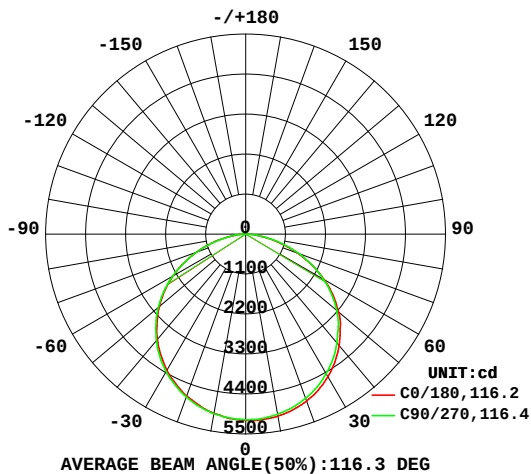


LUMINAIRE PHOTOMETRIC TEST REPORT

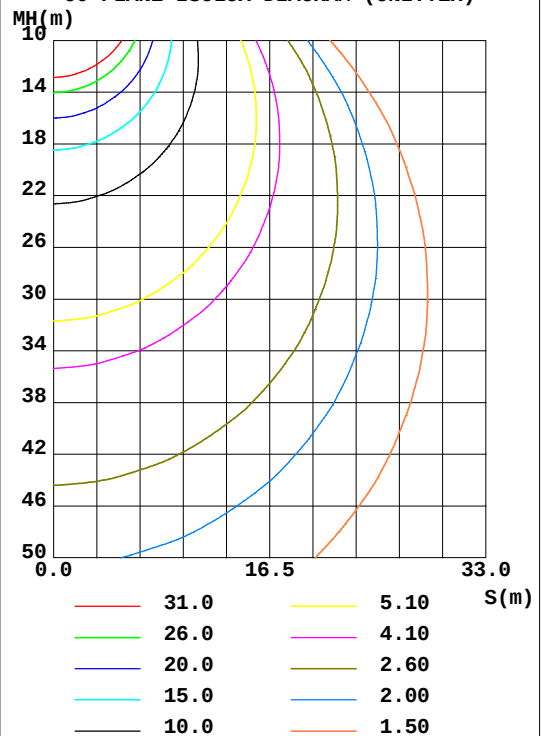
Test:U:220.7V I:0.4520A P:98.10W PF:0.9840 Lamp Flux:15110.4x1 lm		
NAME: UNF-20210015-TDC 5000K	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 154.03 lm/W			
MODEL		I _{max} (cd)	5131	S/MH(C0/180)	1.31
NOMINAL POWER(W)		LOR(%)	100.0	S/MH(C90/270)	1.29
RATED VOLTAGE(V)	220.0	TOTAL FLUX(lm)	15110	η UP, DN(C0-180)	0.0,49.2
NOMINAL FLUX(lm)	15110.4	CIE CLASS	DIRECT	η UP, DN(C180-360)	0.0,50.8
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	1.25
TEST VOLTAGE(V)	220.0	η down(%)	100.0	CIBSE SHR MAX	1.35

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2023-07-19

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	5007	5003	5019	5039	5087	5068	5037	4998	0- 10	484.0	484.0	3.2, 3.2
20	4746	4741	4774	4824	4890	4864	4813	4745	10- 20	1393	1877	12.4, 12.4
30	4332	4340	4373	4454	4531	4505	4434	4356	20- 30	2132	4010	26.5, 26.5
40	3783	3790	3823	3914	3999	3973	3904	3843	30- 40	2606	6616	43.8, 43.8
50	3100	3155	3140	3272	3341	3289	3274	3175	40- 50	2751	9367	62, 62
60	2301	2343	2323	2424	2488	2469	2466	2369	50- 60	2522	11889	78.7, 78.7
70	1431	1443	1415	1466	1504	1531	1540	1468	60- 70	1921	13811	91.4, 91.4
80	504.2	544.8	507.9	518.6	538.4	575.6	612.4	589.6	70- 80	1056	14867	98.4, 98.4
90	10.65	12.42	9.162	9.998	10.25	12.19	18.20	24.54	80- 90	243.6	15110	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): 7994.7 lm

%lum = 52.9%

%lamp = 52.9%

Conical surface Flux(120deg): 11889 lm

%lum = 78.7%

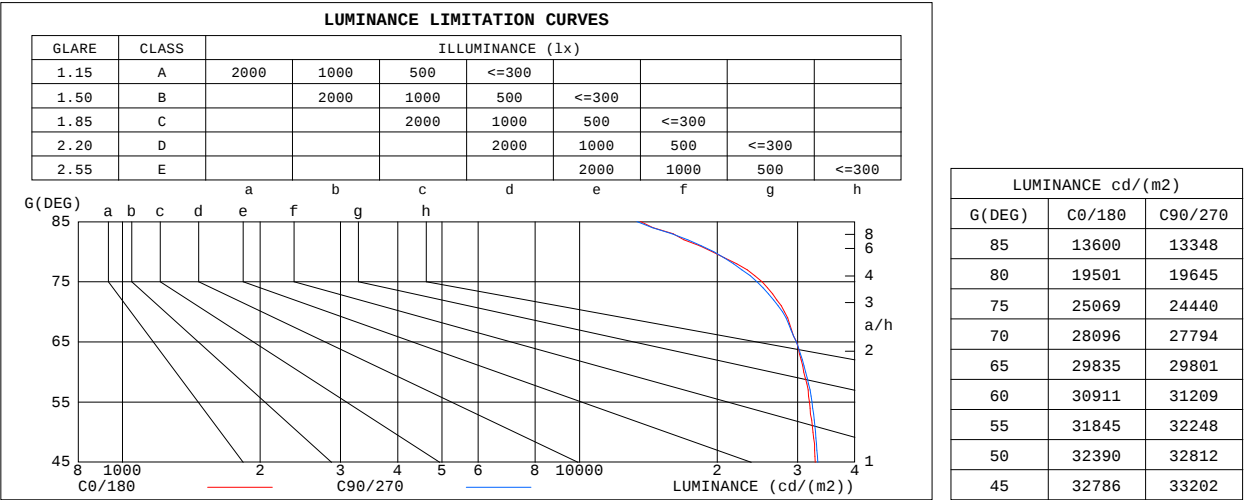
%lamp = 78.7%

C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:2023-07-19

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:0.4520A P:98.10W PF:0.9840 Lamp Flux:15110.4x1 lm		
NAME: UNF-20210015-TDC 5000K	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:



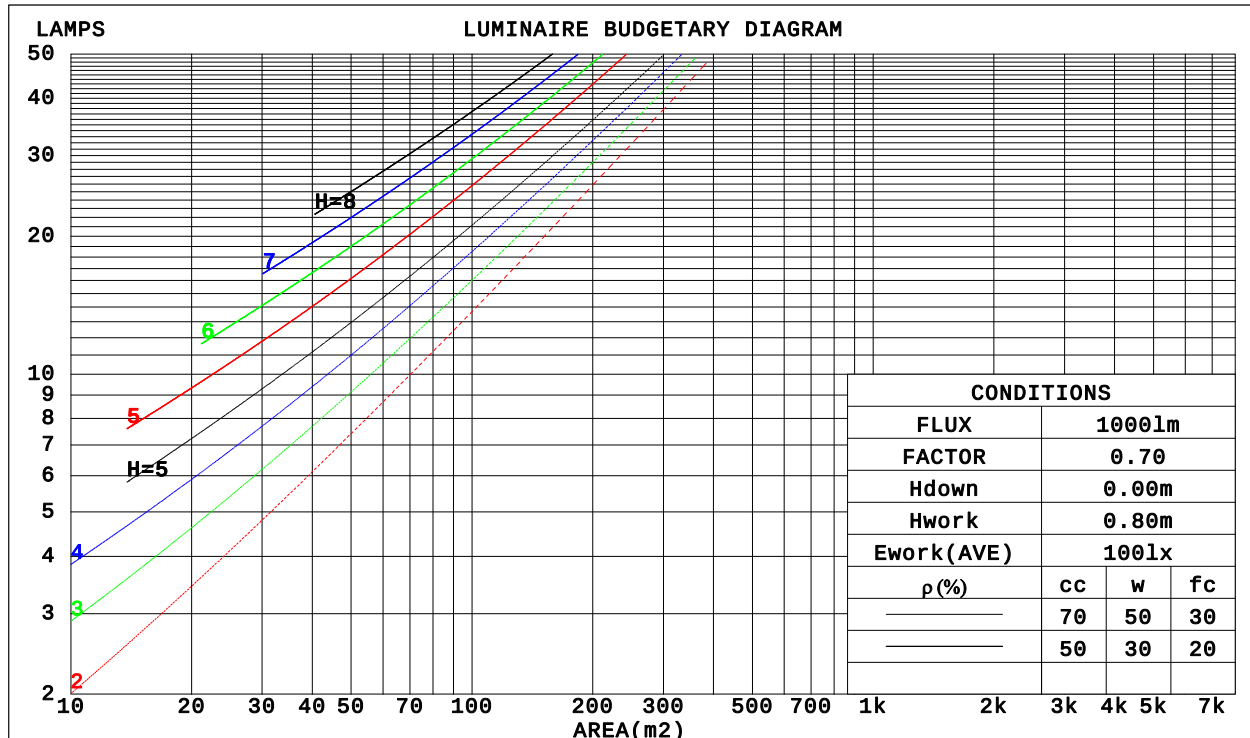
C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:2023-07-19

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:0.4520A P:98.10W PF:0.9840 Lamp Flux:15110.4x1 lm		
NAME: UNF-20210015-TDC 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	1.04	.90	.96	1.02	.98	.94	.97	.94	.91	.93	.91	.88	.90	.88	.86	.84	
2.0	.90	.83	.78	.88	.82	.77	.85	.80	.75	.82	.77	.73	.79	.75	.72	.69	
3.0	.79	.71	.64	.78	.70	.64	.75	.68	.63	.72	.66	.62	.69	.65	.60	.58	
4.0	.70	.61	.54	.69	.60	.54	.66	.59	.53	.64	.58	.52	.62	.56	.52	.50	
5.0	.62	.53	.47	.61	.53	.46	.59	.52	.46	.57	.51	.45	.55	.49	.45	.43	
6.0	.56	.47	.41	.55	.47	.40	.53	.46	.40	.52	.45	.40	.50	.44	.39	.37	
7.0	.51	.42	.36	.50	.42	.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: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2023-07-19

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:

WEC AND CCEC

Test:U:220.7V I:0.4520A P:98.10W PF:0.9840 Lamp Flux:15110.4x1 lm					
NAME: UNF-20210015-TDC 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	.309	.176	.056	.302	.172	.055	.289	.166	.053	.276	.159	.051	.265	.154	.050		
2.0	.292	.160	.049	.286	.158	.049	.274	.153	.047	.264	.148	.046	.254	.143	.045		
3.0	.271	.144	.043	.266	.142	.043	.255	.138	.042	.246	.135	.041	.237	.131	.041		
4.0	.250	.130	.038	.246	.128	.038	.236	.125	.037	.228	.122	.037	.220	.119	.036		
5.0	.232	.118	.034	.227	.117	.034	.219	.114	.034	.211	.112	.033	.204	.109	.033		
6.0	.215	.108	.031	.211	.107	.031	.204	.104	.030	.197	.102	.030	.190	.100	.030		
7.0	.200	.099	.028	.196	.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	.149	.075	.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	.190	.190	.190	.163	.163	.163	.111	.111	.111	.064	.064	.064	.020	.020	.020		
1.0	.180	.156	.134	.154	.134	.116	.105	.092	.080	.061	.053	.047	.019	.017	.015		
2.0	.172	.132	.098	.148	.114	.085	.101	.079	.059	.058	.046	.035	.019	.015	.011		
3.0	.165	.114	.074	.141	.099	.064	.097	.069	.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	.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	.014	.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	.019	.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:2023-07-19

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:0.4520A P:98.10W PF:0.9840 Lamp Flux:15110.4x1 lm											
NAME: UNF-20210015-TDC 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	24.9	26.4	25.2	26.6	26.8	24.9	26.5	25.2	26.7	26.9	
	3H	26.4	27.8	26.7	28.1	28.3	26.4	27.8	26.7	28.1	28.3
	4H	27.0	28.3	27.3	28.6	28.8	27.0	28.3	27.3	28.6	28.8
	6H	27.3	28.6	27.6	28.8	29.1	27.3	28.6	27.6	28.8	29.1
	8H	27.4	28.6	27.7	28.9	29.2	27.4	28.6	27.7	28.9	29.2
	12H	27.4	28.6	27.7	28.9	29.2	27.4	28.5	27.7	28.8	29.1
4H	2H	25.5	26.9	25.8	27.1	27.4	25.6	26.9	25.9	27.2	27.4
	3H	27.2	28.4	27.6	28.7	29.0	27.2	28.4	27.6	28.7	29.0
	4H	27.9	29.0	28.3	29.3	29.6	27.9	28.9	28.2	29.3	29.6
	6H	28.3	29.3	28.7	29.6	30.0	28.3	29.3	28.7	29.6	30.0
	8H	28.4	29.3	28.8	29.7	30.1	28.4	29.3	28.8	29.7	30.1
	12H	28.5	29.3	28.9	29.7	30.1	28.5	29.3	28.9	29.7	30.1
8H	4H	28.1	29.0	28.5	29.4	29.8	28.1	29.0	28.5	29.4	29.8
	6H	28.7	29.4	29.1	29.8	30.3	28.7	29.4	29.1	29.8	30.2
	8H	28.9	29.5	29.3	29.9	30.4	28.8	29.5	29.3	29.9	30.4
	12H	29.0	29.5	29.4	30.0	30.5	28.9	29.5	29.4	30.0	30.4
12H	4H	28.1	29.0	28.6	29.3	29.7	28.1	28.9	28.5	29.3	29.7
	6H	28.7	29.4	29.2	29.8	30.3	28.7	29.4	29.2	29.8	30.2
	8H	28.9	29.5	29.4	29.9	30.4	28.9	29.5	29.4	29.9	30.4
Variations with the observer position at spacings:											
S = 1.0H	+ 0.2 / - 0.2					+ 0.2 / - 0.2					
1.5H	+ 0.2 / - 0.4					+ 0.2 / - 0.3					
2.0H	+ 0.2 / - 0.3					+ 0.2 / - 0.3					

CIE Pub.117 Corrected 15110 lm Total Lamp Luminous Flux.(8log(F/F0) = 9.4)

C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:2023-07-19

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:0.4520A P:98.10W PF:0.9840 Lamp Flux:15110.4x1 lm		
NAME: UNF-20210015-TDC 5000K	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

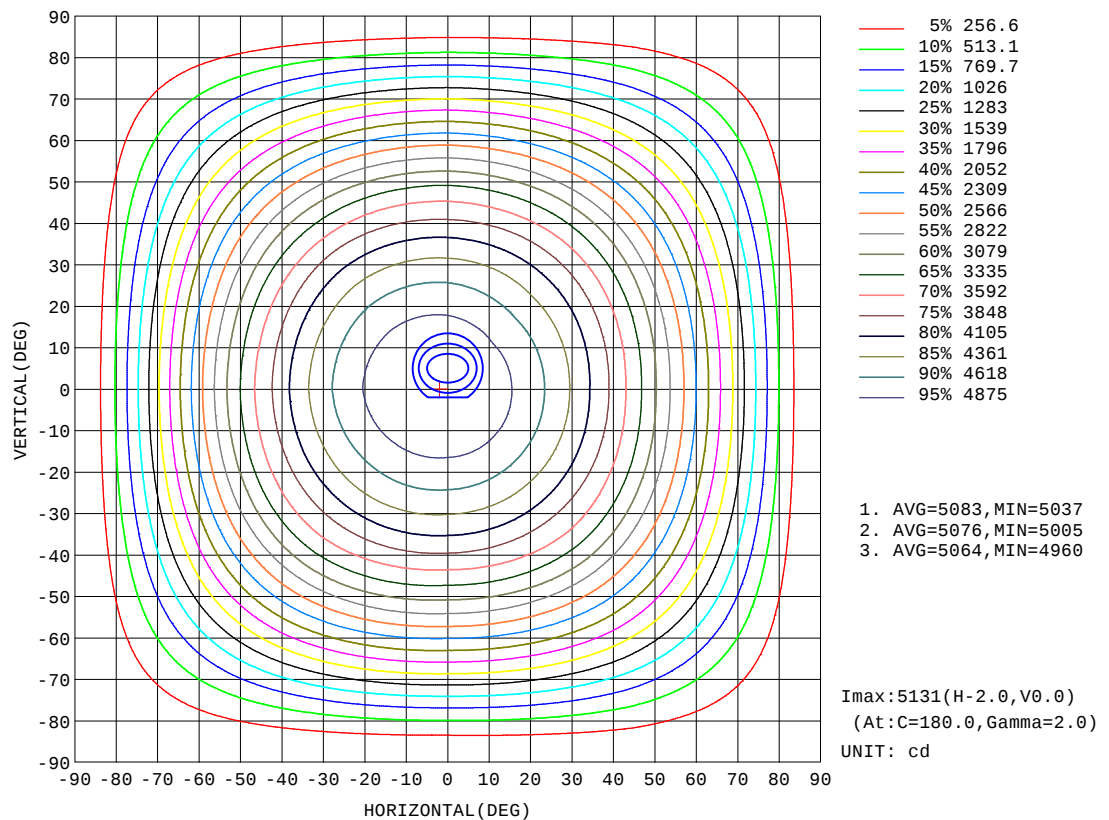
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	60	46	38	58	46	38	55	44	37	30
0.80	70	57	48	68	56	47	65	54	47	38
1.00	77	65	56	75	64	56	71	62	55	46
1.25	84	73	64	82	72	64	78	69	62	53
1.50	89	79	71	87	77	70	83	75	68	59
2.00	96	88	81	94	86	79	89	83	77	68
2.50	100	93	86	98	91	85	93	87	82	73
3.00	103	97	91	101	94	89	96	91	86	76
4.00	107	102	97	104	99	95	99	95	92	82
5.00	109	105	101	107	103	99	102	98	95	85
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: 2023-07-19

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:0.4520A P:98.10W PF:0.9840 Lamp Flux:15110.4x1 lm		
NAME: UNF-20210015-TDC 5000K	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:



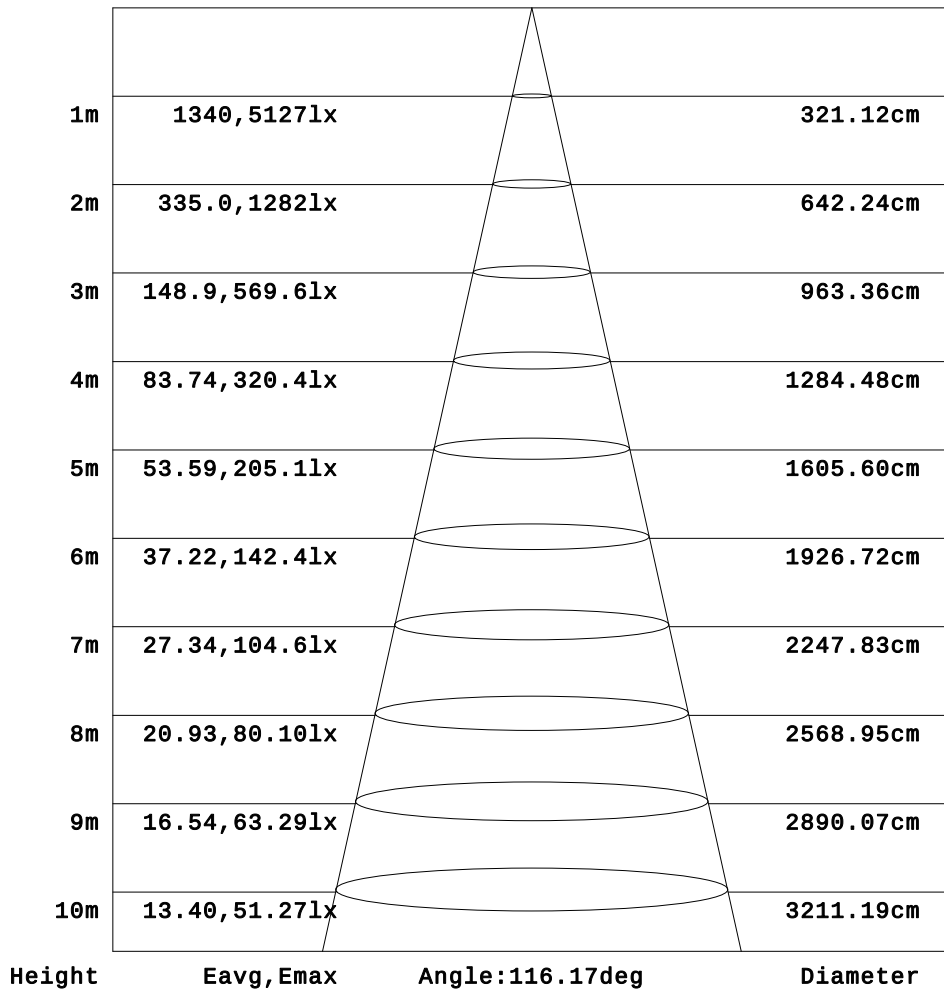
C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2023-07-19

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:0.4520A P:98.10W PF:0.9840 Lamp Flux:15110.4x1 lm		
NAME: UNF-20210015-TDC 5000K	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

Flux out:11659 lm



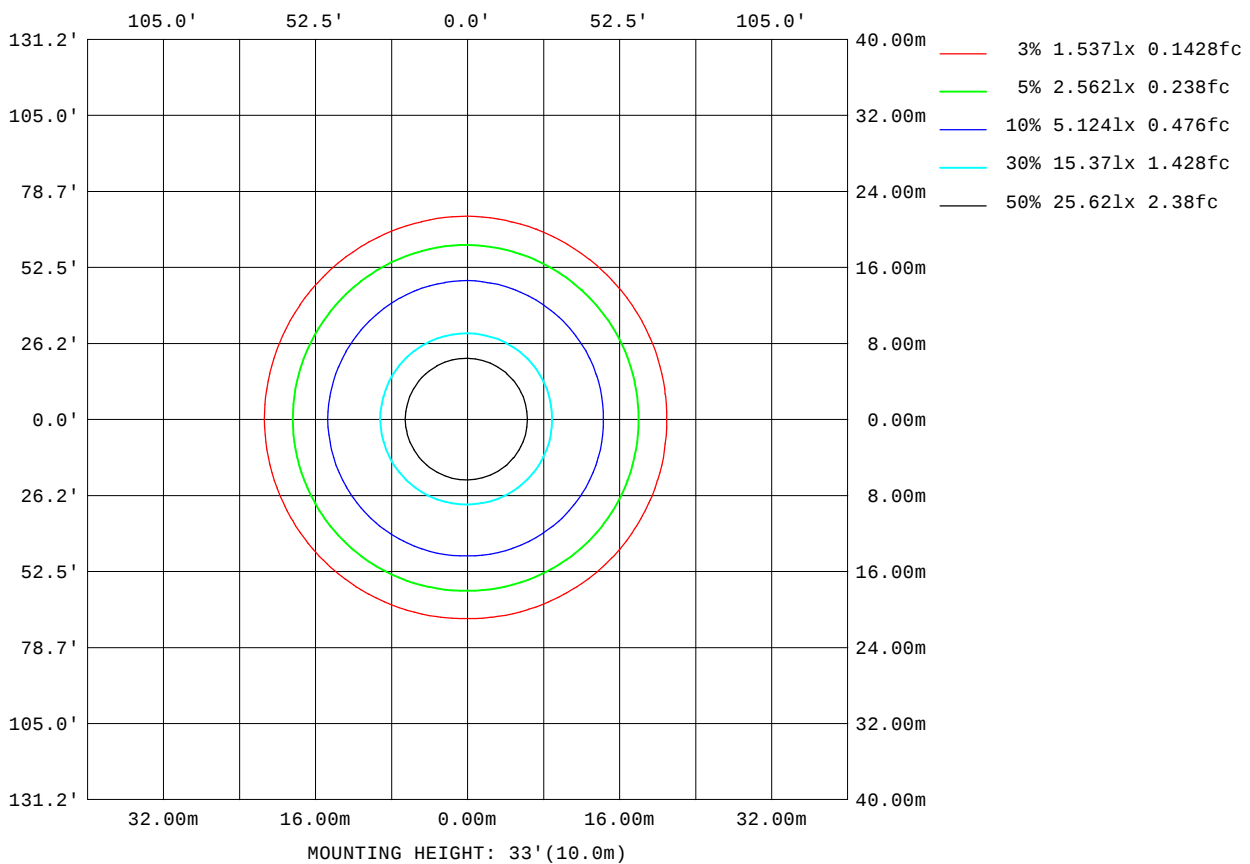
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators:
 Test Date: 2023-07-19

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:0.4520A P:98.10W PF:0.9840 Lamp Flux:15110.4x1 lm		
NAME: UNF-20210015-TDC 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: 2023-07-19

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:0.4520A P:98.10W PF:0.9840 Lamp Flux:15110.4x1 lm		
NAME: UNF-20210015-TDC 5000K	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

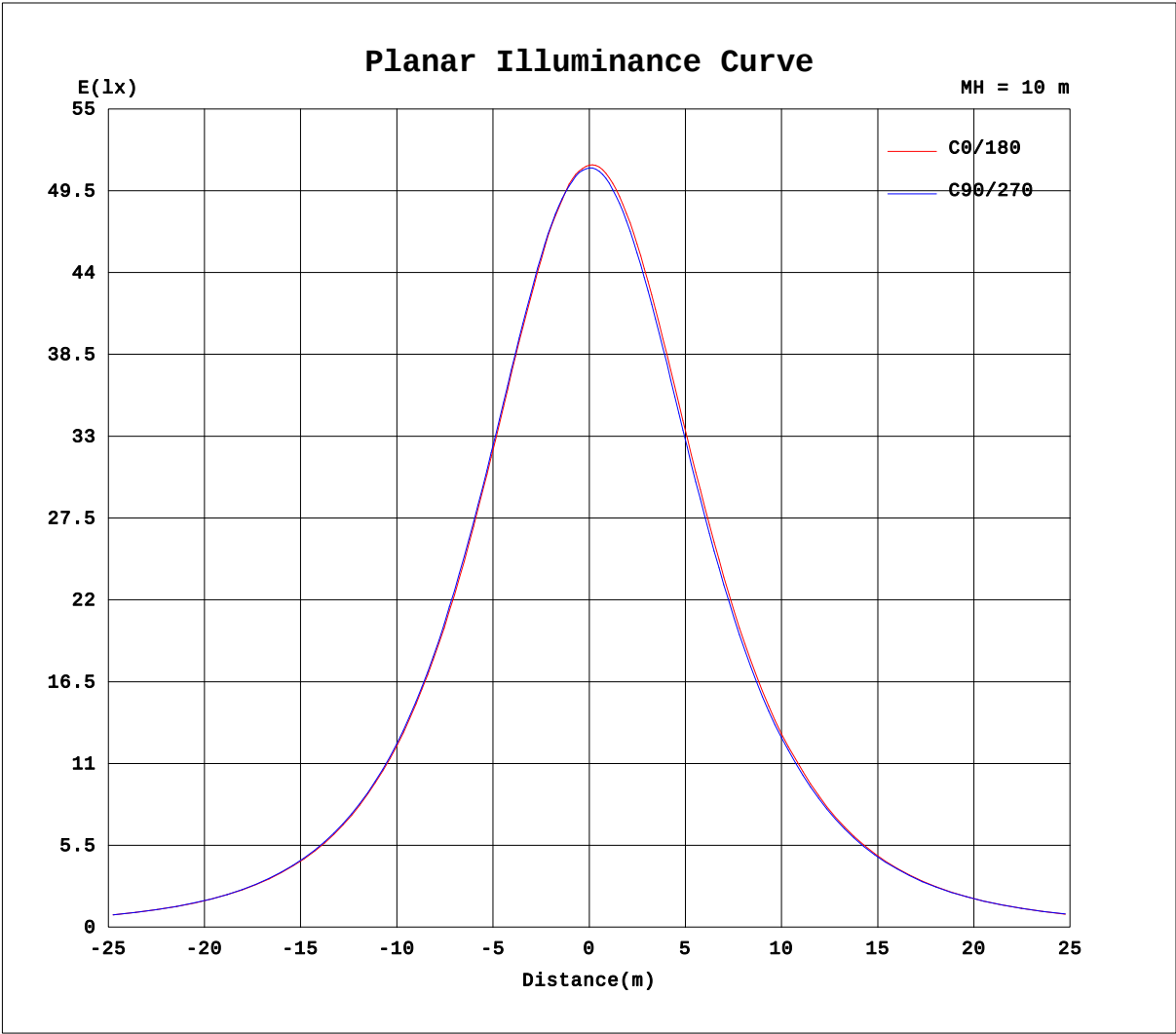
AvgL	cd/m2
L_0~180(65)av	30884
L_0~180(75)av	25459
L_0~180(85)av	13508
L_90~270(65)av	30880
L_90~270(75)av	26021
L_90~270(85)av	16101
L_45(65)av	30979
L_45(75)av	26005
L_45(85)av	15815

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2023-07-19

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:2023-07-19

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: