

XD-344-30-2001
Sealed glass unit with built-in blind



**Docu-
mentation**

NORDICON[®]

The blind unit

The dimensions

The size of the glass - B, width x H, height - Is between a minimum of 300 x 200 mm and maximum 2700 x 3000 mm.

The air gap is set at 24 mm and can be supplied in any glass combination required dependent only on the clients' specification and relevant Building Regulations and Health and Safety legislation. For example - two layers of 4 mm glass will give a 32 mm unit.

The sealed glass unit

The Nordicon sealed glass unit is produced to the standards required by the country in which it is manufactured. The units are double-sealed with a butyl-pointing around the face of the spacer bar.

Under current quality assurance procedures.

Nordicon's certification license No. 246, issued by Danish Standard, ensures that each unit manufactured in Denmark meets the quality specification for sealed glass units. Each unit is marked with the DS mark and with the production ID, date and place of production. Manufacturing in other countries is to the same stringent standards. The glass can be plain float, toughened, laminated, tinted or coated in any combination and thickness. **Energy glass units** with all types of hard-coating can be accommodated.

Nordicon triple glazing unit

In special cases where the unit has to meet special requirements, the unit may be made with triple glazing with a venetian or pleated blind in one or both airgaps.

The built-in venetian blind

The slats

The 16 mm wide slats consist of 0.2 mm profiled aluminium strips. The coloured slats are enamelled with polyester enamel using UV-fast pigments.

When lowered the blind covers the entire glass area, the distance to the spacer bars being only 2 mm. In the hoisted position, the blind takes up approximately 4% of the pane height.

The cord that hoists and lowers the blind is made of fibres with an extremely high tensile strength and with a resistance against UV discoloration and damage.

The ladder-tape used for carrying and tilting the slats is made of polyester.

The Nordicon blind colours

Nordicon has chosen 2 ranges of standard colours. Group A includes the colours that we recommend for general usage. They blend harmoniously with the exterior of most buildings and they do not adversely affect the colour of the light reflected into room.

Group B includes the special effect and ShadeArt colours. The use of these colours for the entire blind is unusual and with dark colours toughened glass must be specified. These colours are also used for internal partitions, or other decorative purposes.

The ordinary enamelled slats are a semi matt finish. Metallic colours are more glossy.

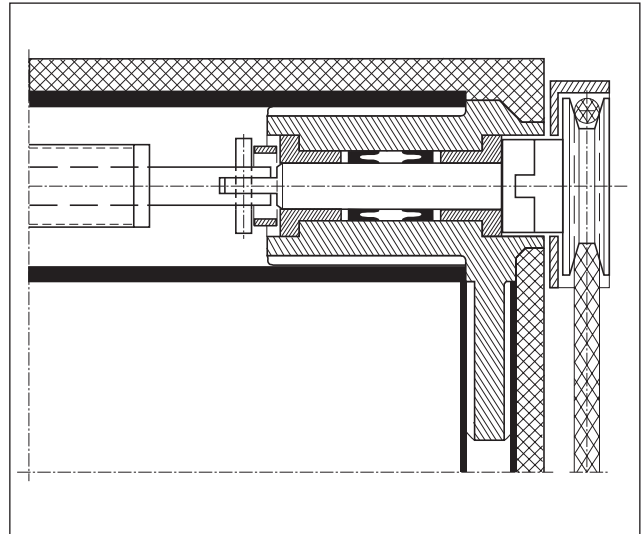
Colour swatches are available direct from Nordicon distributors.

The hoisting mechanism

The hoisting mechanism for the blinds consists of a smooth longitudinal steel shaft supported by bearings incorporated into the extruded aluminium housing that constitutes the upper spacer bar. The lifting cords are wound in a single layer on the shaft insuring that the slats are always hoisted or lowered in parallel.

The slats are tilted by means of the turn-couplings on the steel shaft. This enables a combination of the hoisting, lowering and tilting function, so that only one operating cord achieves these functions via the external pulley.

The dry air or gas in the hollow space gives efficient protection against corrosion.

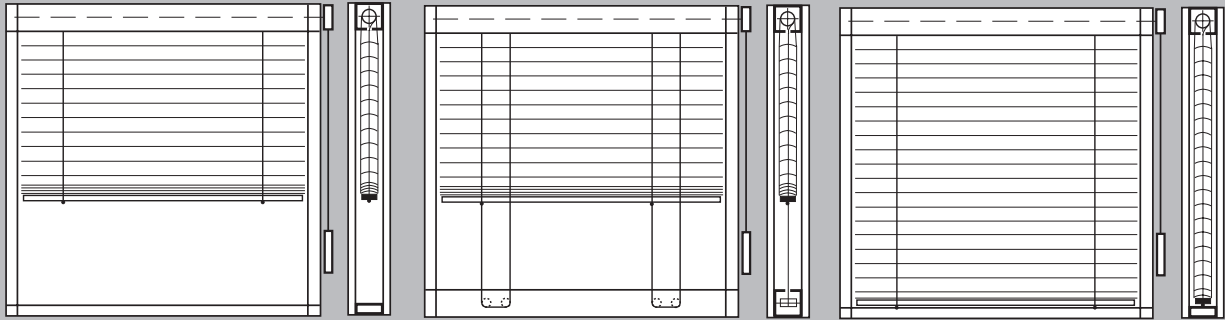


The hermetically sealed drive shaft

One of the top die-cast metal corner pieces features a sealed shaft outlet for the external operating pulley. The shaft is of polished, stainless steel and fitted with two high-performance hydraulic seals. The exterior nylon operating pulley is fitted to the stainless steel shaft at the top corner of the sealed unit.

Choice of models

Built-in venetian blind



Model 21

Venetian blind with tilt/hoist mechanism and single cords without counterpull.

Is used for windows which seldom have to be tilted away from the up-right position.

Model 22

Venetian blind with tilt/hoist mechanism and cord loop with counterpull.

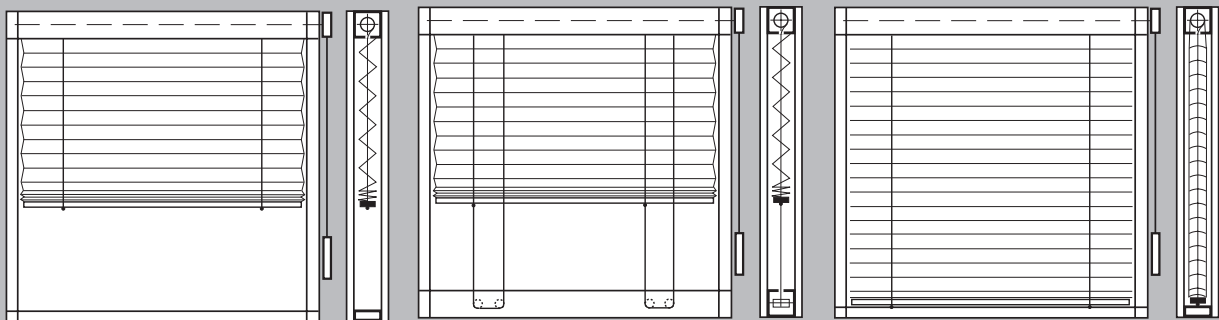
Can be used for windows that can be turned upside down. The blind can only be set correctly when the window is in upright position.

Model 23

Venetian blind without hoisting mechanism with single cord fixed to bottom rail of the unit.

Can be operated in upright position. Can be used for all types of tilt, turn or fixed windows and for all sizes.

Built-in pleated blind



Model 41

Pleated blind with hoisting mechanism without counterpull.

Is used in windows which are only seldom tilted away from the upright position. Can be operated at an angle between 90 and to degrees.

Model 42

The pleated blind with hoisting mechanism with cord loops with counterpull.

Can be operated in all positions– even upside down.

Model 43

Pleated blind without hoisting mechanism and fixed top and bottom.

Can be used for all types of window and in the largest dimensions.

Operation

Manual operation

The operating cord, fitted around the pulley wheel hoists and lowers the blind and a small adjustment up or down will tilt the slats to the desired angle.

The cord loop, which is made of synthetic fibre, is sewn together with a longitudinal seam providing a flexible and hardwearing joint.

Through a cord guide, the cord is taken to a comfortable operating height. A cord weight ensures the cord is always in position.

There are three types of cord guide:

Cord guide K3 is for installation in the top corner of the frame. It fits most windows of wood, PVCu, aluminium or composite. The design allows easy installation to the window frame requiring only two-screw fixing.

Cord guide K4 takes the operating cord down in front of the glass. This means that only the uppermost part of the glazing bead has to be cut. This guide is particularly suitable for fixed-frame windows and sliding doors.

Cord guide K24 with gearing is recommended for large blind units or where frequent raising and lowering is expected.

The cord lock for installation onto the window frame is to keep the cord in position on tilt and turn or centre pivot windows. The lock is compulsory for large windows to keep the blind in position.

Electrical operation

Manual, automatic, remote-control

The Nordicon blind unit can also be supplied with electrical operation - either at delivery or for installation at a later date.

The motor is placed in the top corner on the inner side of the sealed unit. The control boxes, which are available in various designs and levels of functionality, can be placed anywhere in the room.

The motor may also be built into the upper housing – inside the unit.



Thermal insulation

The Nordicon sealed glass unit has in its standard design, two layers of normal clear glass and a U-value of 2.7 W/m² K (0.48 BTU/ft².F.h) when the blind is hoisted. When the blind is closed the U-value is 1.75 W/m² K (0.48 BTU/ft².F.h). Other glass combinations can improve the U-value and thereby reduce the heating costs.

Examples of U-values for the Nordicon blind units. W/m² K (BTU/ft².F.h).

Glass / gas combination			the blind up	the blind down and closed
out	air/gas	in		
clear glass	air	clear glass	2.7 (0.48)	1.75 (0.31)
clear glass	argon	clear glass	2.4 (0.42)	1.62 (0.29)
clear glass	air	energy coat	1.6 (0.28)	1.21 (0.21)
clear glass	argon	energy coat	1.4 (0.25)	1.09 (0.19)
energy coat	argon	energy coat	1.1(0.19)	0.90 (0.16)

The U-value for a closed blind is calculated on the basis of an increase in insulation of 0.20 m²K/W.

According to the DTI report 254.16381-3(1991)

Calculating building energy savings

Northern Europe

The effects of the U-value on the consumption of heat in Northern Europe can be assessed by using the following A U 9-rule:

$A \times U \times 9 =$ annual consumption of oil in litres

(A = pane area in m²) (U = the U-value)

Example: A building with 400 m² pane area with sealed units (1.8) instead of normal 4/12/4 units (3.0)

A $400 \times 3.0 \times 9 = 10,800$

B $400 \times 1.8 \times 9 = 6,400$

Saving 4,400 litres of oil per year

Further savings by a closed blind e.g. at night (12 h) $0.5 \times 400 \times (1.8 - 1.32) \times 9 = 864$ litres of oil per year.

Besides the above-mentioned savings, less energy is needed for cooling and ventilation by using the sun shading properties of the blind during bright weather.

Solar Energy Control

Light and heat transmission through the Nordicon unit, blinds up or down.

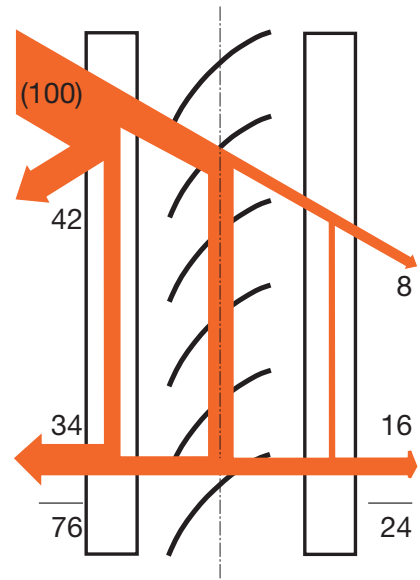
The sun shading effect of the blind is considerable and in many cases it may replace complicated and costly external blind systems or special shading glass. A two layer sealed unit of clear glass lets in approx. 80% of the sun light and approx. 76% of the sun's radiation energy.

With the blind down and tilted to just leave out direct sun, transmission is reduced to 24% - if closed bare 8% of the solar energy gets through.

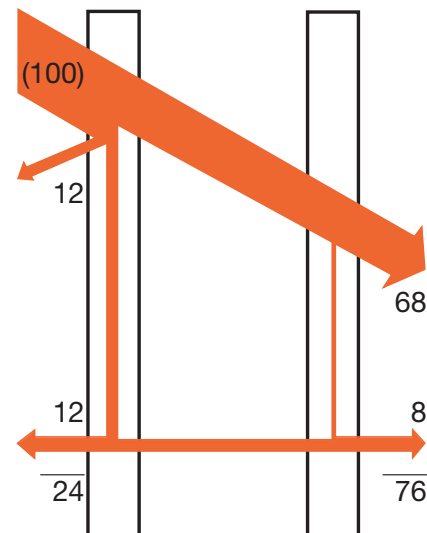
Solar Energy Gain (g-value or SHGC) depending of blind setting.

Glass combination exterior/interior	Light transmission	Total solar energy trans.		
		Blind open	Blind 45°	Blind closed
clear glass/clear glass	80	76	24	10
50/62 bronze/clear glass	44	49	23	10
20/34 silver/clear glass	18	25	17	7
clear glass/energy-float	75	72	20	8
50/62 bronze/energy-float	42	45	19	8
20/34 silver/energy-float	17	22	16	7

Light and solar heat transmission through a Nordicon sealed unit. Values are specified in percentages. Light transmission has been specified for a unit with blind fully hoisted. Blind slats are white.



Transmission of solar energy through Nordicon sealed unit. White blind tilted 45°. Ordinary, clear float-glass.



Transmission of solar energy through Nordicon sealed unit. With blind hoisted. Ordinary, clear float-glass.

Architect's specification

Short product specification

The following outline should suffice as the basis for making inquiries or orders:

**Nordicon sealed glass unit with 24 mm airgap and with built-in blind.
(Manual operation)**

B	(unit width in mm – glass dimension)
H	(height in mm – glass dimension)
Model No.	(choose 21, 22, 23, 41, 42, 43)
Colour	(N-number or sample)
Cord outlet	(K3 on frame or K4 in front of glass)
Cord length	(Length of cord loop in mm from top of unit)
Glass combination exterior/interior	(thickness, type, gas/air filling)

Motorized operation: