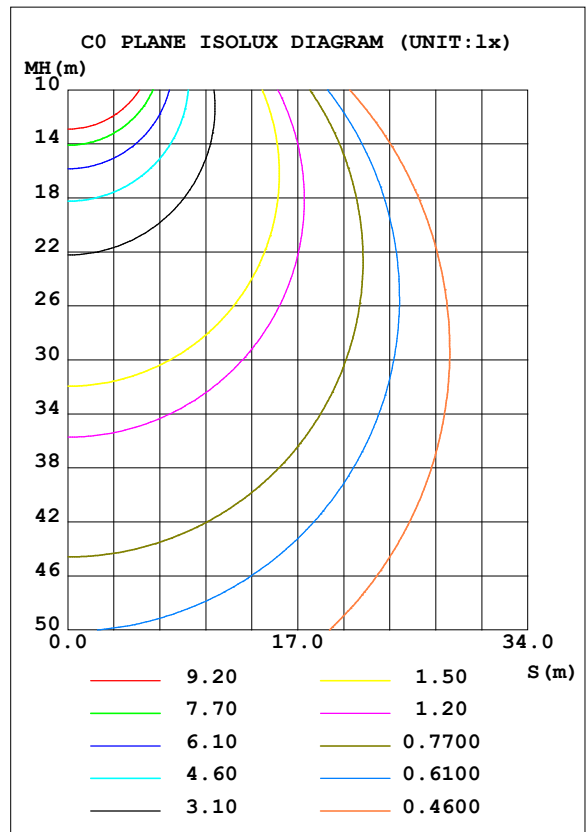
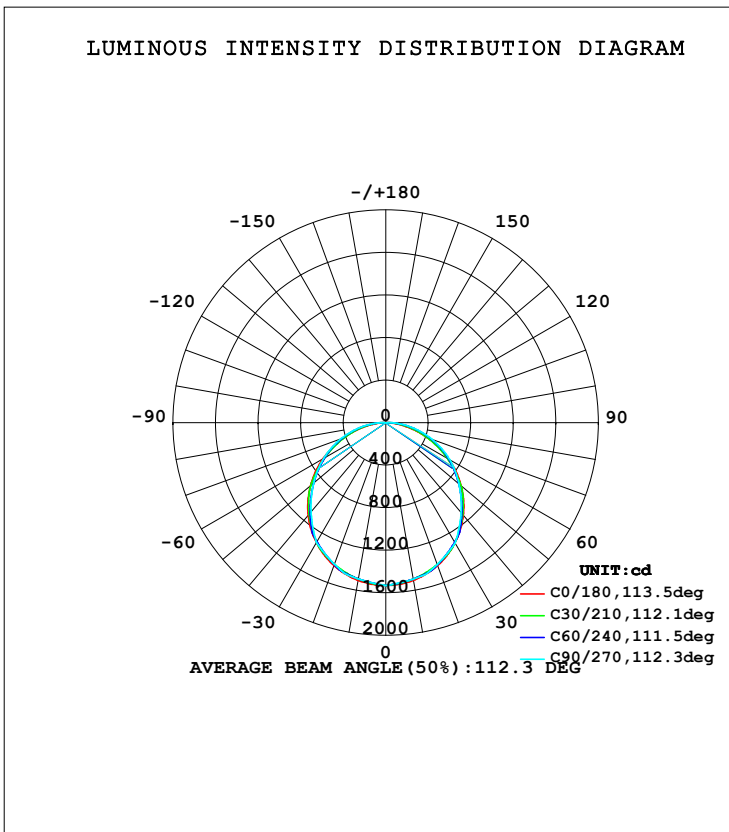


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:120.1V I:0.3308A P:39.55W PF:0.9953 Lamp Flux:4427.02x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	PROTECTION ANGLE:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 111.93 lm/W			
MODEL		I <sub>max</sub> (cd)	1531	S/MH (C0/180)	1.27
NOMINAL POWER (W)		LOR (%)	100.0	S/MH (C90/270)	1.25
RATED VOLTAGE (V)		TOTAL FLUX (lm)	4427.0	η UP, DN (C0-180)	0.0, 50.2
NOMINAL FLUX (lm)	4427.02	CIE CLASS	DIRECT	η UP, DN (C180-360)	0.0, 49.8
LAMPS INSIDE	1	η up (%)	0.0	CIBSE SHR NOM	1.25
TEST VOLTAGE (V)		η down (%)	100.0	CIBSE SHR MAX	1.35



C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators: DAMIN  
 Test Date: 2019-09-16

γ Range: 0 - 90DEG  
 γ Interval: 0.5DEG  
 Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.0.286  
 Humidity: 65.0%  
 Test Distance: 9.646m [K=1.0000]  
 Remarks:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum,lamp
5	1525	1514	1512	1514	1525	1514	1512	1514	0- 5	36.37	36.37	0.82,0.82
10	1505	1492	1494	1491	1506	1491	1492	1491	5- 10	107.6	144.0	3.25,3.25
15	1473	1463	1475	1463	1474	1461	1473	1462	10- 15	175.5	319.5	7.22,7.22
20	1429	1429	1419	1428	1429	1426	1416	1427	15- 20	238.0	557.5	12.6,12.6
25	1373	1366	1363	1365	1373	1363	1359	1364	20- 25	291.9	849.4	19.2,19.2
30	1304	1294	1307	1293	1305	1291	1302	1291	25- 30	336.6	1186	26.8,26.8
35	1225	1218	1205	1218	1226	1215	1198	1215	30- 35	370.1	1556	35.2,35.2
40	1135	1134	1103	1134	1136	1131	1094	1130	35- 40	389.1	1945	43.9,43.9
45	1035	1018	1001	1017	1036	1013	989.7	1012	40- 45	394.7	2340	52.9,52.9
50	926.5	900.7	899.4	899.0	925.9	893.5	885.4	893.8	45- 50	387.4	2727	61.6,61.6
55	809.3	783.9	797.5	781.9	808.6	774.5	781.1	775.7	50- 55	368.2	3096	69.9,69.9
60	683.5	668.4	695.6	665.9	684.1	657.2	676.9	658.6	55- 60	338.4	3434	77.6,77.6
65	550.9	555.0	580.8	551.9	555.4	542.0	564.3	543.8	60- 65	298.6	3732	84.3,84.3
70	416.7	441.0	466.0	438.5	425.0	428.8	451.8	429.8	65- 70	250.1	3983	90,90
75	286.5	327.0	351.1	325.6	294.5	318.0	339.2	318.3	70- 75	196.0	4179	94.4,94.4
80	166.6	216.8	236.3	216.0	174.6	210.5	226.7	210.3	75- 80	139.0	4318	97.5,97.5
85	60.30	109.6	121.5	109.2	67.92	105.4	114.2	105.3	80- 85	81.95	4400	99.4,99.4
90	2.031	4.000	6.649	3.823	1.930	1.753	1.634	1.759	85- 90	27.44	4427	100,100
95									90- 95			
100									95-100			
105									100-105			
110									105-110			
115									110-115			
120									115-120			
125									120-125			
130									125-130			
135									130-135			
140									135-140			
145									140-145			
150									145-150			
155									150-155			
160									155-160			
165									160-165			
170									165-170			
175									170-175			
180									175-180			
DEG	LUMINOUS INTENSITY:cd								UNIT:lm			

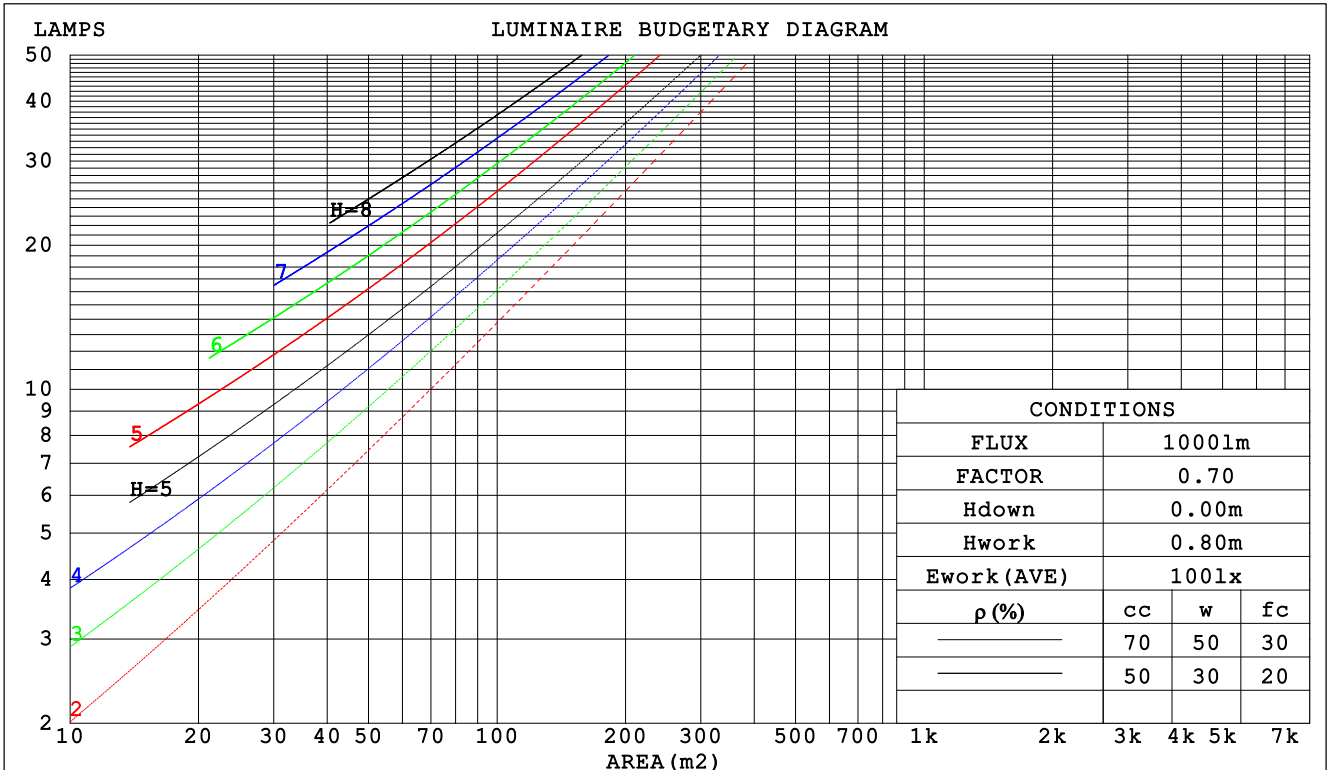
C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:DAMIN  
 Test Date:2019-09-16

γ Range: 0 - 90DEG  
 γ Interval: 0.5DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.286  
 Humidity:65.0%  
 Test Distance:9.646m [K=1.0000]  
 Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:120.1V I:0.3308A P:39.55W PF:0.9953 Lamp Flux:4427.02x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	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															
	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	1.03	.99	.95	1.01	.97	.93	.97	.94	.90	.93	.90	.88	.89	.87	.85	.83
2.0	.90	.83	.77	.88	.82	.76	.84	.79	.74	.81	.77	.73	.78	.74	.71	.69
3.0	.79	.70	.64	.77	.69	.63	.74	.68	.62	.71	.66	.61	.69	.64	.60	.58
4.0	.70	.61	.54	.68	.60	.54	.66	.59	.53	.63	.57	.52	.61	.56	.51	.49
5.0	.62	.53	.46	.61	.53	.46	.59	.51	.46	.57	.50	.45	.55	.49	.45	.42
6.0	.56	.47	.40	.55	.46	.40	.53	.46	.40	.51	.45	.39	.50	.44	.39	.37
7.0	.51	.42	.36	.50	.41	.36	.48	.41	.35	.47	.40	.35	.46	.39	.35	.33
8.0	.46	.38	.32	.46	.37	.32	.44	.37	.31	.43	.36	.31	.42	.36	.31	.29
9.0	.42	.34	.29	.42	.34	.28	.41	.33	.28	.40	.33	.28	.39	.32	.28	.26
10.0	.39	.31	.26	.39	.31	.26	.38	.31	.26	.37	.30	.26	.36	.30	.25	.24



C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:DAMIN  
 Test Date:2019-09-16

γ Range: 0 - 90DEG  
 γ Interval: 0.5DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.286  
 Humidity:65.0%  
 Test Distance:9.646m [K=1.0000]  
 Remarks:

WEC AND CCEC

Test:U:120.1V I:0.3308A P:39.55W PF:0.9953 Lamp Flux:4427.02x1 lm												
NAME:				TYPE:				WEIGHT:				
SPEC.:				DIM.:				SERIAL No.:				
MFR.:				SUR.:				PROTECTION ANGLE:				

ρ <sub>cc</sub>	80%			70%			50%			30%			10%			0
ρ <sub>w</sub>	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρ <sub>fc</sub>	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Wall Exitance Coefficients(WEC)									
0.0																
1.0	.319	.181	.057	.312	.178	.056	.298	.171	.055	.286	.165	.053	.275	.159	.051	
2.0	.297	.163	.050	.291	.160	.049	.279	.155	.048	.268	.151	.047	.258	.146	.046	
3.0	.274	.146	.044	.268	.144	.043	.258	.140	.042	.248	.136	.042	.239	.132	.041	
4.0	.252	.131	.038	.247	.129	.038	.238	.126	.038	.229	.123	.037	.221	.120	.037	
5.0	.232	.118	.034	.228	.117	.034	.220	.114	.034	.212	.112	.033	.205	.110	.033	
6.0	.215	.108	.031	.211	.107	.031	.204	.105	.030	.197	.103	.030	.191	.100	.030	
7.0	.200	.099	.028	.197	.098	.028	.190	.096	.028	.184	.094	.027	.178	.093	.027	
8.0	.187	.091	.026	.184	.090	.026	.178	.089	.025	.172	.087	.025	.167	.086	.025	
9.0	.175	.085	.024	.172	.084	.024	.167	.083	.023	.162	.081	.023	.157	.080	.023	
10.0	.164	.079	.022	.162	.078	.022	.157	.077	.022	.153	.076	.022	.148	.075	.021	

ρ <sub>cc</sub>	80%			70%			50%			30%			10%			0
ρ <sub>w</sub>	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρ <sub>fc</sub>	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	.181	.156	.134	.155	.134	.115	.106	.092	.080	.061	.053	.046	.020	.017	.015	
2.0	.173	.132	.097	.148	.114	.084	.102	.079	.059	.059	.046	.034	.019	.015	.011	
3.0	.165	.114	.074	.142	.099	.064	.097	.069	.045	.056	.040	.026	.018	.013	.009	
4.0	.158	.101	.058	.135	.087	.050	.093	.061	.035	.054	.036	.021	.017	.012	.007	
5.0	.150	.091	.047	.129	.078	.041	.089	.055	.029	.051	.032	.017	.017	.010	.006	
6.0	.143	.082	.039	.123	.071	.034	.085	.050	.024	.049	.029	.014	.016	.010	.005	
7.0	.136	.075	.033	.117	.065	.029	.081	.046	.020	.047	.027	.012	.015	.009	.004	
8.0	.129	.070	.029	.111	.060	.025	.077	.042	.018	.045	.025	.011	.015	.008	.003	
9.0	.123	.065	.025	.106	.056	.022	.074	.039	.016	.043	.023	.009	.014	.008	.003	
10.0	.118	.060	.022	.101	.052	.020	.070	.037	.014	.041	.022	.008	.013	.007	.003	

C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:DAMIN  
 Test Date:2019-09-16

γ Range: 0 - 90DEG  
 γ Interval: 0.5DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.286  
 Humidity:65.0%  
 Test Distance:9.646m [K=1.0000]  
 Remarks:

**UGR(Unified Glare Rating) Table**

Test:U:120.1V I:0.3308A P:39.55W PF:0.9953 Lamp Flux:4427.02x1 lm										
NAME:					TYPE:			WEIGHT:		
SPEC.:					DIM.:			SERIAL No.:		
MFR.:					SUR.:			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	18.0	19.5	18.2	19.7	19.9	18.0	19.5	18.3	19.7	19.9
3H	19.4	20.9	19.7	21.1	21.3	19.7	21.2	20.0	21.4	21.6
4H	20.0	21.4	20.3	21.6	21.9	20.5	21.9	20.8	22.1	22.4
6H	20.4	21.7	20.7	21.9	22.2	21.1	22.4	21.5	22.7	23.0
8H	20.5	21.7	20.8	22.0	22.3	21.4	22.6	21.7	22.9	23.2
12H	20.5	21.7	20.9	22.0	22.3	21.6	22.8	21.9	23.1	23.4
4H 2H	18.6	19.9	18.9	20.2	20.4	18.6	20.0	18.9	20.2	20.5
3H	20.2	21.4	20.6	21.7	22.0	20.6	21.7	20.9	22.0	22.3
4H	20.9	22.0	21.3	22.3	22.7	21.5	22.6	21.8	22.9	23.2
6H	21.4	22.4	21.8	22.7	23.1	22.3	23.2	22.7	23.6	24.0
8H	21.5	22.4	22.0	22.8	23.2	22.6	23.5	23.0	23.9	24.2
12H	21.6	22.4	22.0	22.8	23.2	22.9	23.7	23.3	24.1	24.5
8H 4H	21.3	22.2	21.7	22.6	22.9	21.8	22.7	22.2	23.0	23.4
6H	22.0	22.7	22.4	23.1	23.5	22.8	23.5	23.2	23.9	24.3
8H	22.2	22.9	22.7	23.3	23.7	23.2	23.9	23.7	24.3	24.7
12H	22.3	22.9	22.8	23.4	23.8	23.6	24.1	24.0	24.6	25.1
12H 4H	21.3	22.2	21.8	22.5	23.0	21.8	22.6	22.2	23.0	23.4
6H	22.1	22.7	22.5	23.2	23.6	22.8	23.5	23.3	23.9	24.4
8H	22.4	22.9	22.8	23.4	23.9	23.3	23.9	23.8	24.3	24.8
Variations with the observer position at spacings:										
S = 1.0H	+ 0.2 / - 0.2					+ 0.1 / - 0.2				
1.5H	+ 0.2 / - 0.3					+ 0.2 / - 0.3				
2.0H	+ 0.2 / - 0.3					+ 0.1 / - 0.3				

CIE Pub.117 Corrected 4427 lm Total Lamp Luminous Flux. (8log(F/F0) = 5.2)

C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:DAMIN  
 Test Date:2019-09-16

γ Range: 0 - 90DEG  
 γ Interval: 0.5DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.286  
 Humidity:65.0%  
 Test Distance:9.646m [K=1.0000]  
 Remarks:

**UTILIZATION FACTORS TABLE**

Test:U:120.1V I:0.3308A P:39.55W PF:0.9953 Lamp Flux:4427.02x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	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	57	46	38	56	45	38	55	45	38	32
0.80	67	55	48	66	55	48	64	54	47	40
1.00	76	64	57	74	64	57	72	65	56	49
1.25	83	72	65	81	71	64	78	70	63	56
1.50	88	78	70	86	77	70	83	75	69	61
2.00	94	86	79	93	85	78	89	82	77	69
2.50	98	90	84	96	89	83	92	86	82	73
3.00	102	95	89	100	93	88	96	90	86	77
4.00	106	100	95	103	98	94	99	95	91	82
5.00	108	103	99	106	101	98	101	98	95	85
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004			Suspended				SHRNOM = 1.25			

C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:DAMIN  
 Test Date:2019-09-16

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 0.5DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.286  
 Humidity:65.0%  
 Test Distance:9.646m [K=1.0000]  
 Remarks:

ISOCANDELA DIAGRAM

Test:U:120.1V I:0.3308A P:39.55W PF:0.9953 Lamp Flux:4427.02x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	PROTECTION ANGLE:

Conical surface Flux(90deg):

2339.9 lm

%lum = 52.9%

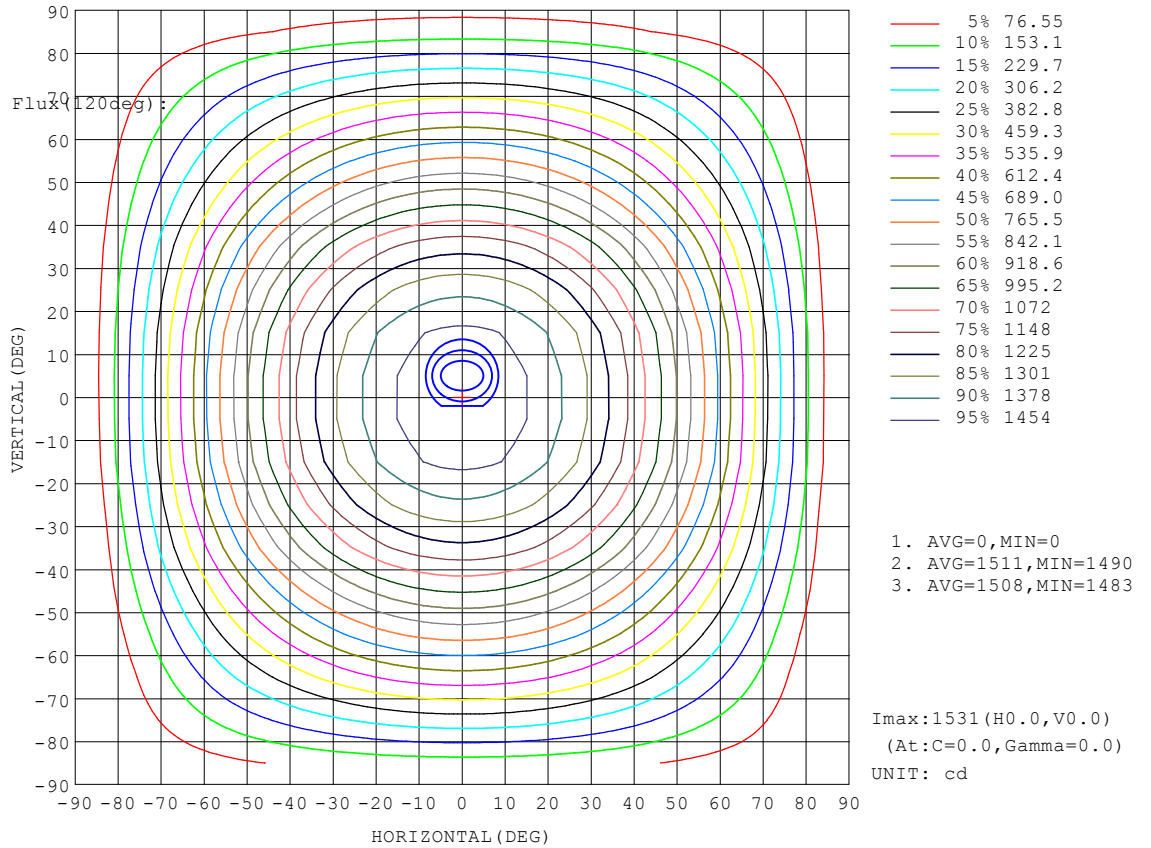
%lamp = 52.9%

Conical surface Flux(20deg):

3433.9 lm

%lum = 77.6%

%lamp = 77.6%

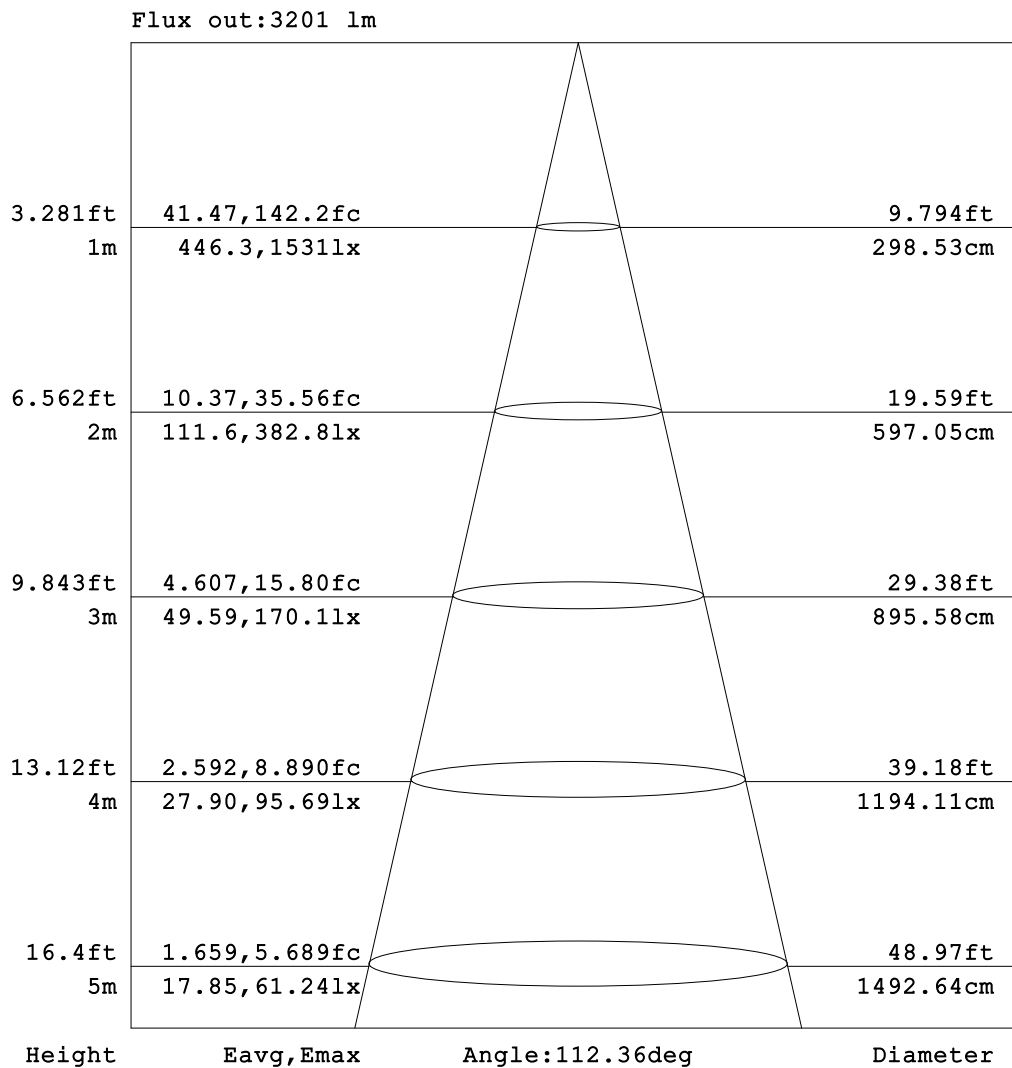


C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:DAMIN  
 Test Date:2019-09-16

γ Range: 0 - 90DEG  
 γ Interval: 0.5DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.286  
 Humidity:65.0%  
 Test Distance:9.646m [K=1.0000]  
 Remarks:

AAI Figure

Test:U:120.1V I:0.3308A P:39.55W PF:0.9953 Lamp Flux:4427.02x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	PROTECTION ANGLE:



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

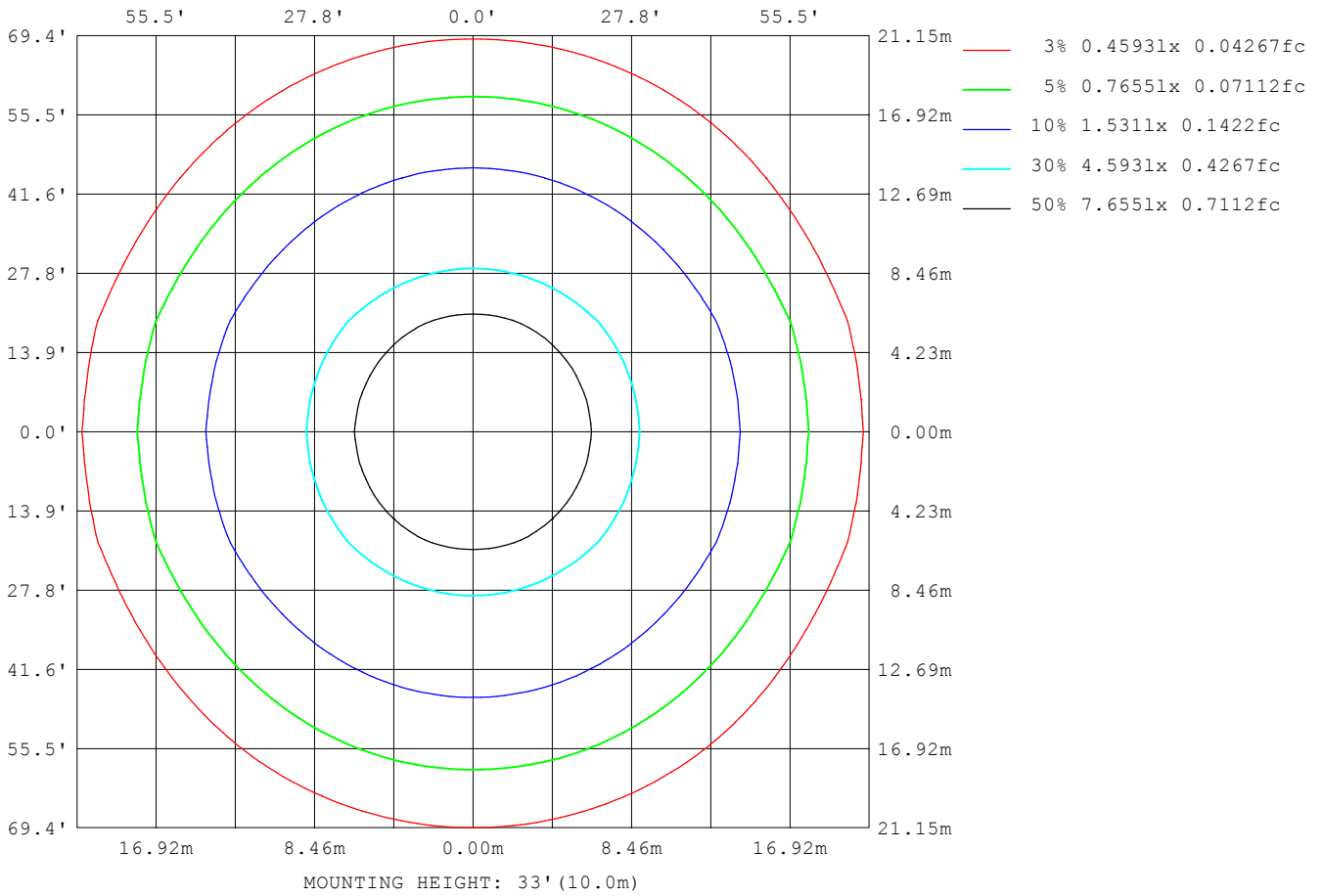
C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators: DAMIN  
 Test Date: 2019-09-16

γ Range: 0 - 90DEG  
 γ Interval: 0.5DEG  
 Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.0.286  
 Humidity: 65.0%  
 Test Distance: 9.646m [K=1.0000]  
 Remarks:



ISOLUX DIAGRAM

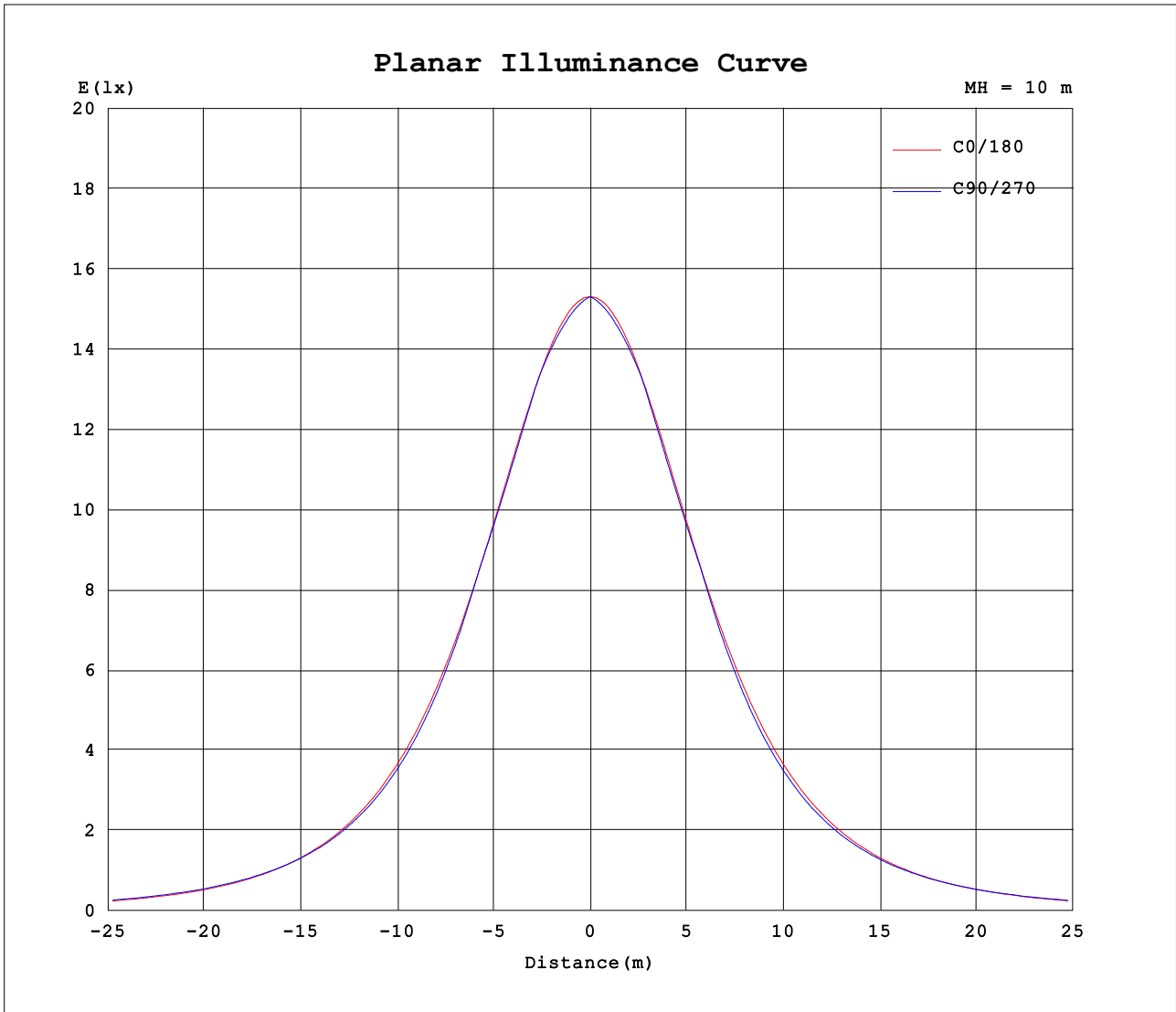
Test:U:120.1V I:0.3308A P:39.55W PF:0.9953 Lamp Flux:4427.02x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	PROTECTION ANGLE:



C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:DAMIN  
 Test Date:2019-09-16

γ Range: 0 - 90DEG  
 γ Interval: 0.5DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.286  
 Humidity:65.0%  
 Test Distance:9.646m [K=1.0000]  
 Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:DAMIN  
 Test Date:2019-09-16

γ Range: 0 - 90DEG  
 γ Interval: 0.5DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.286  
 Humidity:65.0%  
 Test Distance:9.646m [K=1.0000]  
 Remarks:







