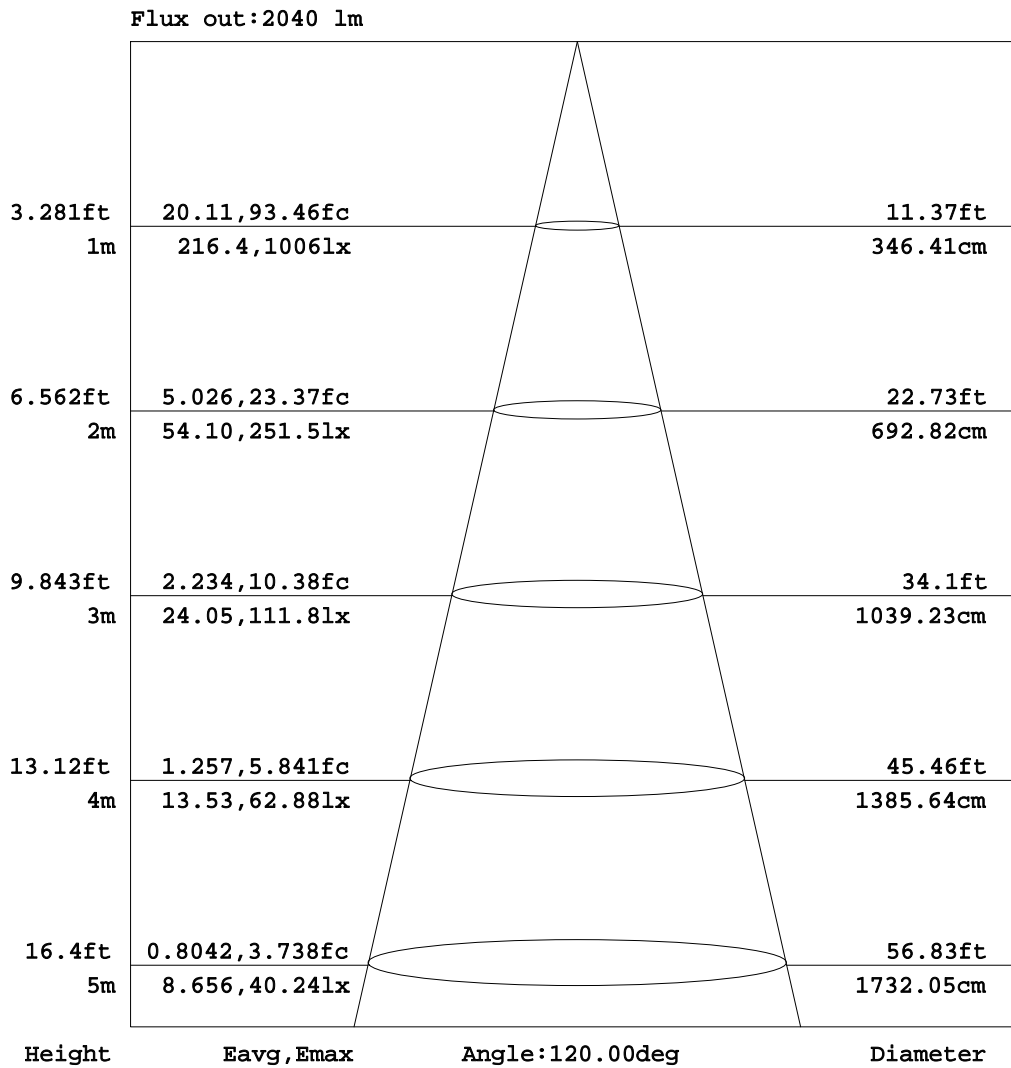


C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:DAMIN  
 Test Date:2021-08-06

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.276  
 Humidity:65.0%  
 Test Distance:10.237m [K=1.0000]  
 Remarks:

AAI Figure

Test:U:240.1V I:0.0900A P:21.50W PF:0.9890 Lamp Flux:2527.52x1 lm		
NAME: CP20W-CC	TYPE:20W	WEIGHT:
DIM.:	SPEC.:4000K	SERIAL No.:1
MFR.:	SUR.:0.0865	PROTECTION ANGLE:



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

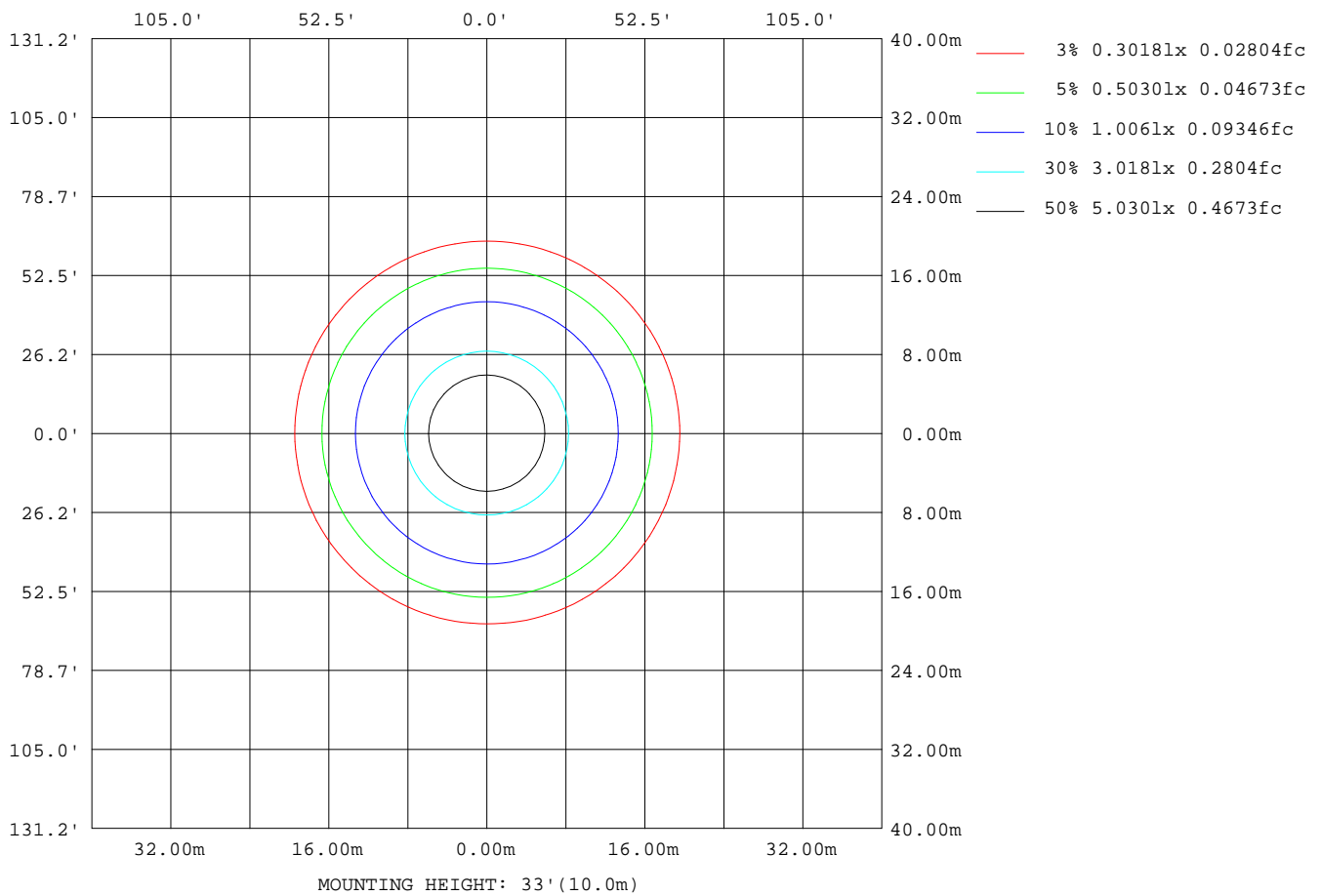
C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:DAMIN  
 Test Date:2021-08-06

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.276  
 Humidity:65.0%  
 Test Distance:10.237m [K=1.0000]  
 Remarks:



**ISOLUX DIAGRAM**

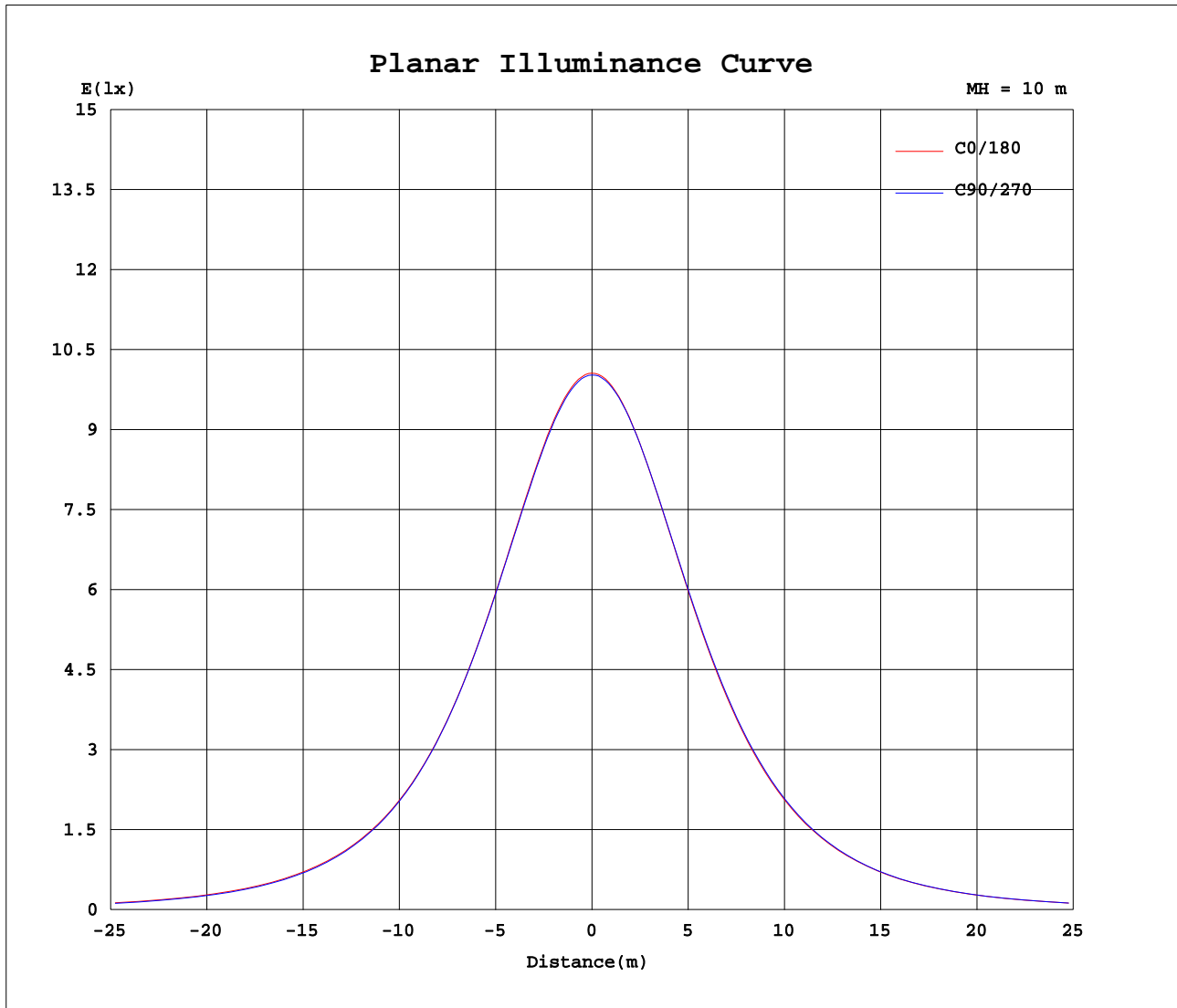
Test:U:240.1V I:0.0900A P:21.50W PF:0.9890 Lamp Flux:2527.52x1 lm		
NAME: CP20W-CC	TYPE:20W	WEIGHT:
DIM.:	SPEC.:4000K	SERIAL No.:1
MFR.:	SUR.:0.0865	PROTECTION ANGLE:



C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:DAMIN  
 Test Date:2021-08-06

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.276  
 Humidity:65.0%  
 Test Distance:10.237m [K=1.0000]  
 Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators: DAMIN  
 Test Date: 2021-08-06

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 1.0DEG  
 Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.0.276  
 Humidity: 65.0%  
 Test Distance: 10.237m [K=1.0000]  
 Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:240.1V I:0.0900A P:21.50W PF:0.9890 Lamp Flux:2527.52x1 lm		
NAME: CP20W-CC	TYPE:20W	WEIGHT:
DIM.:	SPEC.:4000K	SERIAL No.:1
MFR.:	SUR.:0.0865	PROTECTION ANGLE:

Table--1

UNIT: cd

C( DEG) γ (DEG)	0	45	90	135	180	225	270	315											
0	1003	1003	1003	1003	1003	1003	1003	1003											
5	996	996	996	996	997	998	998	997											
10	976	976	975	976	978	978	981	978											
15	944	943	943	945	947	948	950	947											
20	900	899	899	901	904	905	909	904											
25	847	847	847	849	851	853	858	853											
30	786	787	787	788	791	793	799	793											
35	720	722	720	722	725	727	734	727											
40	651	652	650	651	654	657	663	658											
45	579	579	576	578	581	584	590	585											
50	506	506	500	503	507	509	514	512											
55	432	431	424	427	432	433	437	437											
60	359	356	348	350	356	357	360	362											
65	287	282	273	275	282	282	284	288											
70	216	209	198	203	210	208	210	214											
75	148	140	128	133	141	138	139	145											
80	85.3	76.9	64.7	71.2	78.6	75.2	73.9	80.6											
85	32.2	21.9	12.7	18.6	26.9	21.6	19.4	25.0											
90	1.49	1.08	1.00	1.05	0.94	0.92	0.89	0.94											
95	1.49	1.70	2.12	1.57	1.33	1.28	1.72	1.57											
100	2.08	2.10	2.10	2.16	1.86	1.75	1.72	1.70											
105	2.76	2.79	2.76	2.83	2.48	2.36	2.31	2.34											
110	3.51	3.51	3.51	3.54	3.16	3.00	2.99	2.98											
115	4.25	4.25	4.27	4.32	3.86	3.68	3.69	3.64											
120	5.03	4.98	5.05	4.98	4.36	4.34	4.28	4.28											
125	5.81	5.71	5.82	5.68	5.05	4.96	4.90	4.92											
130	6.54	6.38	6.43	6.36	5.72	5.58	5.61	5.57											
135	7.13	7.10	6.74	7.08	6.39	6.20	6.29	6.20											
140	7.58	7.79	7.41	7.76	7.02	6.89	6.96	6.84											
145	8.12	8.46	8.51	8.42	7.64	7.42	7.59	7.43											
150	9.08	9.07	9.30	9.05	8.22	7.98	8.16	8.04											
155	9.67	9.62	9.88	9.55	8.87	8.61	8.89	8.60											
160	10.2	10.1	10.4	9.99	9.06	8.85	9.03	8.89											
165	10.1	10.4	10.8	10.3	9.48	9.33	9.45	9.35											
170	10.2	10.7	10.3	10.5	9.86	9.84	9.92	9.90											
175	10.5	10.9	10.5	10.7	10.2	10.2	10.2	10.2											
180	10.8	10.8	10.7	10.7	10.8	10.8	10.7	10.7											

C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:DAMIN  
 Test Date:2021-08-06

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.276  
 Humidity:65.0%  
 Test Distance:10.237m [K=1.0000]  
 Remarks: