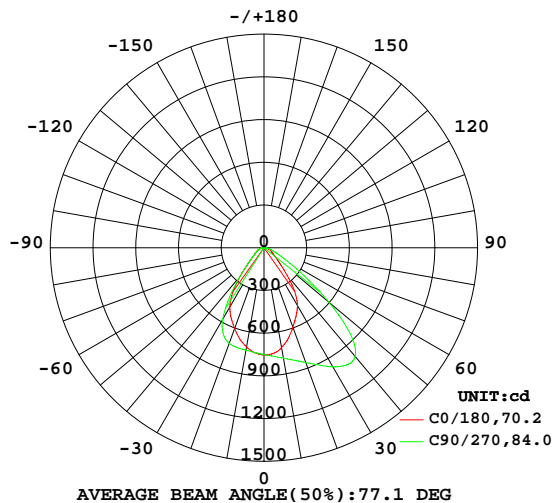


## LUMINAIRE PHOTOMETRIC TEST REPORT

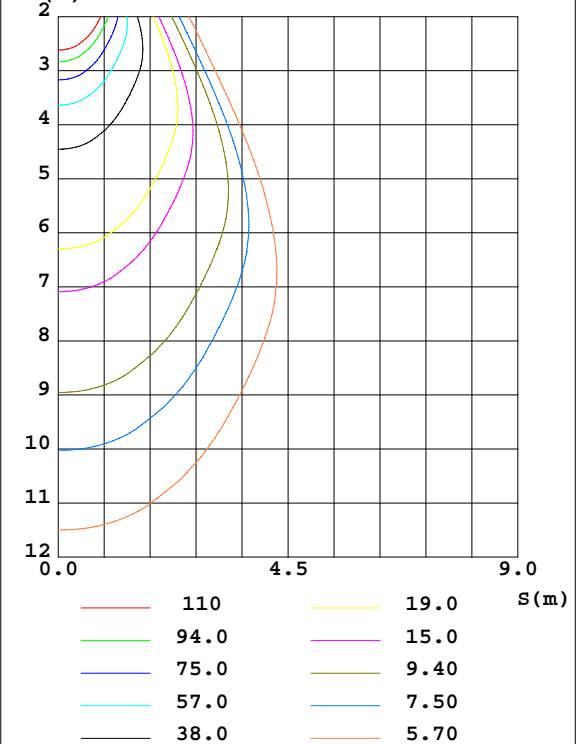
Test:U:229.64V I:0.4366A P:98.489W PF:0.9823 Freq:49.99Hz Lamp Flux:1421.57x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.: 620*160*28	SERIAL No.:
MFR.: NLD-24-2028	SUR.:0.4*0.12	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 14.43 lm/W			
MODEL		Imax(cd)	1014	S/MH(C0/180)	1.00
NOMINAL POWER(W)	12	LOR(%)	100.0	S/MH(C90/270)	1.05
RATED VOLTAGE(V)	230.0	TOTAL FLUX(lm)	1421.6	$\eta$ UP,DN(C0-180)	0.0,62.4
NOMINAL FLUX(lm)	1421.57	CIE CLASS	DIRECT	$\eta$ UP,DN(C180-360)	0.0,37.6
LAMPS INSIDE	1	$\eta$ up(%)	0.0	CIBSE SHR NOM	1.00
TEST VOLTAGE(V)	230.0	$\eta$ down(%)	100.0	CIBSE SHR MAX	1.10

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:

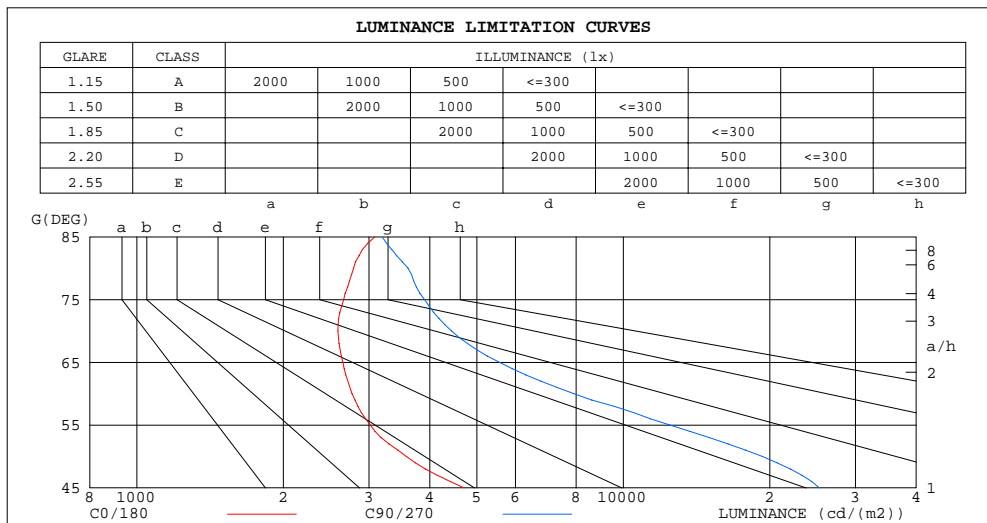
$\gamma$	C0	C45	C90	C135	C180	C225	C270	C315	$\gamma$	$\Phi$ zone	$\Phi$ total	$\%lum, lamp$
10	711.7	753.6	787.1	753.3	707.4	711.5	731.7	714.8	0- 10	70.88	70.88	4.99,4.99
20	593.5	723.0	858.0	743.7	603.0	634.3	713.6	623.7	10- 20	201.1	272.0	19.1,19.1
30	470.3	682.9	966.0	716.1	479.8	500.5	581.9	482.5	20- 30	300.6	572.6	40.3,40.3
40	254.5	629.7	995.2	665.7	258.0	261.9	262.4	254.2	30- 40	333.9	906.4	63.8,63.8
50	110.4	359.4	595.5	395.6	110.5	113.1	109.2	111.8	40- 50	259.6	1166	82,82
60	66.46	121.3	189.9	135.0	65.95	62.33	62.09	63.03	50- 60	135.6	1302	91.6,91.6
70	42.53	58.17	72.79	59.94	41.45	40.10	39.94	41.50	60- 70	68.77	1370	96.4,96.4
80	23.25	27.05	30.09	26.19	21.38	19.62	18.56	20.86	70- 80	38.25	1409	99.1,99.1
90	1.675	1.649	0.6443	0.5928	0.5928	0.7474	1.082	1.512	80- 90	12.91	1422	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:229.64V I:0.4366A P:98.489W PF:0.9823 Freq:49.99Hz Lamp Flux:1421.57x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.: 620*160*28	SERIAL No.:
MFR.: NLD-24-2028	SUR.:0.4*0.12	Shielding Angle:



LUMINANCE cd/(m2)		
G(DEG)	C0/180	C90/270
85	3086	3194
80	2790	3610
75	2661	3901
70	2591	4434
65	2652	5563
60	2769	7911
55	3018	12467
50	3578	19300
45	4711	25302

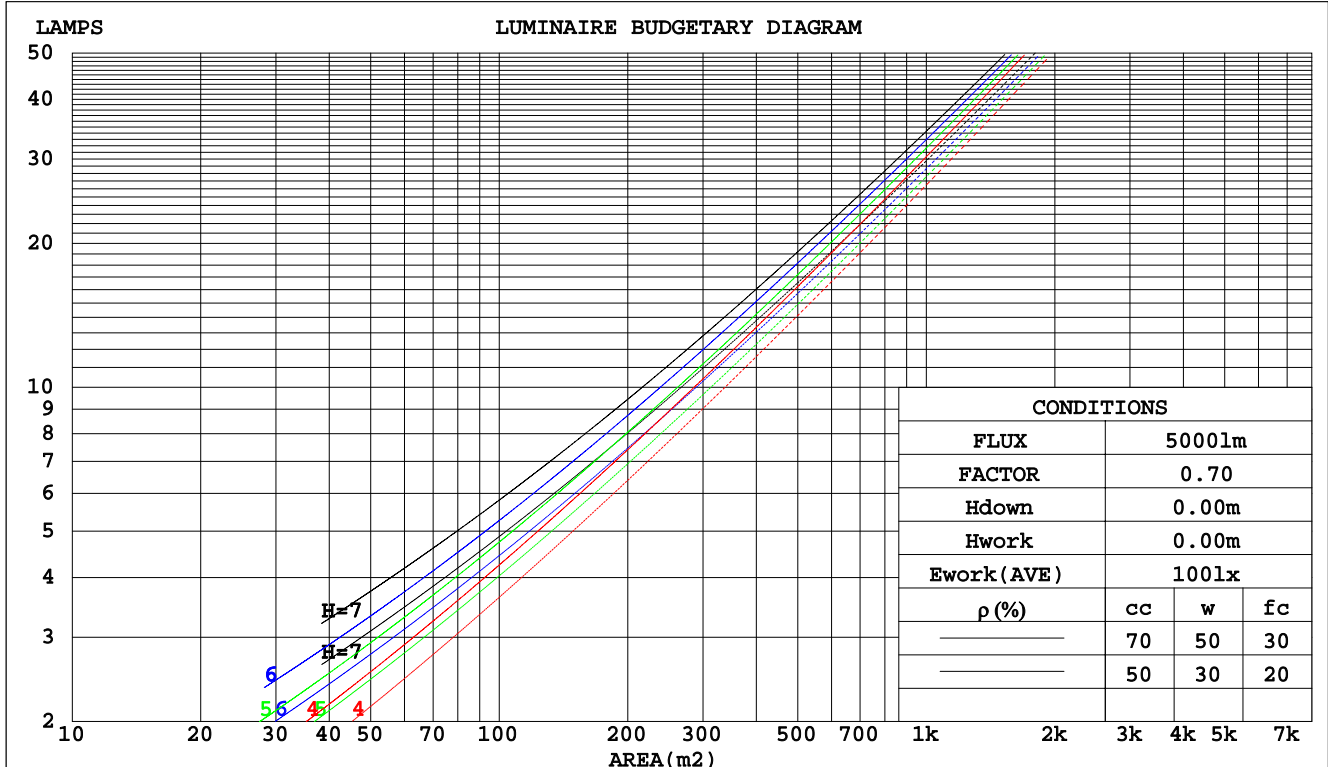
C Range: 0 - 360DEG  
C Interval: 22.5DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:  
Test Date:2024-08-28

$\gamma$  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:229.64V I:0.4366A P:98.489W PF:0.9823 Freq:49.99Hz Lamp Flux:1421.57x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.: 620*160*28	SERIAL No.:
MFR.: NLD-24-2028	SUR.:0.4*0.12	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	.00
1.0	1.07	1.04	1.01	1.05	1.02	.99	1.01	.98	.96	.97	.95	.93	.93	.92	.90	.88
2.0	.96	.91	.86	.95	.89	.85	.91	.87	.83	.88	.84	.81	.85	.82	.80	.78
3.0	.87	.80	.75	.85	.79	.74	.83	.77	.73	.80	.75	.72	.77	.74	.70	.68
4.0	.79	.71	.66	.77	.70	.65	.75	.69	.64	.73	.68	.63	.71	.66	.63	.61
5.0	.72	.64	.58	.70	.63	.58	.68	.62	.57	.67	.61	.57	.65	.60	.56	.54
6.0	.65	.58	.52	.64	.57	.52	.63	.56	.51	.61	.55	.51	.60	.55	.51	.49
7.0	.60	.52	.47	.59	.52	.47	.58	.51	.46	.56	.50	.46	.55	.50	.46	.44
8.0	.55	.48	.42	.55	.47	.42	.53	.47	.42	.52	.46	.42	.51	.46	.42	.40
9.0	.51	.44	.39	.51	.43	.39	.49	.43	.38	.48	.42	.38	.47	.42	.38	.36
10.0	.47	.40	.35	.47	.40	.35	.46	.40	.35	.45	.39	.35	.44	.39	.35	.33



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:229.64V I:0.4366A P:98.489W PF:0.9823 Freq:49.99Hz Lamp Flux:1421.57x1 lm					
NAME:		TYPE:		WEIGHT:	
SPEC.:		DIM.: 620*160*28		SERIAL No.:	
MFR.: NLD-24-2028		SUR.:0.4*0.12		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	.246	.140	.044	.239	.136	.043	.226	.130	.041	.214	.123	.040	.203	.118	.038	
2.0	.235	.129	.040	.229	.126	.039	.218	.121	.038	.208	.117	.036	.198	.112	.035	
3.0	.222	.118	.035	.217	.116	.035	.207	.112	.034	.198	.109	.033	.190	.105	.033	
4.0	.209	.109	.032	.204	.107	.032	.196	.104	.031	.188	.101	.030	.180	.098	.030	
5.0	.197	.100	.029	.193	.099	.029	.185	.096	.028	.178	.094	.028	.171	.091	.027	
6.0	.185	.093	.027	.182	.092	.026	.175	.090	.026	.168	.088	.026	.163	.086	.025	
7.0	.175	.086	.024	.171	.085	.024	.165	.084	.024	.160	.082	.024	.154	.080	.024	
8.0	.165	.081	.023	.162	.080	.023	.157	.078	.022	.152	.077	.022	.147	.075	.022	
9.0	.156	.076	.021	.154	.075	.021	.149	.074	.021	.144	.072	.021	.140	.071	.021	
10.0	.148	.071	.020	.146	.071	.020	.142	.069	.020	.137	.068	.019	.133	.067	.019	

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	.176	.157	.139	.150	.134	.120	.103	.093	.083	.059	.054	.048	.019	.017	.016	
2.0	.165	.132	.105	.141	.114	.091	.097	.079	.063	.056	.046	.037	.018	.015	.012	
3.0	.155	.114	.081	.133	.098	.070	.091	.068	.049	.053	.040	.029	.017	.013	.010	
4.0	.147	.100	.064	.126	.086	.056	.087	.060	.039	.050	.035	.023	.016	.011	.008	
5.0	.139	.089	.052	.120	.077	.045	.082	.054	.032	.048	.032	.019	.015	.010	.006	
6.0	.133	.081	.043	.114	.070	.038	.079	.049	.027	.046	.029	.016	.015	.009	.005	
7.0	.126	.073	.037	.109	.064	.032	.075	.045	.023	.044	.026	.013	.014	.009	.004	
8.0	.120	.068	.031	.104	.059	.027	.072	.041	.019	.042	.024	.012	.014	.008	.004	
9.0	.115	.063	.027	.099	.054	.024	.069	.038	.017	.040	.023	.010	.013	.007	.003	
10.0	.110	.058	.024	.095	.051	.021	.066	.036	.015	.038	.021	.009	.012	.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:229.64V I:0.4366A P:98.489W PF:0.9823 Freq:49.99Hz Lamp Flux:1421.57x1 lm											
NAME:			TYPE:			WEIGHT:					
SPEC.:			DIM.: 620*160*28			SERIAL No.:					
MFR.: NLD-24-2028			SUR.:0.4*0.12			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	2H	17.2	18.5	17.4	18.6	18.8	22.9	24.2	23.1	24.4	24.5
	3H	17.6	18.7	17.8	19.0	19.2	23.0	24.2	23.3	24.4	24.7
	4H	17.8	18.9	18.1	19.2	19.4	23.1	24.2	23.4	24.5	24.7
	6H	18.1	19.1	18.4	19.4	19.6	23.1	24.2	23.5	24.5	24.7
	8H	18.2	19.2	18.5	19.5	19.7	23.2	24.2	23.5	24.4	24.7
	12H	18.3	19.3	18.6	19.5	19.8	23.1	24.1	23.5	24.4	24.7
4H	2H	17.7	18.8	18.0	19.1	19.3	22.7	23.8	23.0	24.1	24.3
	3H	18.3	19.3	18.6	19.5	19.8	23.0	24.0	23.3	24.3	24.6
	4H	18.6	19.5	19.0	19.8	20.1	23.2	24.0	23.5	24.3	24.7
	6H	19.0	19.8	19.4	20.1	20.5	23.3	24.1	23.7	24.4	24.8
	8H	19.2	19.9	19.6	20.3	20.6	23.3	24.1	23.7	24.4	24.8
	12H	19.3	20.0	19.7	20.4	20.8	23.4	24.0	23.8	24.4	24.8
8H	4H	18.9	19.6	19.3	19.9	20.3	23.1	23.8	23.5	24.2	24.6
	6H	19.4	20.0	19.8	20.4	20.8	23.3	23.9	23.8	24.3	24.7
	8H	19.6	20.2	20.1	20.6	21.0	23.4	24.0	23.9	24.4	24.8
	12H	19.9	20.3	20.4	20.8	21.3	23.5	24.0	24.0	24.4	24.9
12H	4H	18.9	19.5	19.3	19.9	20.3	23.1	23.7	23.5	24.1	24.5
	6H	19.4	20.0	19.9	20.4	20.8	23.3	23.8	23.8	24.3	24.7
	8H	19.8	20.2	20.2	20.7	21.1	23.4	23.9	23.9	24.3	24.8
Variations with the observer position at spacings:											
S = 1.0H	+ 1.1 / - 1.3					+ 0.8 / - 1.1					
1.5H	+ 2.1 / - 1.5					+ 1.5 / - 1.6					
2.0H	+ 1.6 / - 1.1					+ 3.4 / - 2.9					

CIE Pub.117, 1422 lm Total Lamp Luminous Flux Corrected ( $8\log(F/F_0) = 1.2$ )

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:229.64V I:0.4366A P:98.489W PF:0.9823 Freq:49.99Hz Lamp Flux:1421.57x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.: 620*160*28	SERIAL No.:
MFR.: NLD-24-2028	SUR.:0.4*0.12	Shielding Angle:

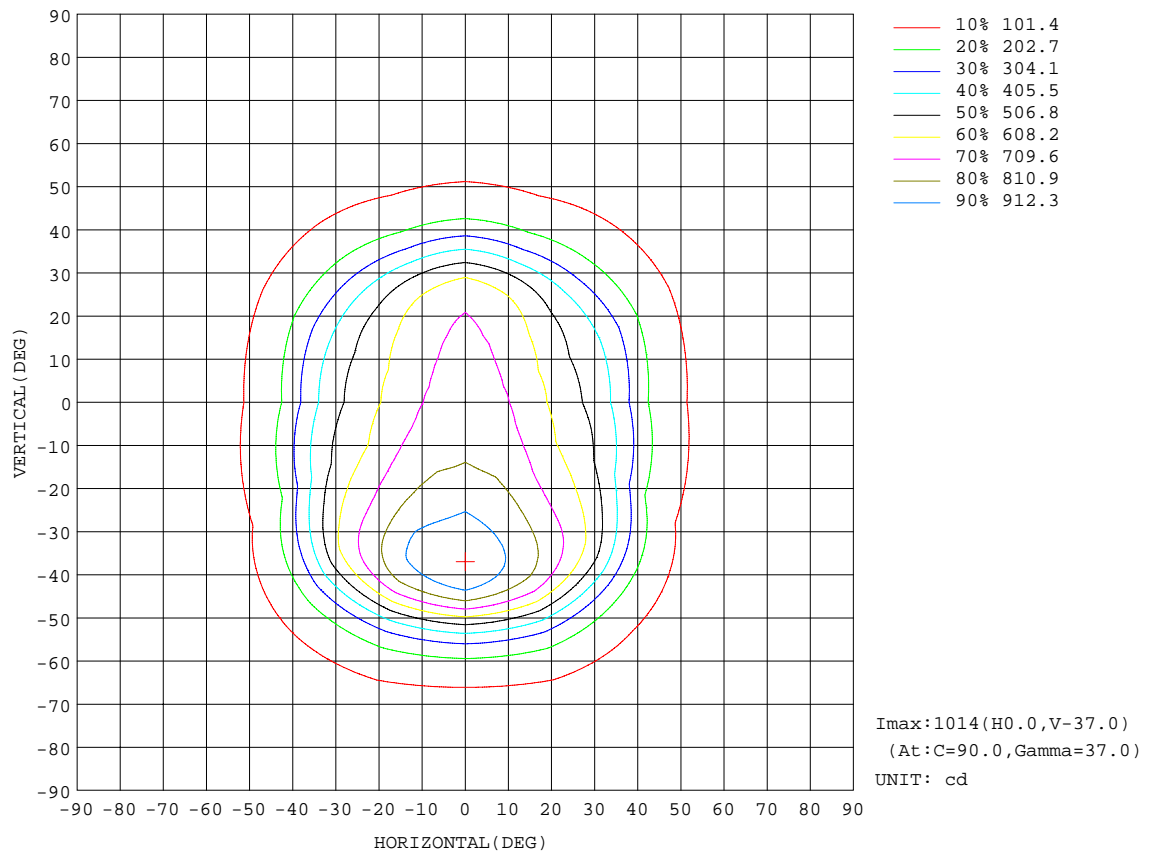
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	69	59	53	68	59	53	67	58	53	48
0.80	78	69	63	78	69	63	76	68	63	57
1.00	86	77	72	85	77	71	83	77	71	65
1.25	92	84	79	91	83	78	88	82	77	71
1.50	96	89	83	95	88	83	92	86	82	76
2.00	101	95	90	100	94	89	97	92	88	81
2.50	104	98	94	102	97	93	99	94	91	84
3.00	107	102	97	105	100	96	101	97	94	87
4.00	110	105	102	107	104	100	104	100	98	90
5.00	111	108	105	109	106	103	105	102	100	91
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

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:

## ISOCANDELA DIAGRAM

Test:U:229.64V I:0.4366A P:98.489W PF:0.9823 Freq:49.99Hz Lamp Flux:1421.57x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.: 620*160*28	SERIAL No.:
MFR.: NLD-24-2028	SUR.:0.4*0.12	Shielding Angle:



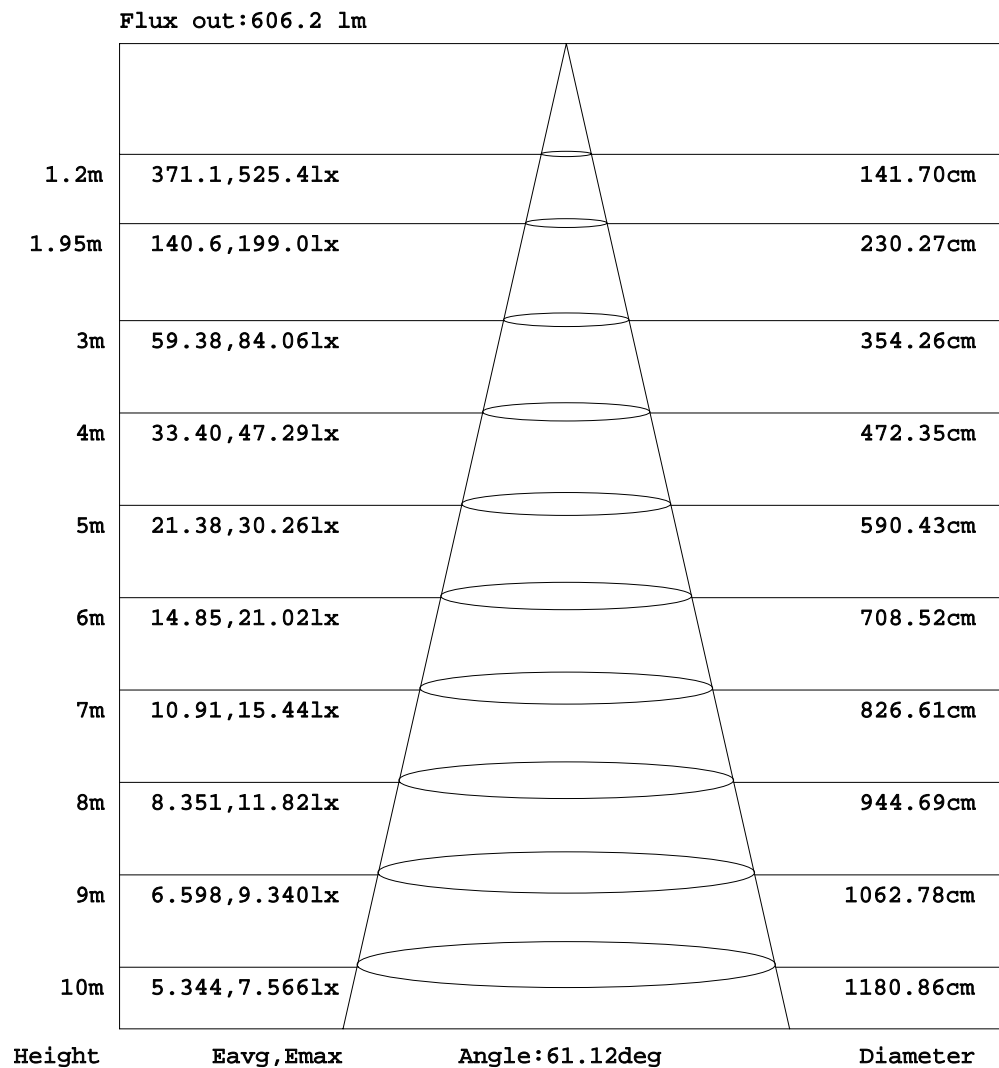
C Range: 0 - 360DEG  
C Interval: 22.5DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:  
Test Date:2024-08-28

$\gamma$  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:229.64V I:0.4366A P:98.489W PF:0.9823 Freq:49.99Hz Lamp Flux:1421.57x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.: 620*160*28	SERIAL No.:
MFR.: NLD-24-2028	SUR.:0.4*0.12	Shielding Angle:



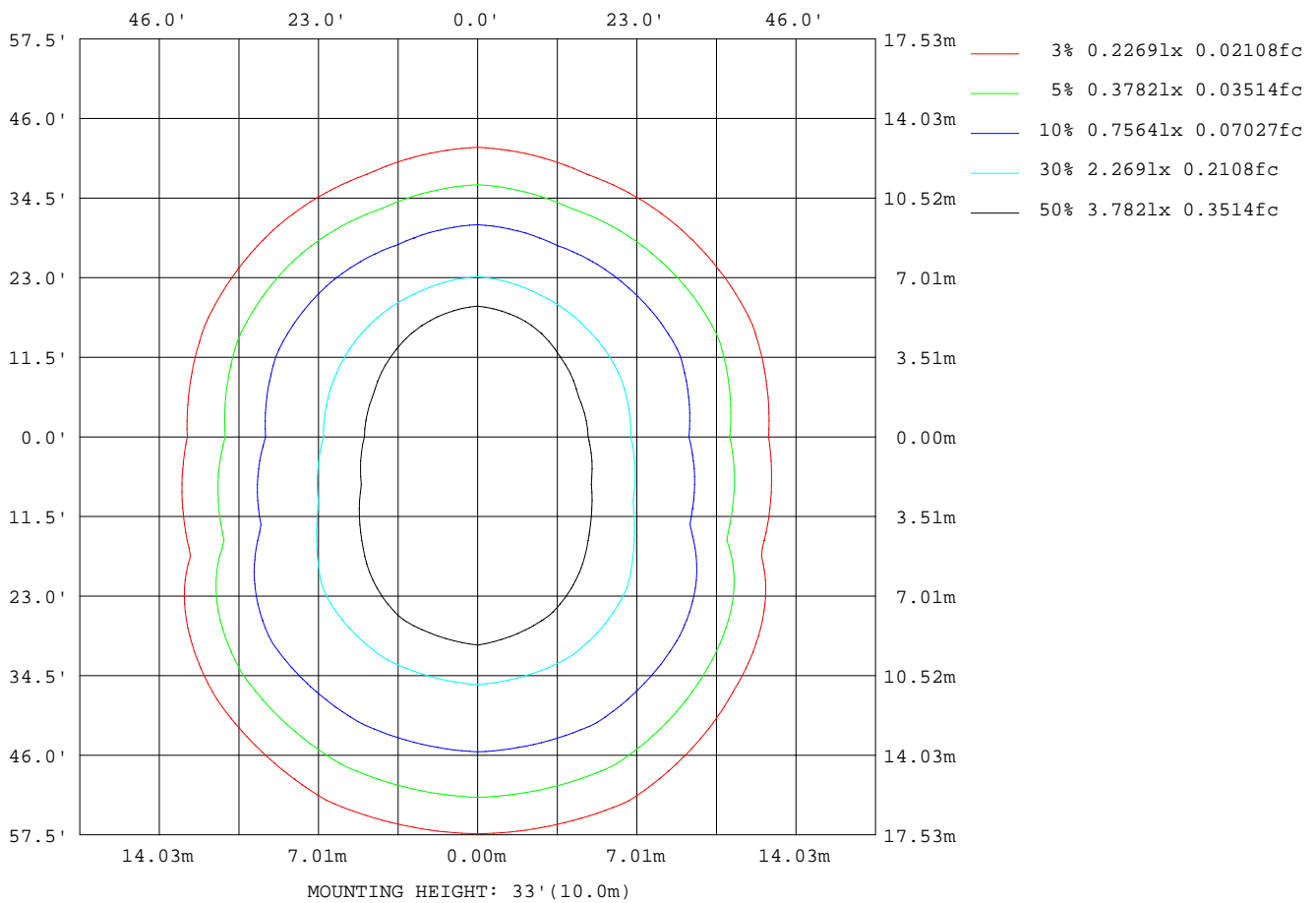
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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

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:

## ISOLUX DIAGRAM

Test:U:229.64V I:0.4366A P:98.489W PF:0.9823 Freq:49.99Hz Lamp Flux:1421.57x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.: 620*160*28	SERIAL No.:
MFR.: NLD-24-2028	SUR.:0.4*0.12	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:229.64V I:0.4366A P:98.489W PF:0.9823 Freq:49.99Hz Lamp Flux:1421.57x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.: 620*160*28	SERIAL No.:
MFR.: NLD-24-2028	SUR.:0.4*0.12	Shielding Angle:

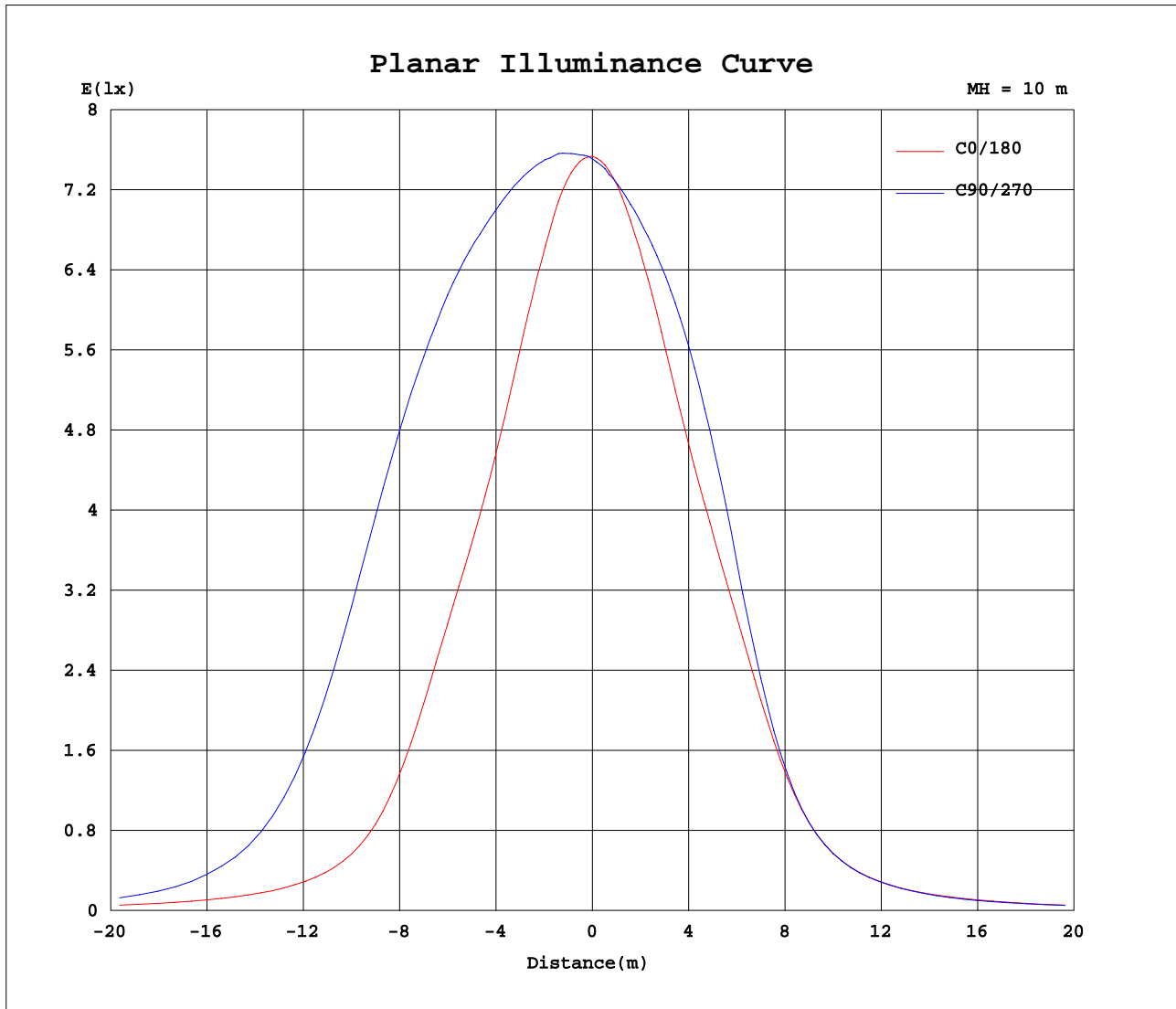
AvgL	cd/m2
L_0~180(65)av	2631
L_0~180(75)av	2602
L_0~180(85)av	2839
L_90~270(65)av	4031
L_90~270(75)av	3111
L_90~270(85)av	2620
L_45(65)av	3337
L_45(75)av	2889
L_45(85)av	2777

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:

```