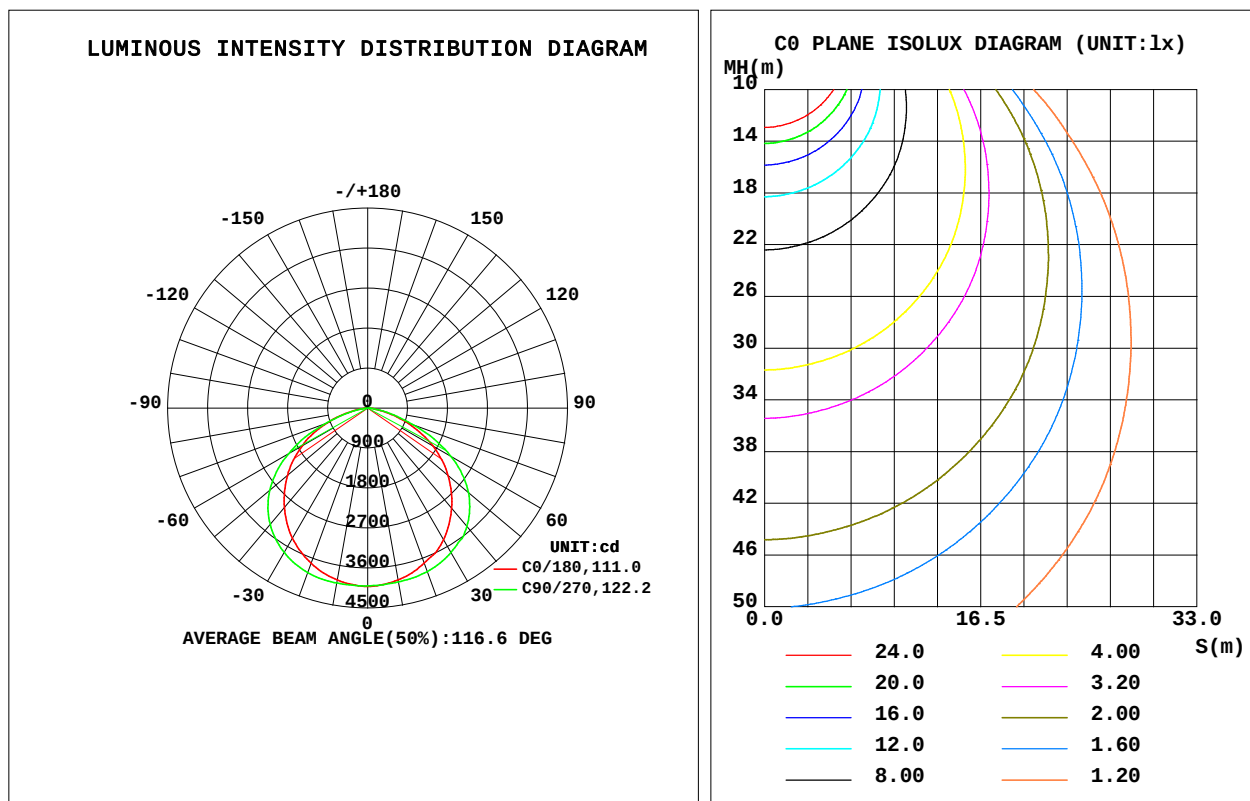


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:220.7V I:0.3890A P:83.90W PF:0.9770 Lamp Flux:12089.4x1 lm		
NAME: UNF-20210015-TDC 上 5000K	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 144.09 lm/W			
MODEL		I _{max} (cd)	4016	S/MH(C0/180)	1.26
NOMINAL POWER(W)		LOR(%)	100.0	S/MH(C90/270)	1.40
RATED VOLTAGE(V)	220.0	TOTAL FLUX(lm)	12089	η UP, DN(C0-180)	0.0,49.9
NOMINAL FLUX(lm)	12089.4	CIE CLASS	DIRECT	η UP, DN(C180-360)	0.0,50.1
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	1.50
TEST VOLTAGE(V)	220.0	η down(%)	100.0	CIBSE SHR MAX	1.55



C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2023-07-26

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE G0-2000A_V1 SYSTEM V2.0.295T
Humidity:65.0%
Test Distance:9.460m [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
10	3931	3973	3999	3953	3929	3943	3973	3949	0- 10	379.8	379.8	3.14, 3.14
20	3719	3865	3942	3839	3716	3820	3918	3838	10- 20	1104	1484	12.3, 12.3
30	3389	3649	3758	3636	3419	3601	3754	3629	20- 30	1722	3206	26.5, 26.5
40	2919	3334	3416	3297	2941	3256	3476	3295	30- 40	2155	5362	44.4, 44.4
50	2359	2819	2880	2773	2368	2750	2962	2803	40- 50	2311	7673	63.5, 63.5
60	1703	2097	2062	2035	1688	2039	2161	2110	50- 60	2119	9792	81, 81
70	972.0	1195	981.1	1131	921.2	1138	1059	1222	60- 70	1524	11315	93.6, 93.6
80	269.4	334.8	192.5	283.9	252.1	296.1	236.5	348.4	70- 80	681.9	11997	99.2, 99.2
90	4.086	5.117	4.241	5.664	4.155	4.696	3.930	5.054	80- 90	92.13	12089	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		

Conical surface Flux(90deg): 6517.7 lm

%lum = 53.9%
 %lamp = 53.9%

Conical surface Flux(120deg): 9791.8 lm

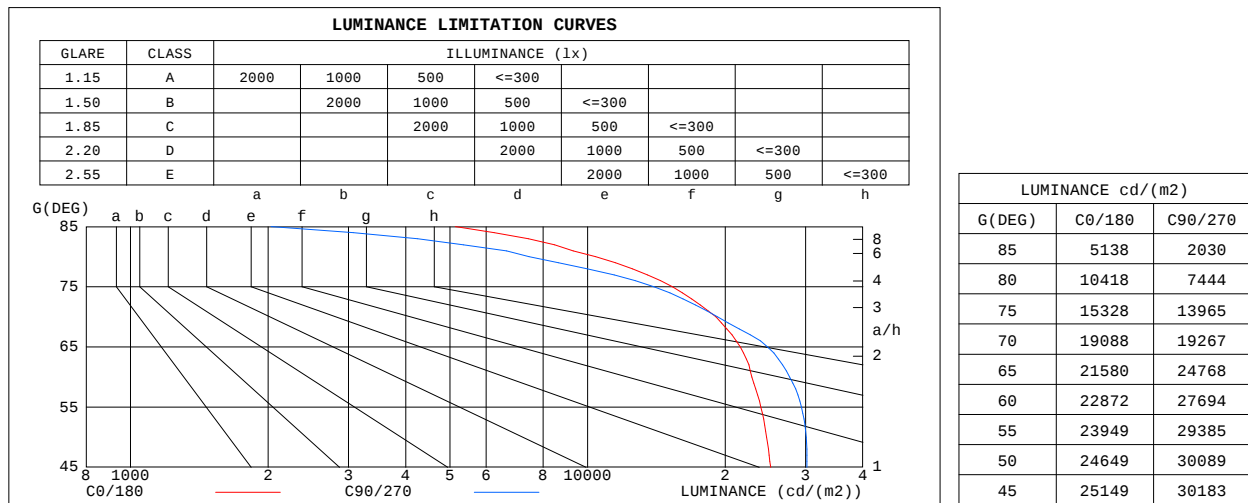
%lum = 81.0%
 %lamp = 81.0%

C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators:
 Test Date: 2023-07-26

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE G0-2000A_V1 SYSTEM V2.0.295T
 Humidity: 65.0%
 Test Distance: 9.460m [K=1.0000]
 Remarks:

LUMINANCE LIMITATION CURVES

Test:U:220.7V I:0.3890A P:83.90W PF:0.9770 Lamp Flux:12089.4x1 lm		
NAME: UNF-20210015-TDC 上 5000K	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:



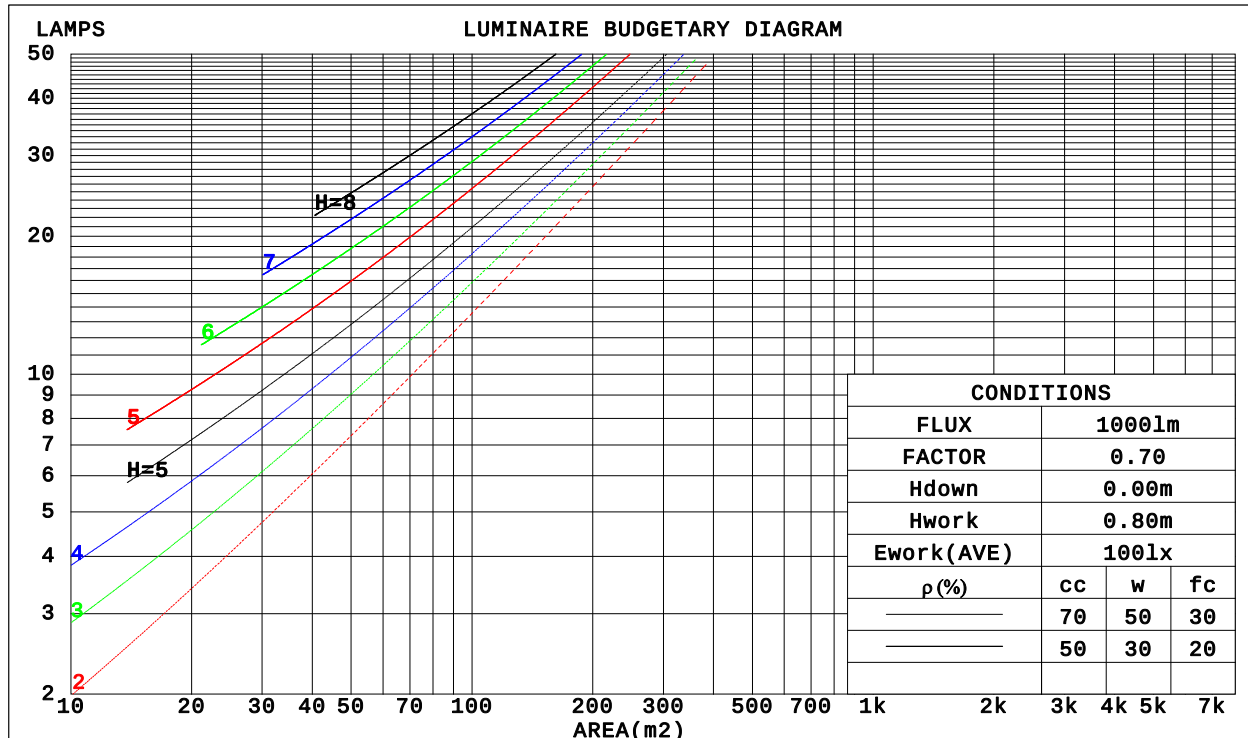
C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2023-07-26

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System: EVERFINE G0-2000A_V1 SYSTEM V2.0.295T
Humidity: 65.0%
Test Distance: 9.460m [K=1.0000]
Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:220.7V I:0.3890A P:83.90W PF:0.9770 Lamp Flux:12089.4x1 lm		
NAME: UNF-20210015-TDC 上 5000K	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

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	1.19	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	1.00
1.0	1.05	1.01	.97	1.02	.99	.95	.98	.95	.92	.94	.92	.89	.91	.89	.87	.85
2.0	.91	.85	.79	.89	.83	.78	.86	.81	.76	.83	.78	.75	.80	.76	.73	.71
3.0	.80	.72	.66	.79	.71	.65	.76	.69	.64	.73	.67	.63	.70	.66	.62	.59
4.0	.71	.62	.55	.69	.61	.55	.67	.60	.54	.65	.58	.53	.62	.57	.53	.51
5.0	.63	.54	.47	.62	.54	.47	.60	.52	.47	.58	.51	.46	.56	.50	.46	.44
6.0	.57	.48	.41	.56	.47	.41	.54	.46	.41	.52	.45	.40	.51	.45	.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	.34	.29	.42	.34	.29	.41	.34	.29	.40	.33	.28	.39	.33	.28	.26
10.0	.39	.31	.26	.39	.31	.26	.38	.31	.26	.37	.30	.26	.36	.30	.26	.24



C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators:
 Test Date: 2023-07-26

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.295T
 Humidity: 65.0%
 Test Distance: 9.460m [K=1.0000]
 Remarks:

WEC AND CCEC

Test:U:220.7V I:0.3890A P:83.90W PF:0.9770 Lamp Flux:12089.4x1 lm					
NAME: UNF-20210015-TDC 上 5000K			TYPE:		WEIGHT:
SPEC.:			DIM.:		SERIAL No.:
MFR.:			SUR.:		Shielding Angle:

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	.294	.167	.053	.287	.164	.052	.274	.157	.050	.262	.151	.048	.251	.145	.047		
2.0	.283	.155	.048	.277	.153	.047	.266	.148	.046	.255	.143	.045	.245	.139	.044		
3.0	.265	.141	.042	.260	.139	.042	.250	.135	.041	.240	.132	.040	.231	.128	.040		
4.0	.247	.128	.038	.242	.127	.037	.233	.123	.037	.224	.120	.036	.216	.118	.036		
5.0	.229	.117	.034	.225	.115	.034	.217	.113	.033	.209	.110	.033	.202	.108	.032		
6.0	.213	.107	.031	.209	.106	.030	.202	.104	.030	.195	.101	.030	.189	.099	.030		
7.0	.199	.098	.028	.195	.097	.028	.189	.095	.027	.183	.094	.027	.177	.092	.027		
8.0	.186	.091	.026	.183	.090	.025	.177	.088	.025	.171	.087	.025	.166	.085	.025		
9.0	.174	.084	.024	.172	.084	.023	.166	.082	.023	.161	.081	.023	.157	.080	.023		
10.0	.164	.079	.022	.162	.078	.022	.157	.077	.022	.152	.076	.022	.148	.075	.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	.179	.156	.136	.153	.134	.117	.105	.092	.081	.060	.053	.047	.019	.017	.015		
2.0	.171	.132	.099	.147	.114	.086	.100	.079	.060	.058	.046	.035	.019	.015	.011		
3.0	.164	.114	.075	.140	.099	.065	.096	.068	.046	.056	.040	.027	.018	.013	.009		
4.0	.156	.101	.059	.134	.087	.051	.092	.061	.036	.053	.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	.003		
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: 45.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators:
 Test Date: 2023-07-26

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.295T
 Humidity: 65.0%
 Test Distance: 9.460m [K=1.0000]
 Remarks:

UGR(Unified Glare Rating) Table

Test:U:220.7V I:0.3890A P:83.90W PF:0.9770 Lamp Flux:12089.4x1 lm											
NAME: UNF-20210015-TDC 上 5000K						TYPE:		WEIGHT:			
SPEC.:						DIM.:		SERIAL No.:			
MFR.:						SUR.:		Shielding 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	24.2	25.7	24.5	25.9	26.1	24.9	26.4	25.2	26.6	26.8	
	3H	25.5	26.9	25.8	27.1	27.3	26.0	27.4	26.3	27.7	27.9
	4H	25.8	27.2	26.2	27.4	27.7	26.3	27.6	26.6	27.9	28.1
	6H	26.0	27.2	26.3	27.5	27.8	26.4	27.6	26.7	27.9	28.2
	8H	26.0	27.2	26.3	27.5	27.8	26.3	27.5	26.7	27.8	28.1
	12H	26.0	27.1	26.3	27.4	27.7	26.3	27.4	26.6	27.7	28.0
4H	2H	24.9	26.3	25.3	26.5	26.8	25.5	26.8	25.8	27.1	27.3
	3H	26.4	27.5	26.7	27.8	28.1	26.8	27.9	27.1	28.2	28.5
	4H	26.8	27.9	27.2	28.2	28.5	27.1	28.2	27.5	28.5	28.8
	6H	27.0	28.0	27.4	28.3	28.7	27.3	28.2	27.6	28.5	28.9
	8H	27.1	27.9	27.5	28.3	28.7	27.2	28.1	27.7	28.5	28.9
	12H	27.1	27.8	27.5	28.2	28.6	27.2	28.0	27.6	28.4	28.8
8H	4H	27.0	27.9	27.4	28.2	28.6	27.3	28.2	27.7	28.5	28.9
	6H	27.3	28.0	27.8	28.4	28.9	27.5	28.2	27.9	28.6	29.0
	8H	27.4	28.0	27.8	28.4	28.9	27.5	28.1	28.0	28.6	29.0
	12H	27.4	27.9	27.9	28.4	28.9	27.5	28.0	28.0	28.5	28.9
12H	4H	27.0	27.8	27.4	28.2	28.6	27.3	28.1	27.7	28.5	28.9
	6H	27.3	28.0	27.8	28.4	28.8	27.5	28.1	28.0	28.6	29.0
	8H	27.4	27.9	27.9	28.4	28.9	27.5	28.1	28.0	28.5	29.0
Variations with the observer position at spacings:											
S = 1.0H	+ 0.2 / - 0.3					+ 0.2 / - 0.3					
1.5H	+ 0.3 / - 0.5					+ 0.3 / - 0.5					
2.0H	+ 0.3 / - 0.6					+ 0.3 / - 0.5					

CIE Pub.117 Corrected 12089 lm Total Lamp Luminous Flux.(8log(F/F0) = 8.7)

C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:2023-07-26

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295T
 Humidity:65.0%
 Test Distance:9.460m [K=1.0000]
 Remarks:

UTILIZATION FACTORS TABLE

Test:U:220.7V I:0.3890A P:83.90W PF:0.9770 Lamp Flux:12089.4x1 lm		
NAME: UNF-20210015-TDC 上 5000K	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

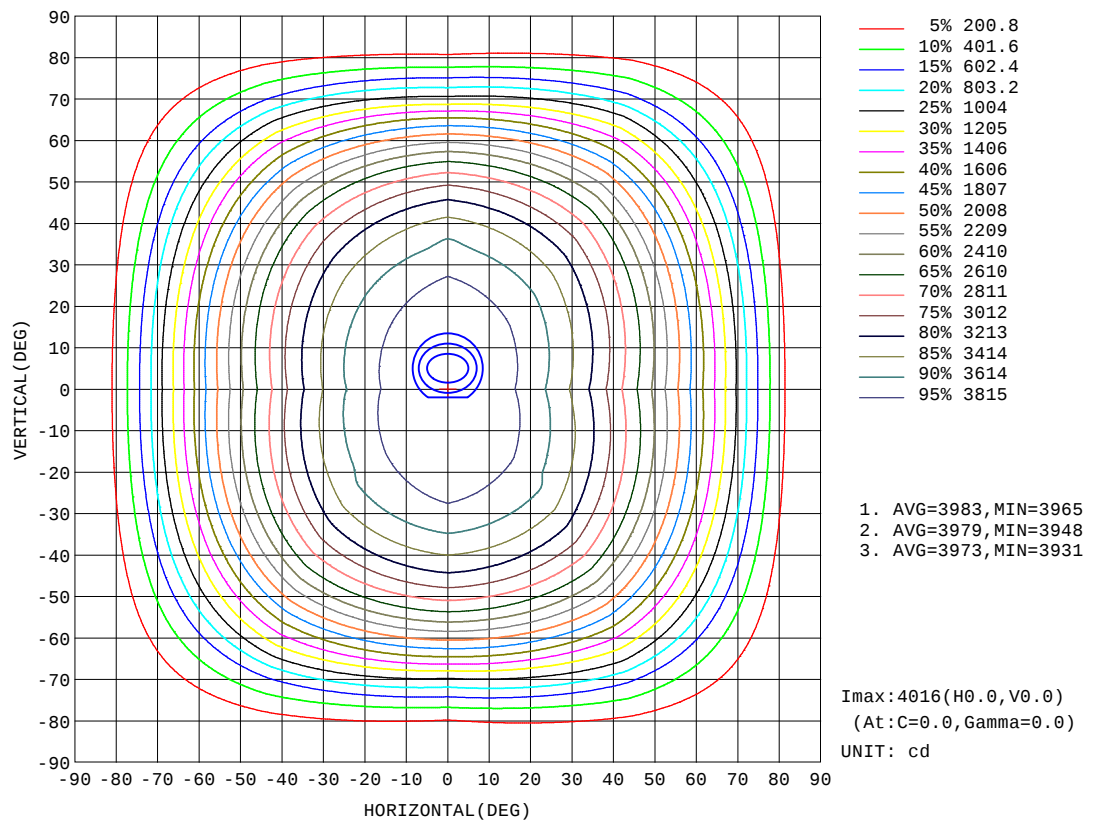
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	60	47	38	58	46	38	56	45	37	30
0.80	70	57	48	68	56	48	65	54	47	39
1.00	78	66	57	76	64	56	72	62	55	47
1.25	85	74	65	83	72	65	79	70	63	54
1.50	90	80	72	88	78	71	83	76	69	60
2.00	97	89	82	95	87	81	90	84	78	69
2.50	101	94	87	99	92	86	94	88	84	74
3.00	104	97	92	101	95	90	97	92	87	78
4.00	108	102	98	105	100	96	100	96	93	83
5.00	110	105	102	107	103	100	102	99	96	86
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004			Ceiling Mounted					SHRNOM = 1.00		

C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators:
 Test Date: 2023-07-26

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE G0-2000A_V1 SYSTEM V2.0.295T
 Humidity: 65.0%
 Test Distance: 9.460m [K=1.0000]
 Remarks:

ISOCANDELA DIAGRAM

Test:U:220.7V I:0.3890A P:83.90W PF:0.9770 Lamp Flux:12089.4x1 lm		
NAME: UNF-20210015-TDC 上 5000K	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:



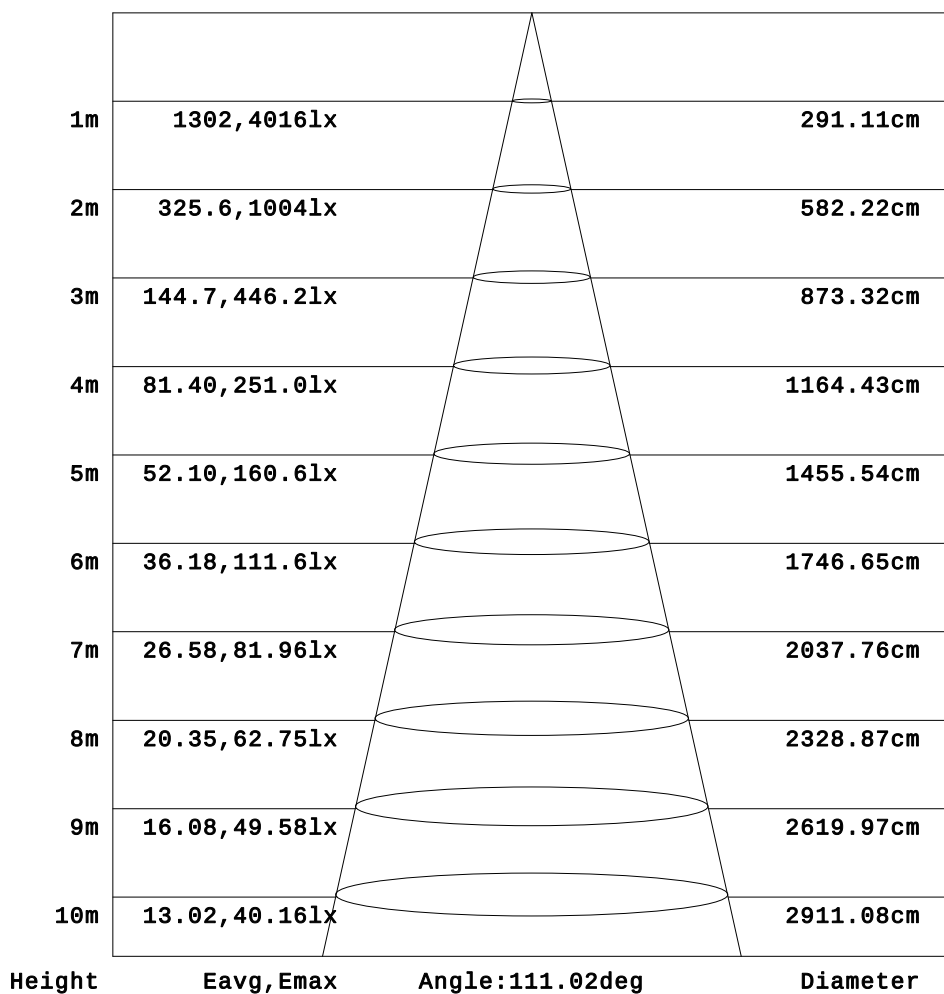
C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2023-07-26

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
Test System: EVERFINE G0-2000A_V1 SYSTEM V2.0.295T
Humidity: 65.0%
Test Distance: 9.460m [K=1.0000]
Remarks:

AAI Figure

Test:U:220.7V I:0.3890A P:83.90W PF:0.9770 Lamp Flux:12089.4x1 lm		
NAME: UNF-20210015-TDC 上 5000K	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

Flux out:8993 lm



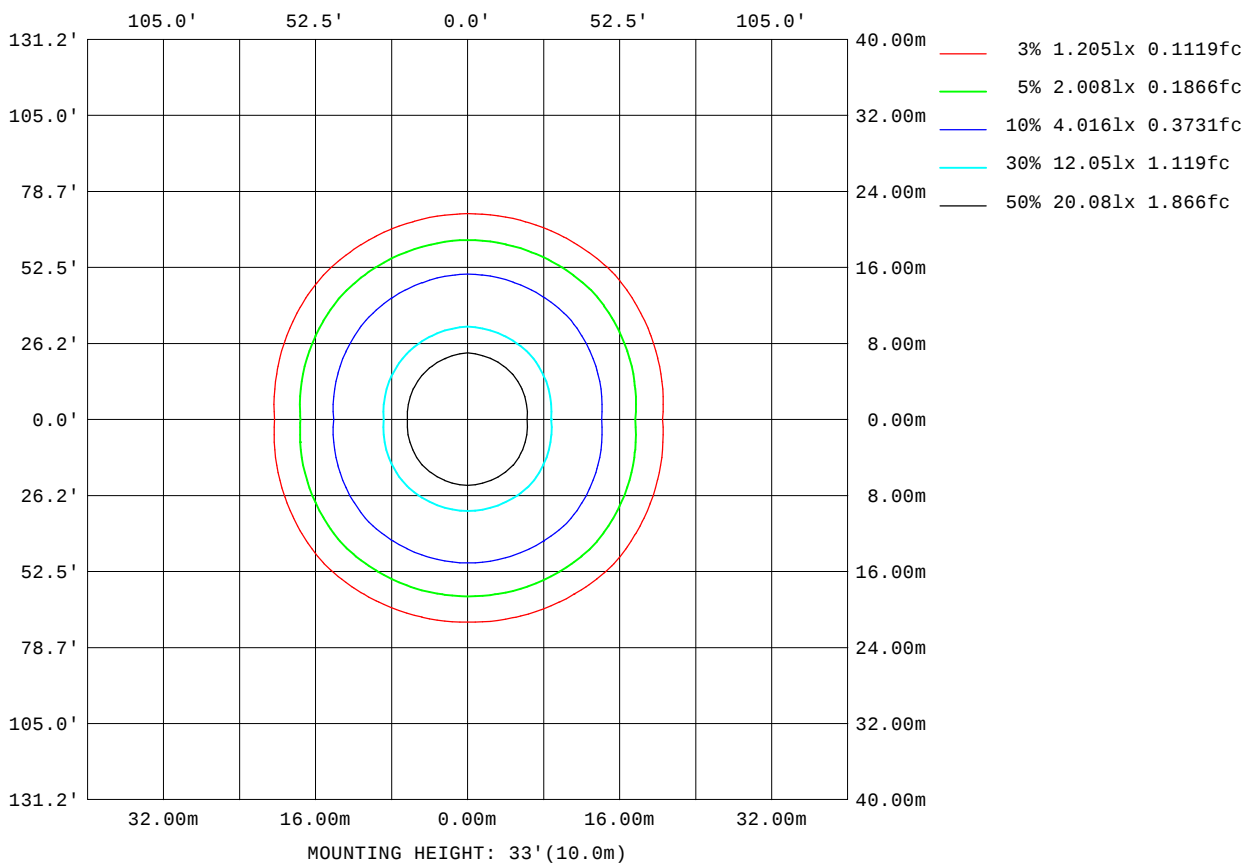
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:2023-07-26

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE G0-2000A_V1 SYSTEM V2.0.295T
 Humidity:65.0%
 Test Distance:9.460m [K=1.0000]
 Remarks:

ISOLUX DIAGRAM

Test:U:220.7V I:0.3890A P:83.90W PF:0.9770 Lamp Flux:12089.4x1 lm		
NAME: UNF-20210015-TDC 上 5000K	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:



C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators:
 Test Date: 2023-07-26

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE G0-2000A_V1 SYSTEM V2.0.295T
 Humidity: 65.0%
 Test Distance: 9.460m [K=1.0000]
 Remarks:

LED Avg.L Report

Test:U:220.7V I:0.3890A P:83.90W PF:0.9770 Lamp Flux:12089.4x1 lm		
NAME: UNF-20210015-TDC 上 5000K	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

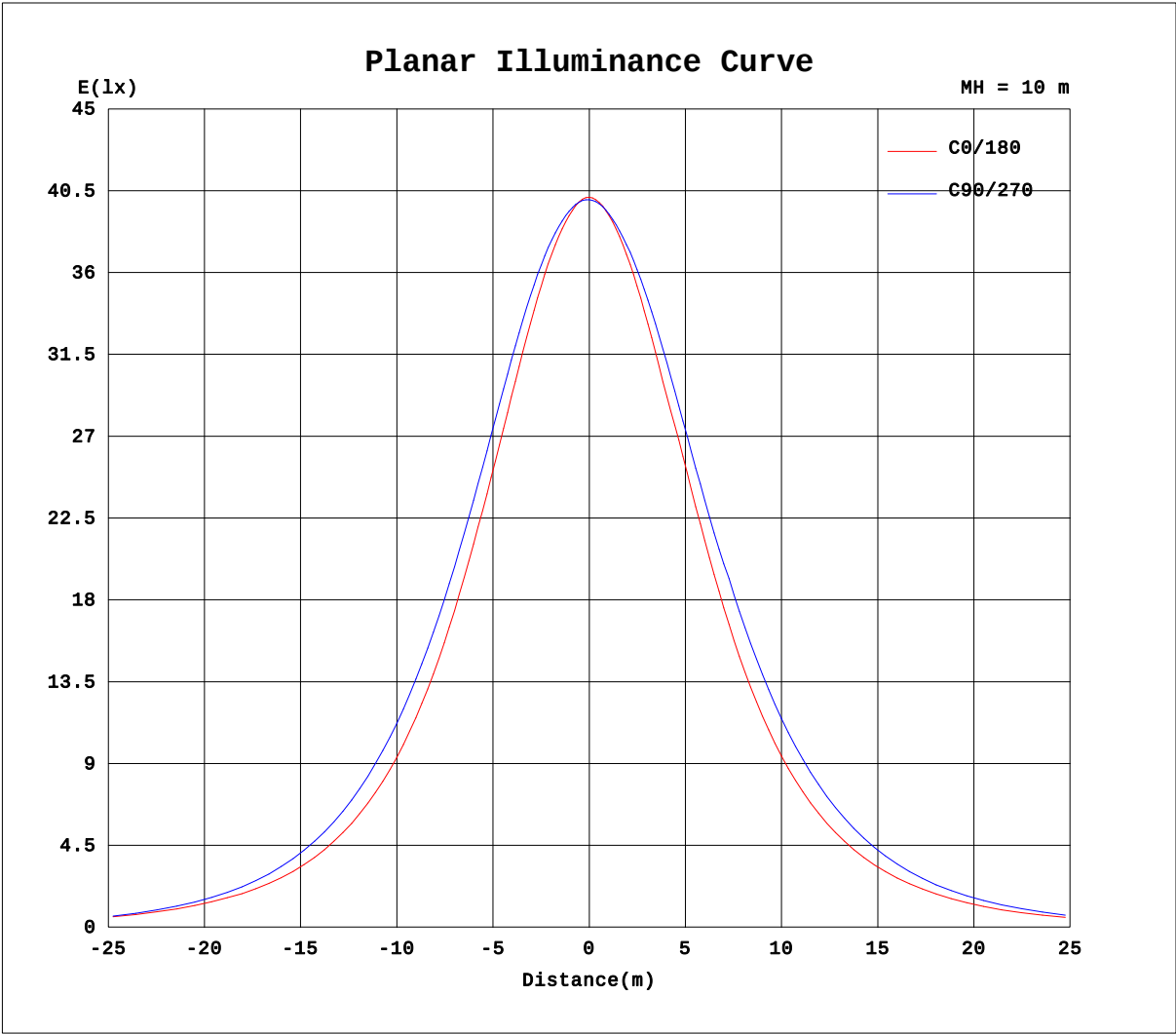
AvgL	cd/m2
L_0~180(65)av	21073
L_0~180(75)av	14892
L_0~180(85)av	4665
L_90~270(65)av	25543
L_90~270(75)av	14862
L_90~270(85)av	2489
L_45(65)av	25886
L_45(75)av	17735
L_45(85)av	4623

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2023-07-26

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
Test System:EVERFINE G0-2000A_V1 SYSTEM V2.0.295T
Humidity:65.0%
Test Distance:9.460m [K=1.0000]
Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2023-07-26

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
Test System:EVERFINE G0-2000A_V1 SYSTEM V2.0.295T
Humidity:65.0%
Test Distance:9.460m [K=1.0000]
Remarks: