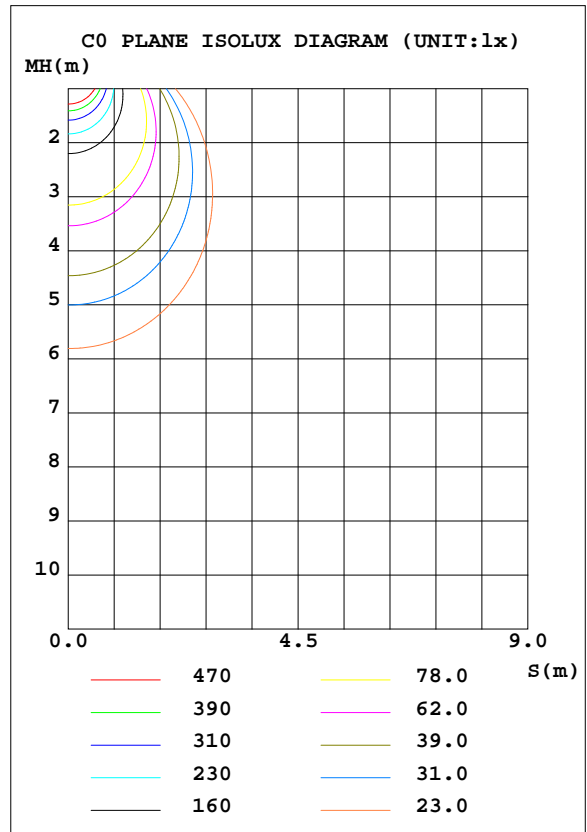
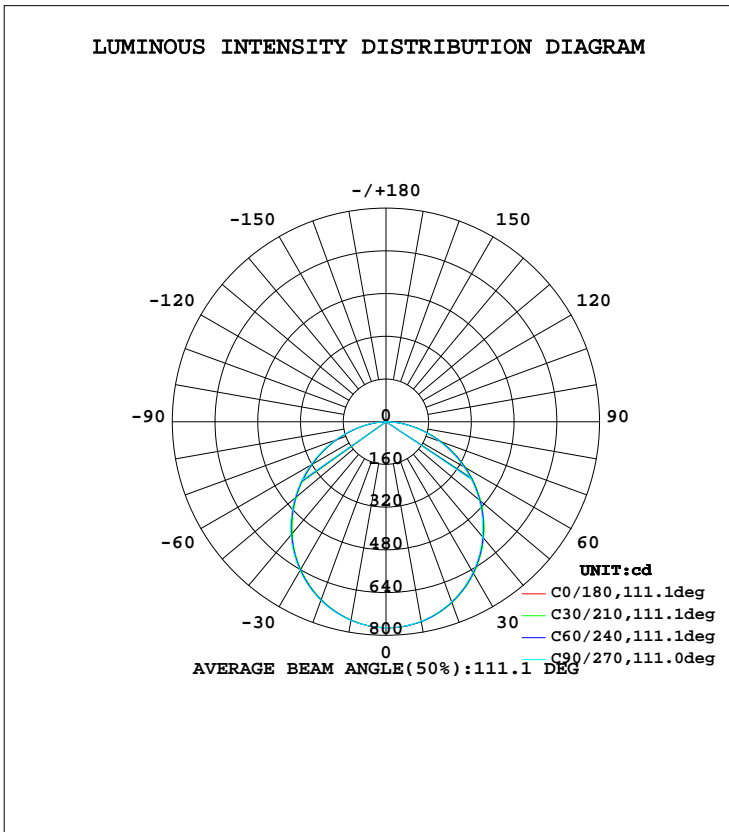


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:240.0V I:0.0850A P:19.50W PF:0.9500 Lamp Flux:2179.69x1 lm		
NAME: CP20W-CW	TYPE:20W	WEIGHT:
DIM.:	SPEC.:6000K	SERIAL No.:1
MFR.:	SUR.:0.085	PROTECTION ANGLE:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 111.78 lm/W			
MODEL	CP20W-CW	Imax(cd)	771.9	S/MH(C0/180)	1.26
NOMINAL POWER(W)	20	LOR(%)	100.0	S/MH(C90/270)	1.25
RATED VOLTAGE(V)	240	TOTAL FLUX(lm)	2179.7	η UP, DN(C0-180)	0.0, 50.6
NOMINAL FLUX(lm)	2179.69	CIE CLASS	DIRECT	η UP, DN(C180-360)	0.0, 49.4
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	1.25
TEST VOLTAGE(V)	240.1	η down(%)	100.0	CIBSE SHR MAX	1.35



C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2019-06-15

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
 Humidity:65.0%
 Test Distance:9.600m [K=1.0000]
 Remarks:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	Φ lum, lamp
10	760.0	759.9	758.3	756.2	754.6	754.7	755.9	758.3	0- 10	72.97	72.97	3.35,3.35
20	720.6	720.2	717.2	713.1	709.6	709.9	712.7	717.0	10- 20	208.7	281.6	12.9,12.9
30	655.2	654.8	650.5	644.8	640.0	640.5	644.4	650.4	20- 30	315.3	596.9	27.4,27.4
40	567.4	566.6	561.4	554.1	548.1	548.9	554.1	561.4	30- 40	378.5	975.4	44.7,44.7
50	461.6	460.5	454.5	446.2	439.5	440.6	446.3	454.7	40- 50	390.1	1366	62.6,62.6
60	343.9	341.8	334.6	326.6	319.1	320.7	327.4	335.7	50- 60	350.3	1716	78.7,78.7
70	220.4	218.0	210.8	203.1	196.1	197.5	203.7	212.4	60- 70	266.6	1983	91,91
80	100.7	98.38	92.12	85.33	79.50	80.61	85.90	93.50	70- 80	155.7	2138	98.1,98.1
90	1.630	1.275	0.2910	0.2792	0.3628	0.3582	0.3282	0.7662	80- 90	41.50	2180	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		

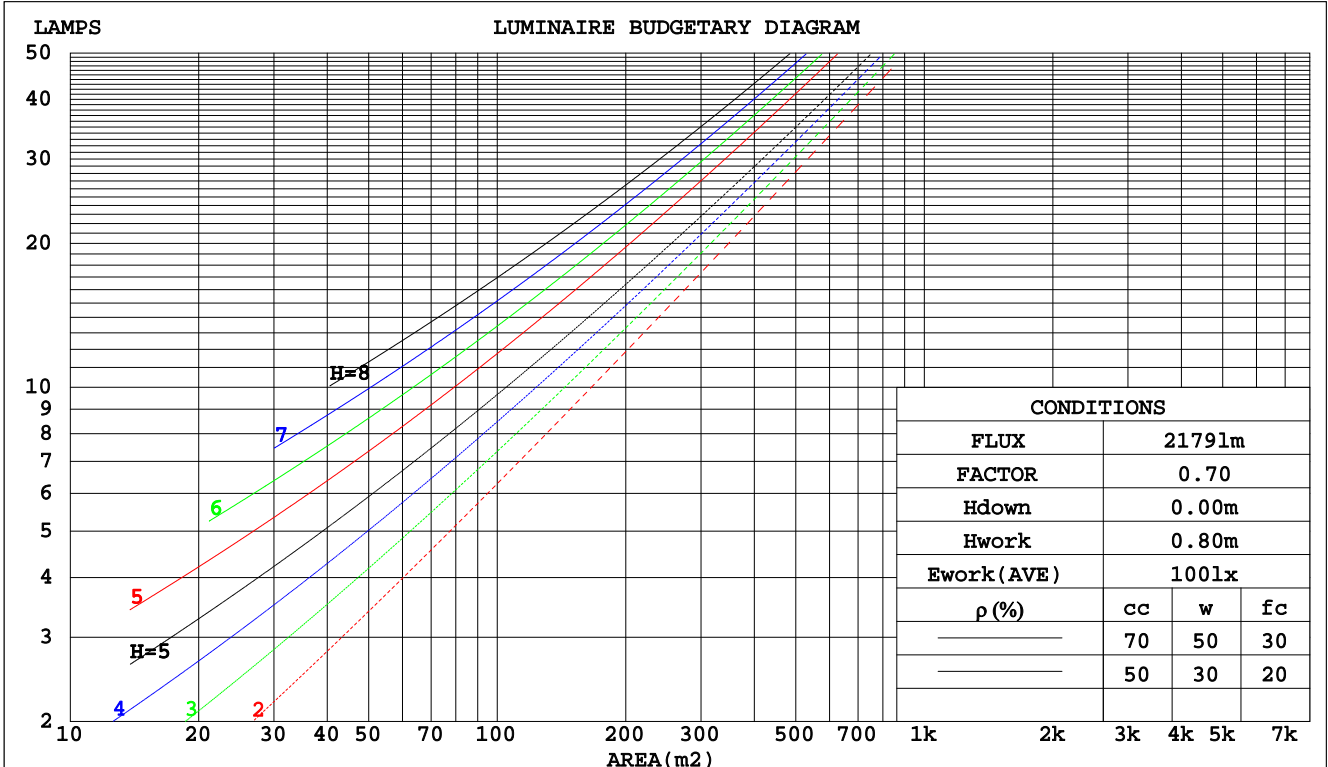
C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2019-06-15

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
 Humidity:65.0%
 Test Distance:9.600m [K=1.0000]
 Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:240.0V I:0.0850A P:19.50W PF:0.9500 Lamp Flux:2179.69x1 lm		
NAME: CP20W-CW	TYPE:20W	WEIGHT:
DIM.:	SPEC.:6000K	SERIAL No.:1
MFR.:	SUR.:0.085	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																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	1.04	.00	.96	1.02	.98	.94	.97	.94	.91	.93	.91	.88	.90	.88	.86	.84
2.0	.90	.84	.78	.89	.82	.77	.85	.80	.75	.82	.77	.73	.79	.75	.72	.69
3.0	.79	.71	.65	.78	.70	.64	.75	.68	.63	.72	.66	.62	.69	.65	.61	.58
4.0	.70	.61	.55	.69	.61	.54	.66	.59	.54	.64	.58	.53	.62	.57	.52	.50
5.0	.63	.54	.47	.62	.53	.47	.59	.52	.46	.58	.51	.46	.56	.50	.45	.43
6.0	.56	.47	.41	.56	.47	.41	.54	.46	.40	.52	.45	.40	.50	.44	.40	.38
7.0	.51	.42	.36	.50	.42	.36	.49	.41	.36	.47	.41	.36	.46	.40	.35	.33
8.0	.47	.38	.32	.46	.38	.32	.45	.37	.32	.43	.37	.32	.42	.36	.32	.30
9.0	.43	.35	.29	.42	.34	.29	.41	.34	.29	.40	.33	.29	.39	.33	.29	.27
10.0	.40	.32	.26	.39	.31	.26	.38	.31	.26	.37	.31	.26	.36	.30	.26	.24



C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2019-06-15

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
Humidity:65.0%
Test Distance:9.600m [K=1.0000]
Remarks:

WEC AND CCEC

Test:U:240.0V I:0.0850A P:19.50W PF:0.9500 Lamp Flux:2179.69x1 lm		
NAME: CP20W-CW	TYPE:20W	WEIGHT:
DIM.:	SPEC.:6000K	SERIAL No.:1
MFR.:	SUR.:0.085	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	.310	.176	.056	.303	.173	.055	.290	.166	.053	.278	.160	.051	.266	.154	.050	
2.0	.292	.160	.049	.286	.157	.048	.274	.152	.047	.263	.148	.046	.253	.143	.045	
3.0	.270	.144	.043	.265	.142	.043	.254	.138	.042	.245	.134	.041	.236	.131	.040	
4.0	.249	.129	.038	.244	.128	.038	.235	.125	.037	.227	.122	.037	.219	.119	.036	
5.0	.230	.117	.034	.226	.116	.034	.218	.113	.033	.210	.111	.033	.203	.109	.033	
6.0	.214	.107	.031	.210	.106	.030	.202	.104	.030	.196	.102	.030	.189	.100	.030	
7.0	.199	.098	.028	.195	.097	.028	.189	.095	.027	.183	.094	.027	.177	.092	.027	
8.0	.186	.091	.025	.183	.090	.025	.177	.088	.025	.171	.087	.025	.166	.085	.025	
9.0	.174	.084	.023	.171	.083	.023	.166	.082	.023	.161	.081	.023	.156	.079	.023	
10.0	.164	.078	.022	.161	.078	.022	.156	.077	.022	.152	.075	.021	.148	.074	.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	.190	.190	.190	.163	.163	.163	.111	.111	.111	.064	.064	.064	.020	.020	.020	
1.0	.180	.156	.134	.154	.134	.116	.106	.092	.080	.061	.053	.046	.019	.017	.015	
2.0	.172	.132	.098	.148	.114	.085	.101	.079	.059	.058	.046	.035	.019	.015	.011	
3.0	.164	.114	.074	.141	.099	.064	.097	.068	.045	.056	.040	.027	.018	.013	.009	
4.0	.157	.101	.058	.135	.087	.051	.093	.061	.036	.054	.036	.021	.017	.012	.007	
5.0	.149	.091	.047	.128	.078	.041	.088	.055	.029	.051	.032	.017	.016	.010	.006	
6.0	.142	.082	.039	.122	.071	.034	.084	.050	.024	.049	.029	.014	.016	.010	.005	
7.0	.135	.075	.033	.116	.065	.029	.080	.046	.021	.047	.027	.012	.015	.009	.004	
8.0	.129	.070	.029	.111	.060	.025	.077	.042	.018	.045	.025	.011	.014	.008	.004	
9.0	.123	.065	.025	.106	.056	.022	.073	.039	.016	.043	.023	.009	.014	.008	.003	
10.0	.117	.060	.022	.101	.052	.020	.070	.037	.014	.041	.022	.008	.013	.007	.003	

C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2019-06-15

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
 Humidity:65.0%
 Test Distance:9.600m [K=1.0000]
 Remarks:

Uncorrected UGR Table

Test:U:240.0V I:0.0850A P:19.50W PF:0.9500 Lamp Flux:2179.69x1 lm										
NAME: CP20W-CW					TYPE:20W			WEIGHT:		
DIM.:					SPEC.:6000K			SERIAL No.:1		
MFR.:					SUR.:0.085			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	25.0	26.6	25.3	26.8	27.0	24.9	26.4	25.2	26.6	26.8
3H	26.6	28.0	26.9	28.3	28.5	26.4	27.9	26.7	28.1	28.3
4H	27.3	28.6	27.6	28.9	29.1	27.1	28.4	27.4	28.7	28.9
6H	27.8	29.1	28.1	29.3	29.6	27.5	28.8	27.9	29.1	29.3
8H	28.0	29.2	28.3	29.5	29.8	27.7	28.9	28.0	29.2	29.5
12H	28.1	29.3	28.4	29.6	29.9	27.8	28.9	28.1	29.2	29.5
4H 2H	25.6	27.0	26.0	27.2	27.5	25.6	26.9	25.9	27.1	27.4
3H	27.4	28.6	27.8	28.9	29.2	27.3	28.5	27.6	28.7	29.1
4H	28.2	29.3	28.6	29.6	30.0	28.0	29.1	28.4	29.4	29.8
6H	28.9	29.8	29.3	30.2	30.5	28.6	29.6	29.0	29.9	30.3
8H	29.1	30.0	29.5	30.4	30.8	28.8	29.7	29.2	30.1	30.5
12H	29.3	30.1	29.7	30.5	30.9	29.0	29.8	29.4	30.2	30.6
8H 4H	28.5	29.4	28.9	29.8	30.2	28.3	29.2	28.8	29.6	30.0
6H	29.3	30.1	29.8	30.5	30.9	29.1	29.8	29.5	30.2	30.7
8H	29.7	30.3	30.1	30.7	31.2	29.4	30.1	29.9	30.5	30.9
12H	29.9	30.5	30.4	30.9	31.4	29.6	30.2	30.1	30.6	31.1
12H 4H	28.5	29.3	29.0	29.7	30.1	28.4	29.2	28.8	29.6	30.0
6H	29.4	30.0	29.9	30.5	30.9	29.2	29.8	29.6	30.3	30.7
8H	29.8	30.3	30.3	30.8	31.3	29.5	30.1	30.0	30.5	31.0
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 2180 lm Total Lamp Luminous Flux.(8log(F/F0) = 2.7)

C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2019-06-15

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
 Humidity:65.0%
 Test Distance:9.600m [K=1.0000]
 Remarks:

UTILIZATION FACTORS TABLE

Test:U:240.0V I:0.0850A P:19.50W PF:0.9500 Lamp Flux:2179.69x1 lm		
NAME: CP20W-CW	TYPE:20W	WEIGHT:
DIM.:	SPEC.:6000K	SERIAL No.:1
MFR.:	SUR.:0.085	PROTECTION ANGLE:

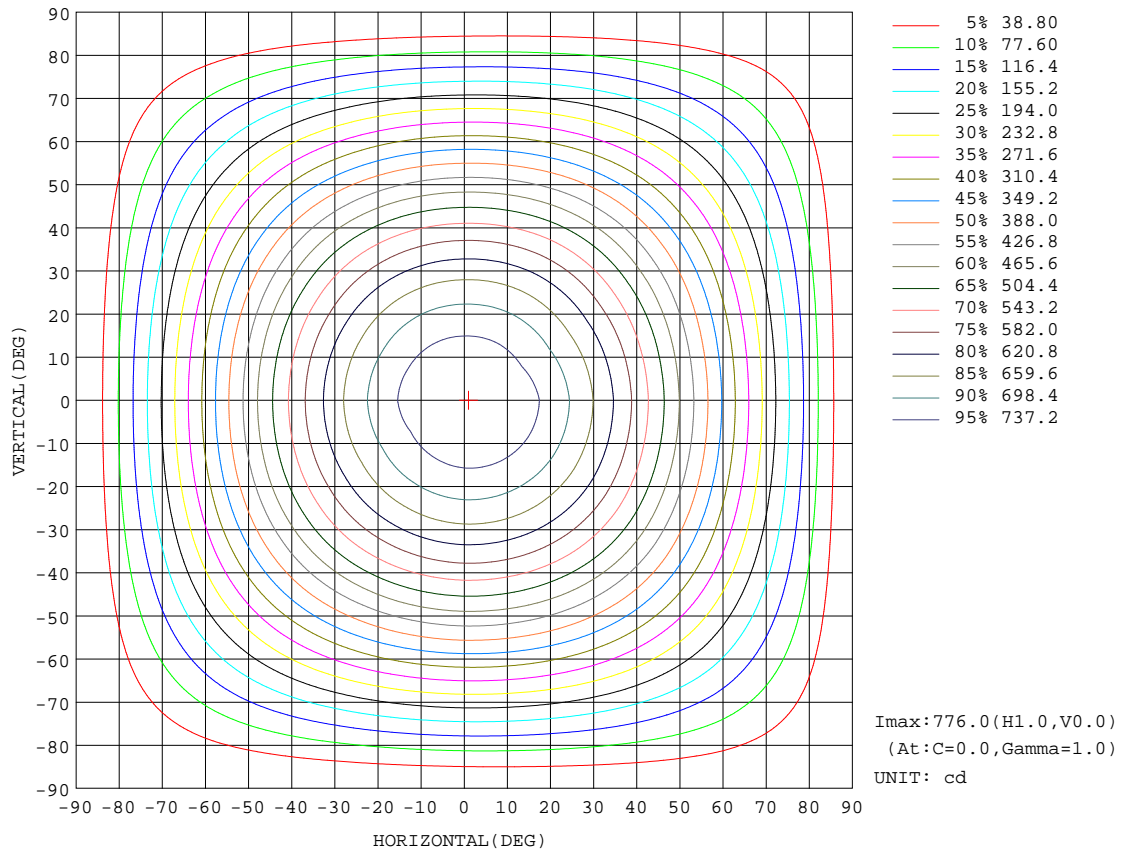
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	58	46	39	57	46	39	56	45	39	32
0.80	68	56	49	67	56	48	65	55	48	41
1.00	76	65	58	75	64	57	73	66	57	50
1.25	83	73	65	82	72	65	79	70	64	57
1.50	88	78	71	86	77	71	83	76	70	62
2.00	95	86	80	93	85	79	90	83	78	70
2.50	99	91	85	97	90	84	93	87	82	74
3.00	102	95	90	100	94	89	96	91	87	78
4.00	106	101	96	104	99	94	100	95	92	83
5.00	109	104	100	106	102	98	102	98	95	86
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004			Suspended				SHRNOM = 1.25			

C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2019-06-15

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
 Humidity:65.0%
 Test Distance:9.600m [K=1.0000]
 Remarks:

ISOCANDELA DIAGRAM

Test:U:240.0V I:0.0850A P:19.50W PF:0.9500 Lamp Flux:2179.69x1 lm		
NAME: CP20W-CW	TYPE:20W	WEIGHT:
DIM.:	SPEC.:6000K	SERIAL No.:1
MFR.:	SUR.:0.085	PROTECTION ANGLE:

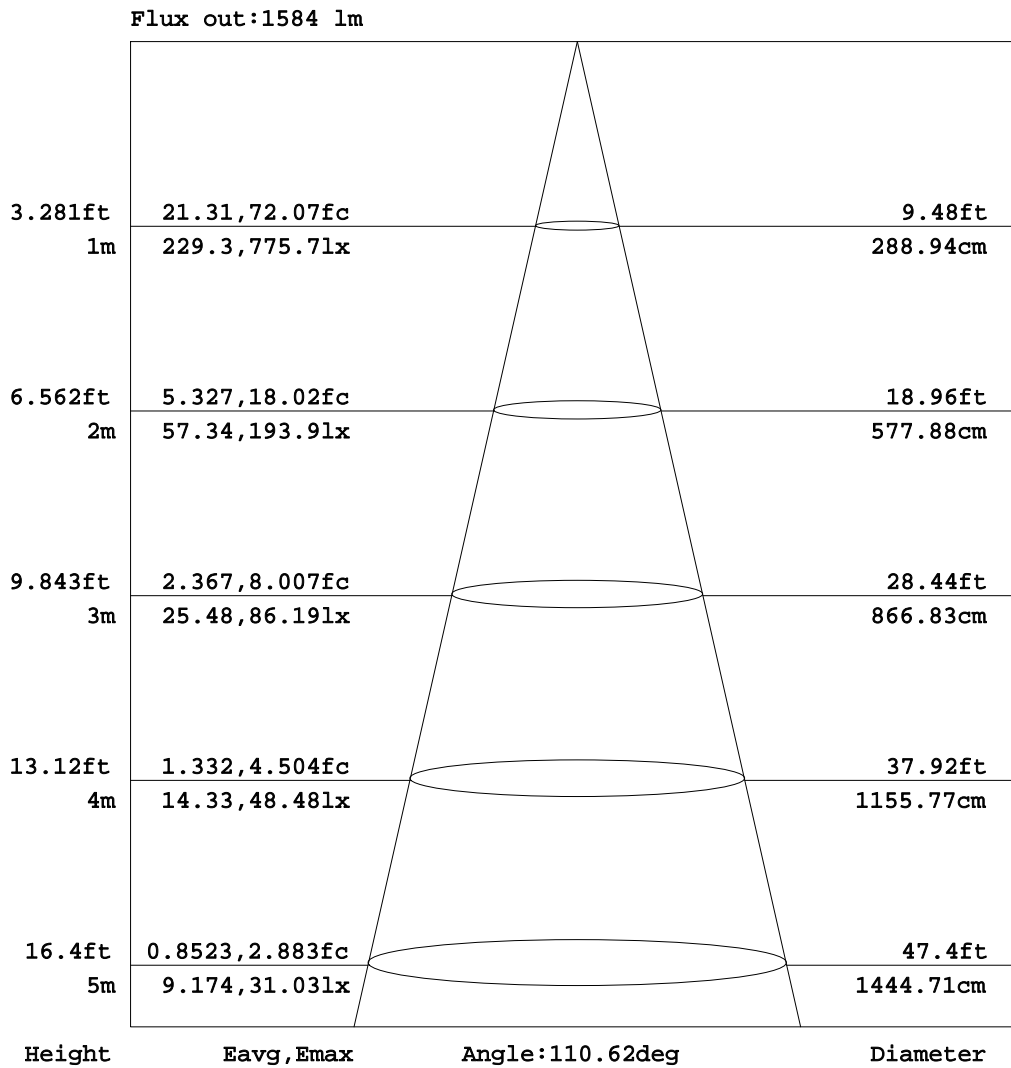


C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2019-06-15

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
Humidity:65.0%
Test Distance:9.600m [K=1.0000]
Remarks:

AAI Figure

Test:U:240.0V I:0.0850A P:19.50W PF:0.9500 Lamp Flux:2179.69x1 lm		
NAME: CP20W-CW	TYPE:20W	WEIGHT:
DIM.:	SPEC.:6000K	SERIAL No.:1
MFR.:	SUR.:0.085	PROTECTION ANGLE:



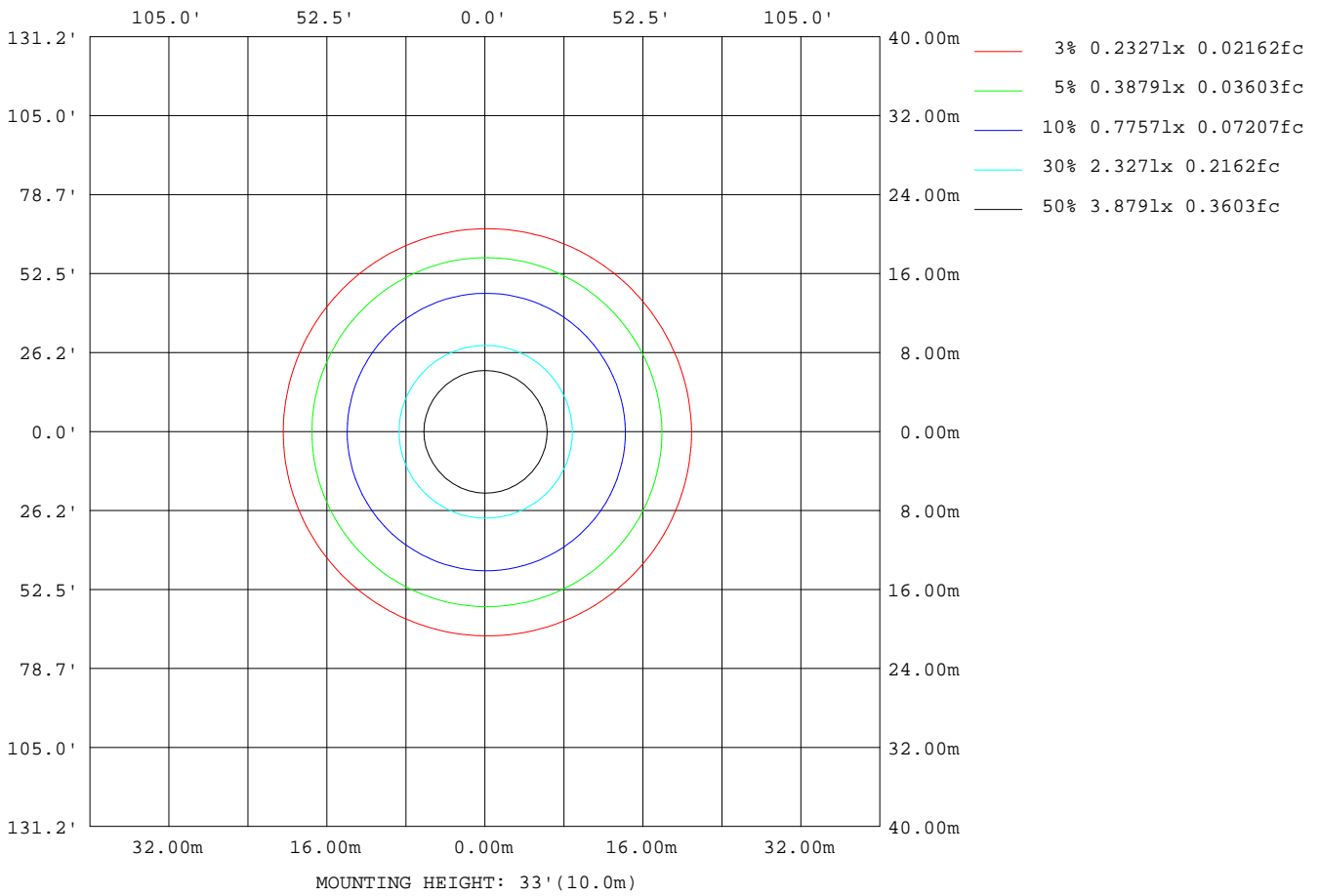
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2019-06-15

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
 Humidity:65.0%
 Test Distance:9.600m [K=1.0000]
 Remarks:

ISOLUX DIAGRAM

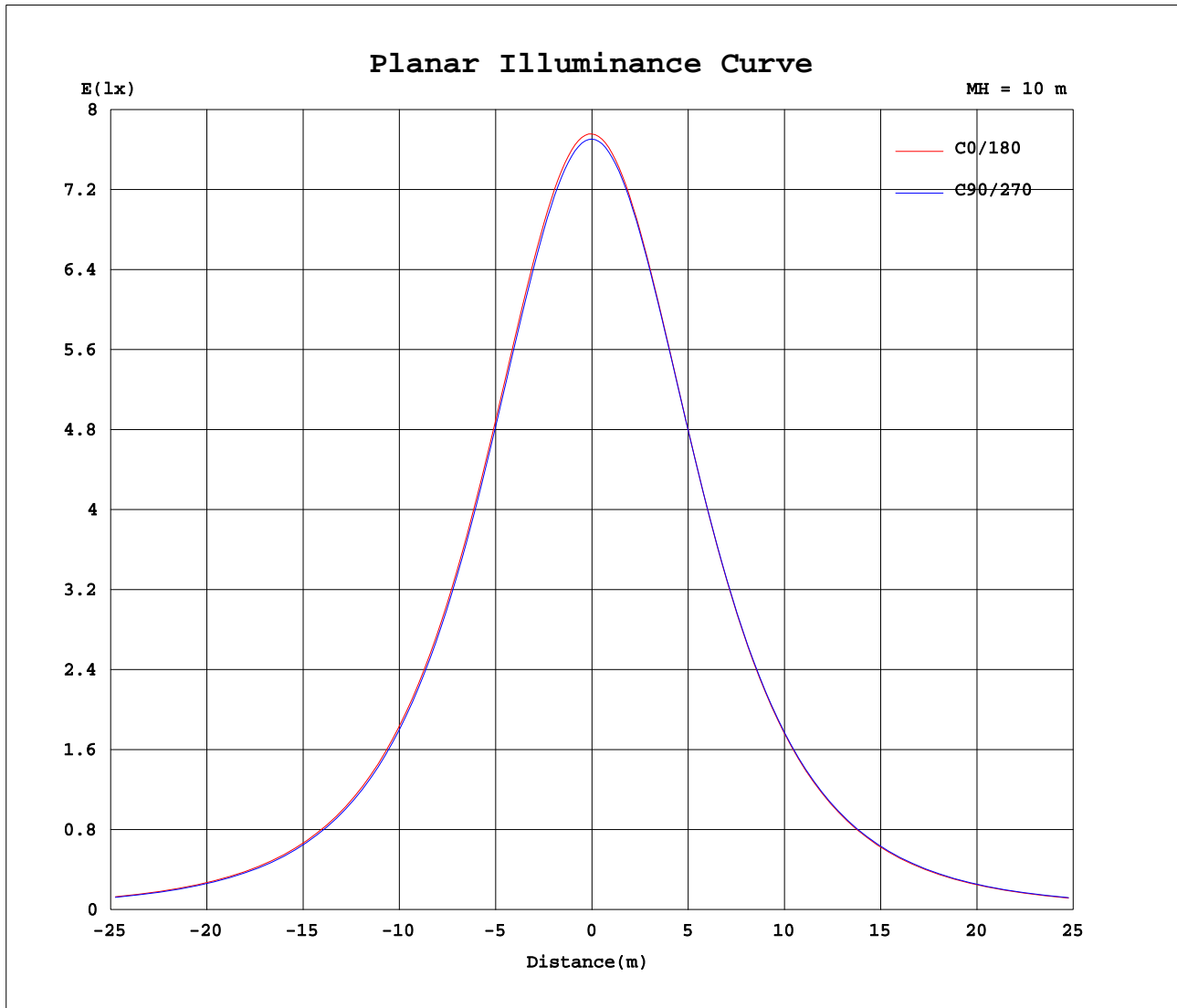
Test:U:240.0V I:0.0850A P:19.50W PF:0.9500 Lamp Flux:2179.69x1 lm		
NAME: CP20W-CW	TYPE:20W	WEIGHT:
DIM.:	SPEC.:6000K	SERIAL No.:1
MFR.:	SUR.:0.085	PROTECTION ANGLE:



C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2019-06-15

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
 Humidity:65.0%
 Test Distance:9.600m [K=1.0000]
 Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: DAMIN
 Test Date: 2019-06-15

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.276
 Humidity: 65.0%
 Test Distance: 9.600m [K=1.0000]
 Remarks:

