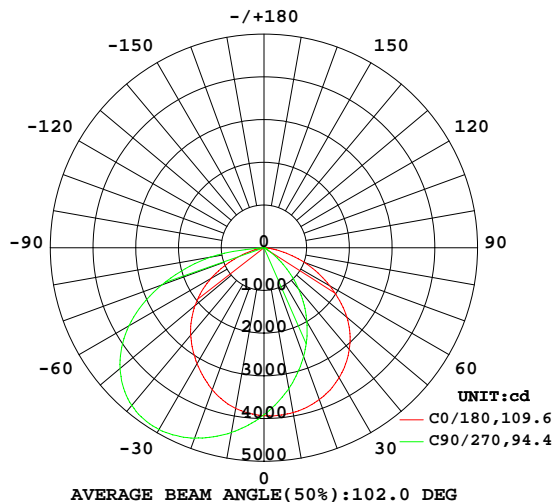


## LUMINAIRE PHOTOMETRIC TEST REPORT

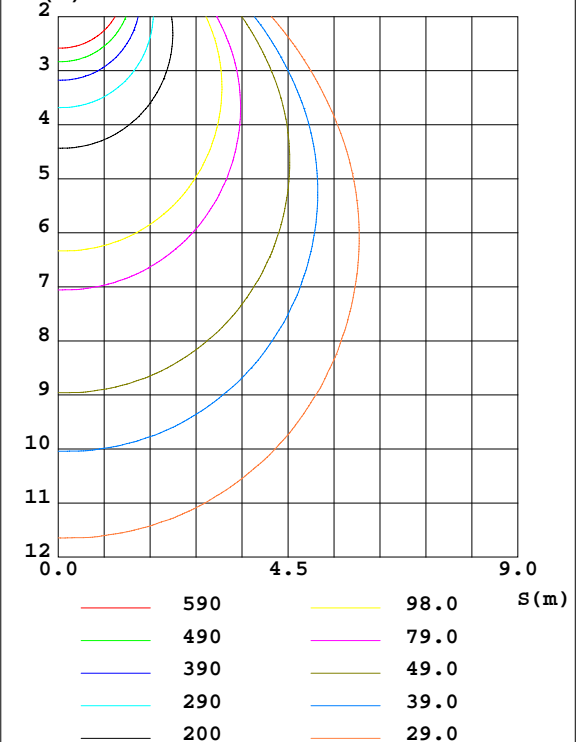
Test:U:229.62V I:0.4394A P:99.143W PF:0.9826 Freq:49.99Hz Lamp Flux:11219x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.: 620*160*28	SERIAL No.:
MFR.: NLD-24-2028	SUR.:0.4*0.126	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 113.16 lm/W			
MODEL		Imax(cd)	4918	S/MH(C0/180)	1.19
NOMINAL POWER(W)	88	LOR(%)	100.0	S/MH(C90/270)	1.80
RATED VOLTAGE(V)	230.0	TOTAL FLUX(lm)	11219	$\eta$ UP,DN(C0-180)	0.0,28.6
NOMINAL FLUX(lm)	11219	CIE CLASS	DIRECT	$\eta$ UP,DN(C180-360)	0.0,71.4
LAMPS INSIDE	1	$\eta$ up(%)	0.0	CIBSE SHR NOM	1.25
TEST VOLTAGE(V)	230.0	$\eta$ down(%)	100.0	CIBSE SHR MAX	1.35

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



C Range: 0 - 360DEG  
C Interval: 22.5DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:  
Test Date:2024-08-28

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 1.0DEG  
Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.406.10  
Humidity:65.0%  
Test Distance:11.700m [K=1.0000]  
Remarks:

## ZONAL FLUX DIAGRAM

## ZONAL FLUX DIAGRAM:

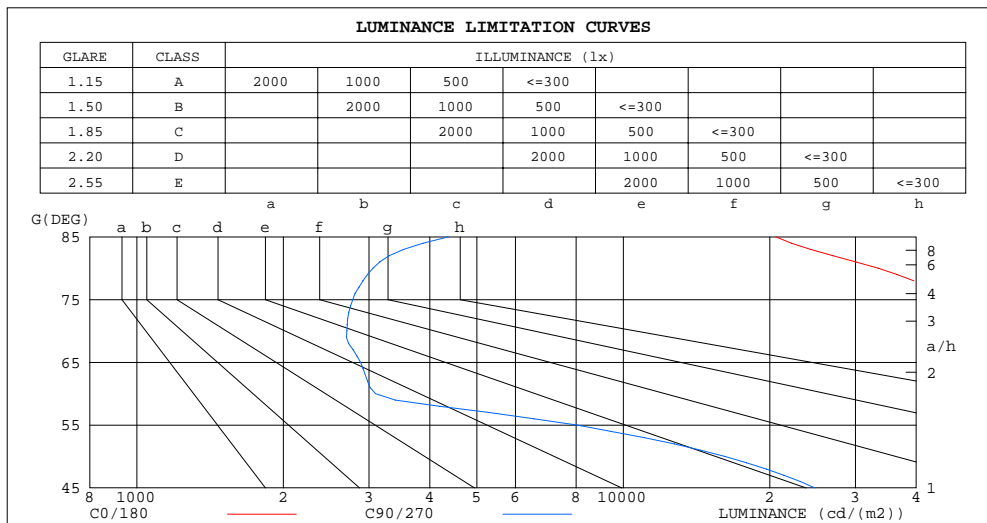
$\gamma$	C0	C45	C90	C135	C180	C225	C270	C315	$\gamma$	$\Phi$ zone	$\Phi$ total	$\Phi$ lum, lamp
10	3915	3534	3351	3452	3820	4201	4389	4266	0- 10	371.6	371.6	3.31,3.31
20	3780	3050	2712	2903	3538	4333	4743	4501	10- 20	1072	1444	12.9,12.9
30	3520	2466	2012	2249	3133	4255	4913	4564	20- 30	1640	3083	27.5,27.5
40	3106	1804	1260	1546	2670	3967	4814	4397	30- 40	1992	5075	45.2,45.2
50	2533	1087	523.9	853.9	2108	3490	4398	3966	40- 50	2059	7134	63.6,63.6
60	1775	416.2	77.98	267.5	1427	2786	3647	3221	50- 60	1812	8946	79.7,79.7
70	1007	71.17	46.58	61.40	670.2	1835	2547	2147	60- 70	1340	10286	91.7,91.7
80	292.4	39.95	26.76	33.96	131.8	736.6	1267	966.8	70- 80	758.7	11045	98.4,98.4
90	14.52	17.84	12.98	11.80	7.938	3.119	2.603	10.42	80- 90	174.1	11219	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: 22.5DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:  
Test Date:2024-08-28

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 1.0DEG  
Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.406.10  
Humidity:65.0%  
Test Distance:11.700m [K=1.0000]  
Remarks:

## LUMINANCE LIMITATION CURVES

Test:U:229.62V I:0.4394A P:99.143W PF:0.9826 Freq:49.99Hz Lamp Flux:11219x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.: 620*160*28	SERIAL No.:
MFR.: NLD-24-2028	SUR.:0.4*0.126	Shielding Angle:



LUMINANCE cd/(m2)		
G(DEG)	C0/180	C90/270
85	20579	4373
80	33409	3058
75	46982	2779
70	58398	2702
65	65542	2882
60	70428	3095
55	74840	8029
50	78182	16172
45	79849	24771

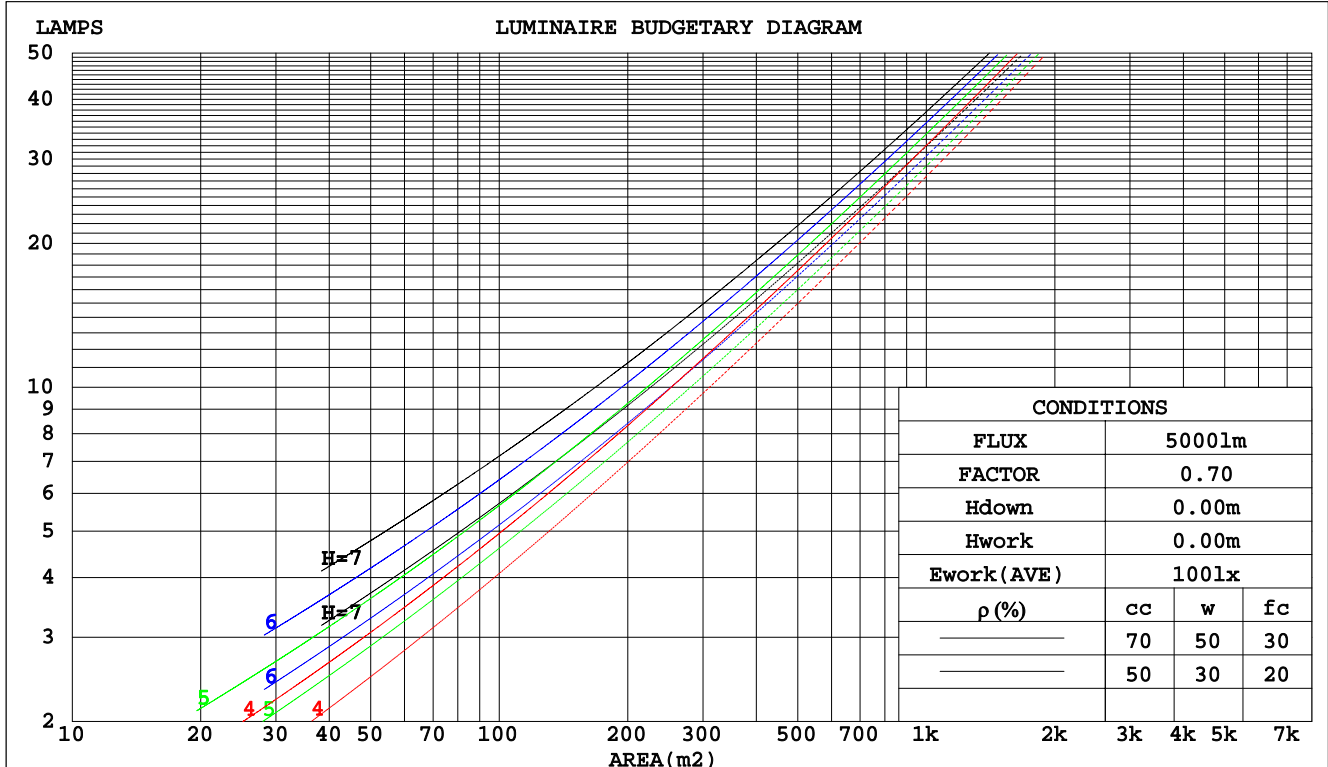
C Range: 0 - 360DEG  
C Interval: 22.5DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:  
Test Date:2024-08-28

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 1.0DEG  
Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.406.10  
Humidity:65.0%  
Test Distance:11.700m [K=1.0000]  
Remarks:

## CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:229.62V I:0.4394A P:99.143W PF:0.9826 Freq:49.99Hz Lamp Flux:11219x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.: 620*160*28	SERIAL No.:
MFR.: NLD-24-2028	SUR.:0.4*0.126	Shielding Angle:

pcc	80%			70%			50%			30%			10%			0
pw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	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	1.11	1.11	1.11	1.06	1.06	1.06	1.02	1.02	1.02	1.00
1.0	1.04	.00	.96	1.02	.98	.95	.98	.94	.92	.94	.91	.89	.90	.88	.86	.84
2.0	.91	.84	.78	.89	.83	.77	.85	.80	.76	.82	.78	.74	.79	.75	.72	.70
3.0	.80	.72	.65	.78	.71	.65	.75	.69	.63	.72	.67	.62	.70	.65	.61	.59
4.0	.71	.62	.55	.69	.61	.55	.67	.60	.54	.64	.58	.53	.62	.57	.53	.50
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	.46	.40	.51	.45	.40	.38
7.0	.51	.43	.37	.51	.42	.36	.49	.42	.36	.48	.41	.36	.46	.40	.36	.34
8.0	.47	.38	.33	.46	.38	.32	.45	.38	.32	.44	.37	.32	.43	.36	.32	.30
9.0	.43	.35	.29	.42	.35	.29	.41	.34	.29	.40	.34	.29	.39	.33	.29	.27
10.0	.40	.32	.27	.39	.32	.26	.38	.31	.26	.37	.31	.26	.36	.30	.26	.24



C Range: 0 - 360DEG  
C Interval: 22.5DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:  
Test Date:2024-08-28

γ Range: 0 - 90DEG  
γ Interval: 1.0DEG  
Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.406.10  
Humidity:65.0%  
Test Distance:11.700m [K=1.0000]  
Remarks:

## WEC AND CCEC

Test:U:229.62V I:0.4394A P:99.143W PF:0.9826 Freq:49.99Hz Lamp Flux:11219x1 lm								
NAME:			TYPE:			WEIGHT:		
SPEC.:			DIM.: 620*160*28			SERIAL No.:		
MFR.: NLD-24-2028			SUR.:0.4*0.126			Shielding Angle:		

pcc	80%			70%			50%			30%			10%			0
pw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
pfc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Wall Exitance Coefficients(WEC)									
0.0																
1.0	.304	.173	.055	.297	.170	.054	.284	.163	.052	.272	.157	.050	.261	.151	.049	
2.0	.288	.158	.048	.282	.155	.048	.270	.150	.047	.259	.146	.046	.249	.141	.044	
3.0	.267	.142	.043	.262	.140	.042	.252	.136	.041	.242	.133	.041	.233	.129	.040	
4.0	.247	.129	.038	.242	.127	.038	.233	.124	.037	.225	.121	.036	.217	.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	.105	.030	.202	.103	.030	.195	.101	.030	.188	.099	.029	
7.0	.198	.098	.028	.195	.097	.028	.188	.095	.027	.182	.093	.027	.176	.092	.027	
8.0	.185	.090	.025	.182	.090	.025	.176	.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	.163	.078	.022	.161	.078	.022	.156	.076	.022	.152	.075	.021	.147	.074	.021	

pcc	80%			70%			50%			30%			10%			0
pw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
pfc	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	.135	.154	.134	.116	.105	.092	.080	.061	.053	.047	.019	.017	.015	
2.0	.172	.132	.098	.147	.114	.085	.101	.079	.059	.058	.046	.035	.019	.015	.011	
3.0	.164	.114	.075	.141	.099	.065	.097	.068	.045	.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	.069	.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: 22.5DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:  
Test Date:2024-08-28

γ Range: 0 - 90DEG  
γ Interval: 1.0DEG  
Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.406.10  
Humidity:65.0%  
Test Distance:11.700m [K=1.0000]  
Remarks:

UGR(Unified Glare Rating) Table

Test:U:229.62V I:0.4394A P:99.143W PF:0.9826 Freq:49.99Hz Lamp Flux:11219x1 lm											
NAME:					TYPE:			WEIGHT:			
SPEC.:					DIM.: 620*160*28			SERIAL No.:			
MFR.: NLD-24-2028					SUR.:0.4*0.126			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	25.7	27.3	26.0	27.5	27.7	18.4	19.9	18.6	20.1	20.3	
	3H	27.0	28.4	27.3	28.7	28.9	18.2	19.6	18.5	19.8	20.1
	4H	27.5	28.8	27.8	29.1	29.3	18.1	19.5	18.5	19.7	20.0
	6H	27.7	29.0	28.0	29.2	29.5	18.1	19.3	18.4	19.6	19.9
	8H	27.7	29.0	28.1	29.2	29.5	18.1	19.3	18.4	19.6	19.9
	12H	27.7	28.9	28.1	29.2	29.5	18.1	19.2	18.4	19.5	19.8
4H	2H	25.5	26.8	25.8	27.1	27.4	19.0	20.3	19.3	20.5	20.8
	3H	26.9	28.0	27.2	28.3	28.6	18.8	20.0	19.2	20.3	20.6
	4H	27.3	28.4	27.7	28.7	29.0	18.8	19.9	19.2	20.2	20.5
	6H	27.6	28.6	28.0	28.9	29.3	18.8	19.7	19.2	20.1	20.5
	8H	27.7	28.6	28.1	28.9	29.3	18.8	19.7	19.2	20.0	20.4
	12H	27.7	28.5	28.1	28.9	29.3	18.8	19.6	19.2	20.0	20.4
8H	4H	27.2	28.1	27.6	28.4	28.8	18.9	19.8	19.3	20.1	20.5
	6H	27.5	28.2	27.9	28.6	29.1	18.9	19.7	19.4	20.1	20.5
	8H	27.6	28.2	28.0	28.6	29.1	19.0	19.6	19.4	20.0	20.5
	12H	27.6	28.2	28.1	28.6	29.1	19.0	19.6	19.5	20.0	20.5
12H	4H	27.1	27.9	27.6	28.3	28.7	18.9	19.7	19.3	20.1	20.5
	6H	27.5	28.1	27.9	28.5	29.0	18.9	19.6	19.4	20.0	20.5
	8H	27.5	28.1	28.0	28.5	29.0	19.0	19.6	19.5	20.0	20.5
Variations with the observer position at spacings:											
S = 1.0H	+ 0.5 / - 0.4					+ 1.8 / - 3.6					
1.5H	+ 1.4 / - 1.5					+ 1.1 / - 2.4					
2.0H	+ 2.3 / - 3.3					+ 2.9 / - 5.4					

CIE Pub.117, 11219 lm Total Lamp Luminous Flux Corrected ( $8\log(F/F_0) = 8.4$ )

C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:  
 Test Date:2024-08-28

γ Range: 0 - 90DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.406.10  
 Humidity:65.0%  
 Test Distance:11.700m [K=1.0000]  
 Remarks:

## UTILIZATION FACTORS TABLE

Test:U:229.62V I:0.4394A P:99.143W PF:0.9826 Freq:49.99Hz Lamp Flux:11219x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.: 620*160*28	SERIAL No.:
MFR.: NLD-24-2028	SUR.:0.4*0.126	Shielding Angle:

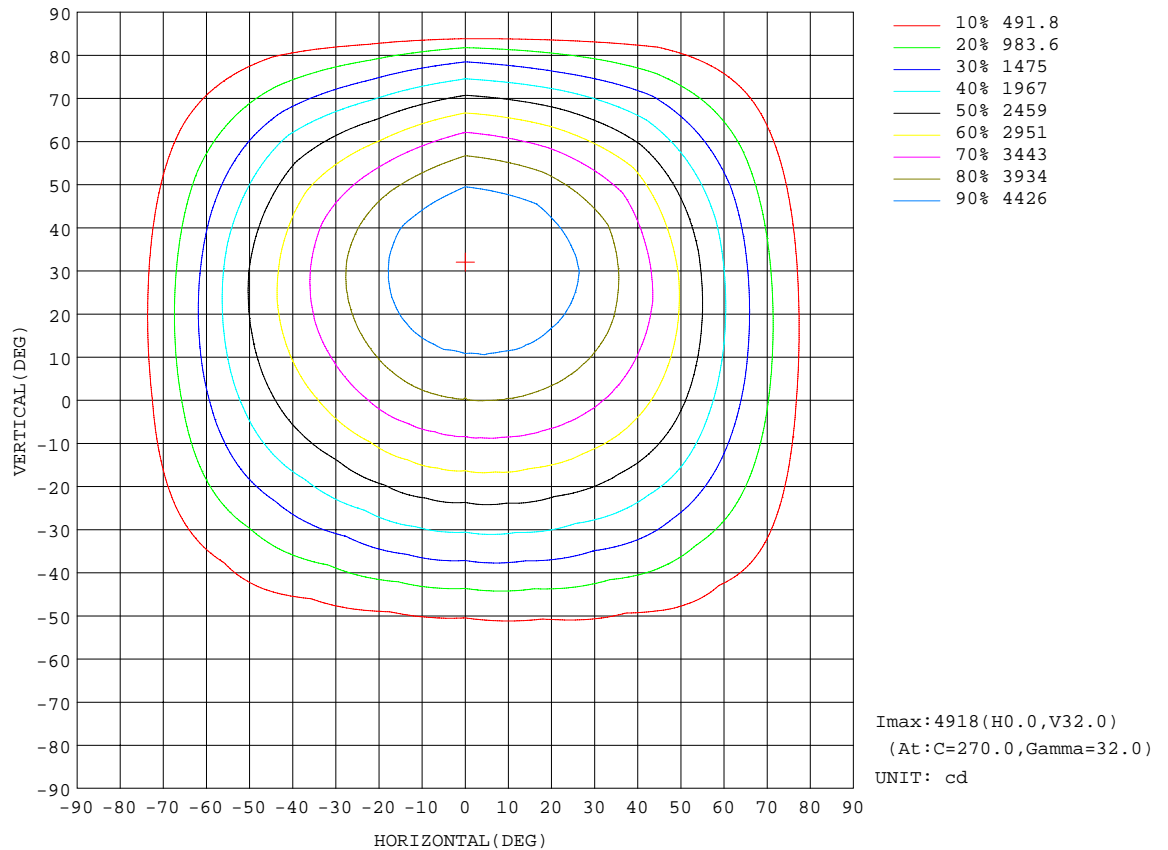
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	58	46	39	57	46	39	56	46	39	33
0.80	68	56	49	67	56	49	65	55	48	42
1.00	76	65	58	75	65	58	73	66	57	50
1.25	84	73	66	82	72	66	79	71	65	58
1.50	88	79	72	87	78	71	84	76	70	63
2.00	95	87	81	93	86	80	90	83	78	70
2.50	99	92	86	97	90	85	93	87	83	75
3.00	103	96	90	100	94	89	96	91	87	79
4.00	106	101	96	104	99	95	100	96	92	83
5.00	109	104	100	106	102	99	102	99	95	86
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:  
 Test Date:2024-08-28

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 1.0DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.406.10  
 Humidity:65.0%  
 Test Distance:11.700m [K=1.0000]  
 Remarks:

## ISOCANDELA DIAGRAM

Test:U:229.62V I:0.4394A P:99.143W PF:0.9826 Freq:49.99Hz Lamp Flux:11219x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.: 620*160*28	SERIAL No.:
MFR.: NLD-24-2028	SUR.:0.4*0.126	Shielding Angle:



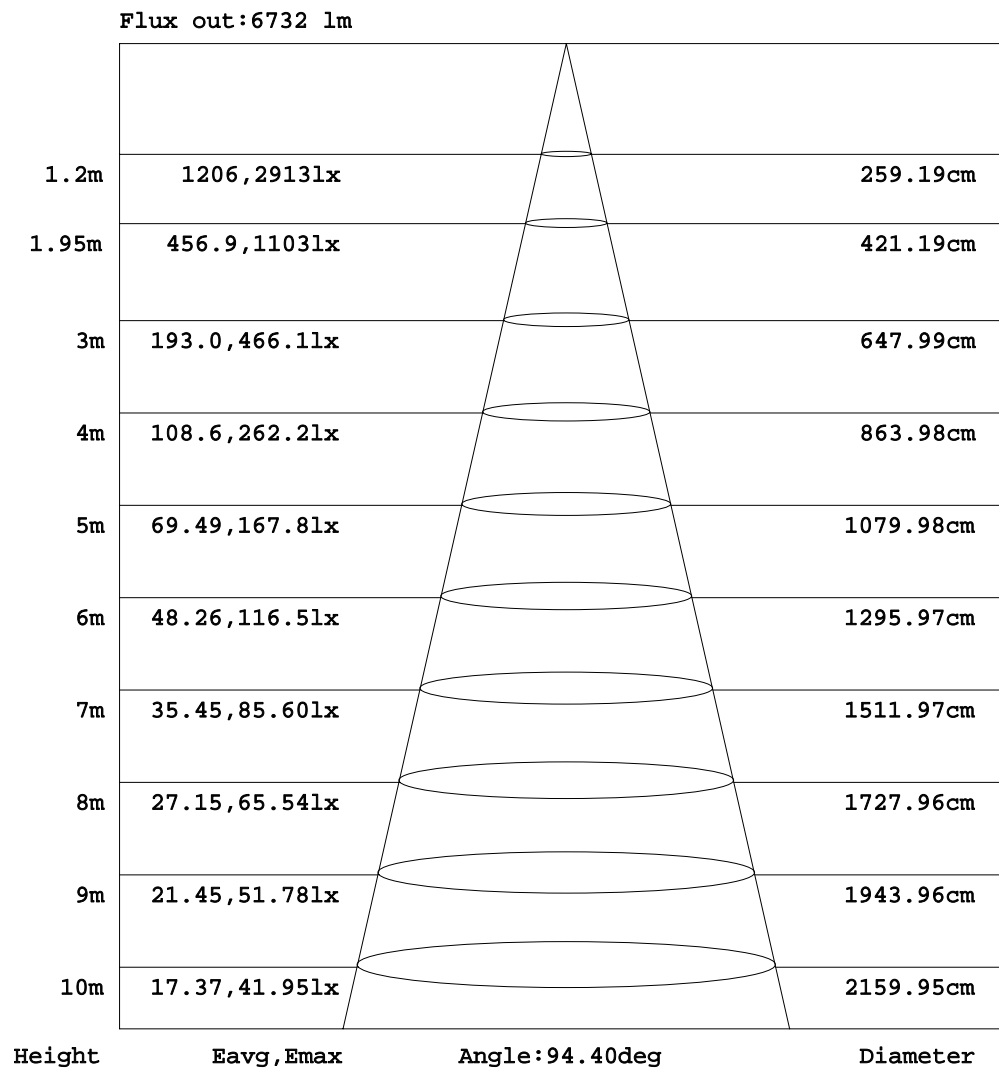
C Range: 0 - 360DEG  
C Interval: 22.5DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:  
Test Date:2024-08-28

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 1.0DEG  
Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.406.10  
Humidity:65.0%  
Test Distance:11.700m [K=1.0000]  
Remarks:



## AAI Figure

Test:U:229.62V I:0.4394A P:99.143W PF:0.9826 Freq:49.99Hz Lamp Flux:11219x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.: 620*160*28	SERIAL No.:
MFR.: NLD-24-2028	SUR.:0.4*0.126	Shielding Angle:



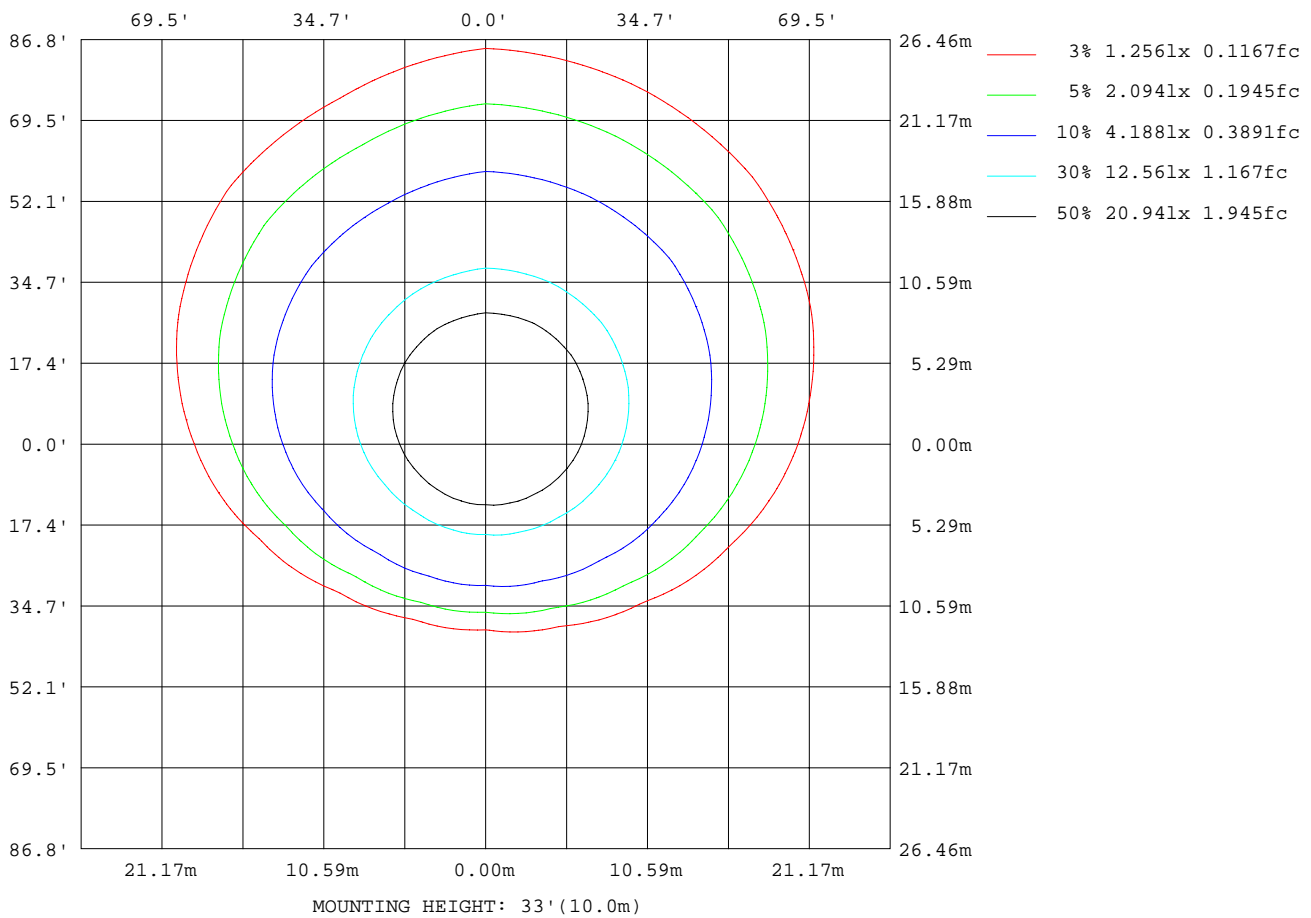
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG  
C Interval: 22.5DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:  
Test Date:2024-08-28

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 1.0DEG  
Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.406.10  
Humidity:65.0%  
Test Distance:11.700m [K=1.0000]  
Remarks:

## ISOLUX DIAGRAM

Test:U:229.62V I:0.4394A P:99.143W PF:0.9826 Freq:49.99Hz Lamp Flux:11219x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.: 620*160*28	SERIAL No.:
MFR.: NLD-24-2028	SUR.:0.4*0.126	Shielding Angle:



C Range: 0 - 360DEG  
C Interval: 22.5DEG  
Test Speed: HIGH  
Temperature: 25.3DEG  
Operators:  
Test Date: 2024-08-28

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 1.0DEG  
Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.0.406.10  
Humidity: 65.0%  
Test Distance: 11.700m [K=1.0000]  
Remarks:

## LED Avg.L Report

Test:U:229.62V I:0.4394A P:99.143W PF:0.9826 Freq:49.99Hz Lamp Flux:11219x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.: 620*160*28	SERIAL No.:
MFR.: NLD-24-2028	SUR.:0.4*0.126	Shielding Angle:

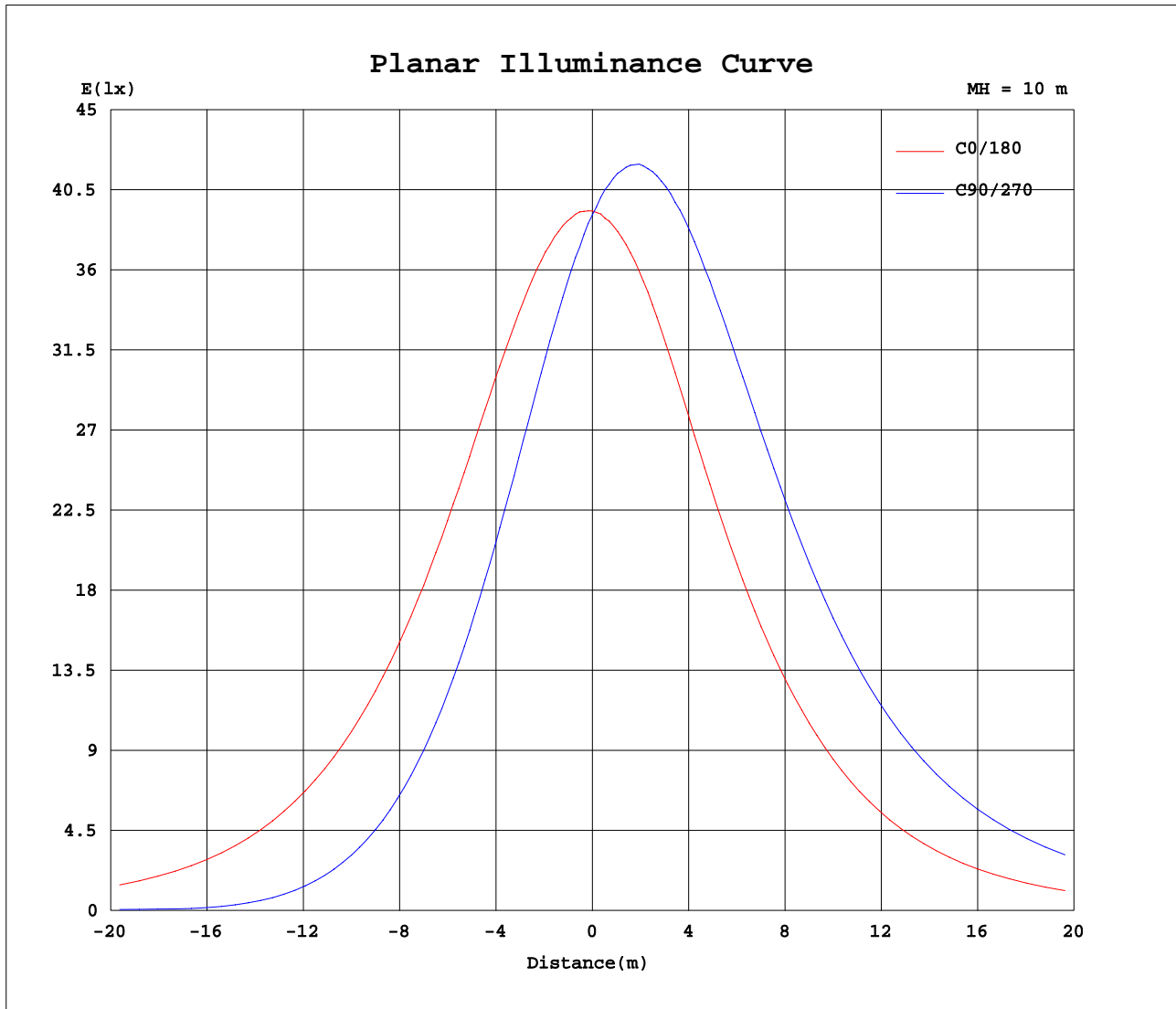
AvgL	cd/m2
L_0~180(65)av	57175
L_0~180(75)av	36376
L_0~180(85)av	14138
L_90~270(65)av	75156
L_90~270(75)av	74599
L_90~270(85)av	19760
L_45(65)av	62487
L_45(75)av	56669
L_45(85)av	37675

Standard: GB/T 29293-2012

C Range: 0 - 360DEG  
C Interval: 22.5DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:  
Test Date:2024-08-28

γ Range: 0 - 90DEG  
γ Interval: 1.0DEG  
Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.406.10  
Humidity:65.0%  
Test Distance:11.700m [K=1.0000]  
Remarks:

## Planar Illuminance Curve



C Range: 0 - 360DEG  
C Interval: 22.5DEG  
Test Speed: HIGH  
Temperature: 25.3DEG  
Operators:  
Test Date: 2024-08-28

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 1.0DEG  
Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.0.406.10  
Humidity: 65.0%  
Test Distance: 11.700m [K=1.0000]  
Remarks:

```

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.406.10
Humidity:65.0%
Test Distance:11.700m [K=1.0000]
Remarks:

```