

Transparent

Architecture

RODAN
Glass Clamp
Mountings



The Art of Architecture

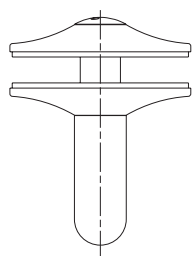
Architecture reflects the spirit – the Zeitgeist – of its era, reveals visions and dreams, gives lifestyle a form. Eliminating barriers, exuding freedom – contemporary architecture is an expression of openness and expansiveness. Transparency opens up the enclosed space on all sides, provides the transition between inside and out, creates an interface between the building and the municipality, between man and his environment. Glass unbounded: Slender, intricate constructions can be used to bear the wide-span transparency of façade, wall, floor, ceiling and roof alike. They provide planners and architects with a tool that satisfies both the structural and the decorative imperatives – with the range of expression extending from reserved to forceful. DORMA has refined this technology to provide the ultimate in functional sophistication, aesthetic elegance and design variety – introducing: RODAN glass clamp mountings.



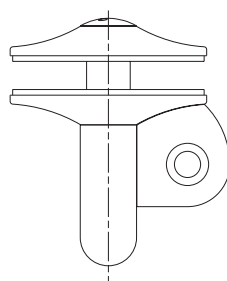
Great success for excellent design:
The iF Design Award 2001 for RODAN glass clamp mountings.



RODAN



Type: F



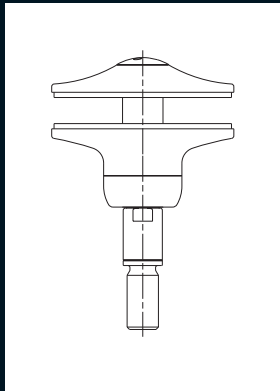
Type: FL

As architecture evolves, so does the remit for the technology needed to implement its visions. This is why DORMA offers such a wide range of fixings. With small-dimensioned glass panels, for example, rigid glass clamp mountings without an articulating joint are most suitable - also available with welded sleeves for securing them to the substructure and welded eyelets for tie rod connection. One salient detail worthy of particular mention: The clamp mounting can be used to compensate for drilled hole tolerances in the glazing.

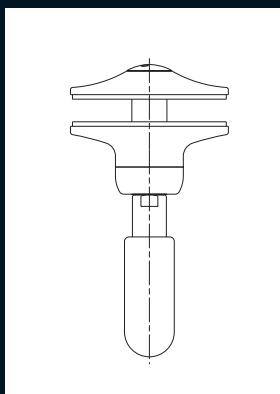
Point for point - with nothing left to chance

Each glass clamp mounting is tailored to its project-specific task, not only in relation to its assembly accoutrements but also its ability to compensate for building and fabrication tolerances. For superb functionality of the complete system comprising glass and substructure.

Economical large-dimensioned glass panels place particular requirements on stress relief and thus the support and fixing system. It is always better to yield than to resist in such cases. So RODAN glass clamp mountings with their ball joint offer lateral flexibility to allow free deformability of the glazing panel in the area of its locating holes. The result: Reliable relief of stress peaks and effective load limitation at the fixing points.

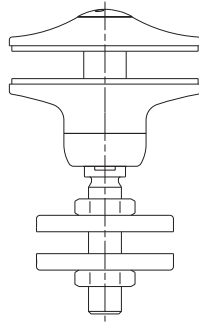


Type: K

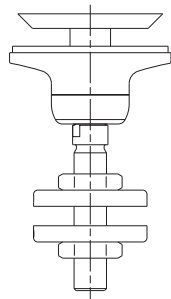


Type: KH





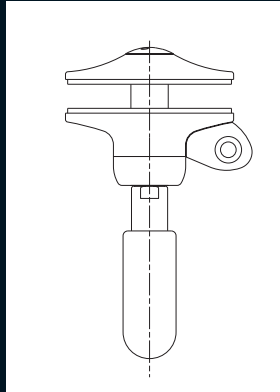
Type: KU



Type: SKU

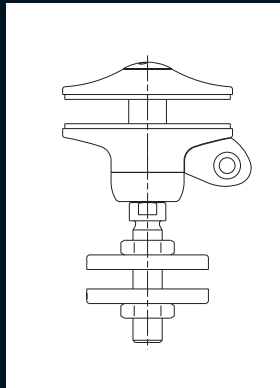
Perfect in form and function: Technology and aesthetic elegance are of equal value in architecture. This is why RODAN glass clamp mountings have been designed with a full complement of features. From clamping disk variants to articulated countersink mountings for all the visual advantages of a flush-mounted system. And from integrally welded sleeves to conventional bolting systems with nuts and washers for connection to the substructure.

Well connected



Type: KLU-H

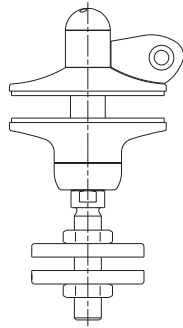
A special range of RODAN glass clamp mountings has been developed specifically for trussed systems: Glass clamp mountings with ball joint and welded eyelet. The eyelet constitutes a solid and visually elegant mounting for the tie elements. Here, too, there is a choice between various types of connection to the substructure.



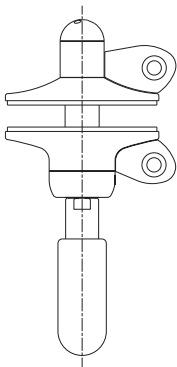
Type: KLU-U



RODAN



Type: KLO-U



Type: KLL-H

There are two sides to everything. Complex structures require complex system elements. It is not unusual for the architectural design to provide for the employment of glass clamp mountings in combination with different inter-connecting elements above and below the glass panel. The wide range of components included in the RODAN range ensures that designers can remain flexible: Ball joint mountings are available with welded eyelets on one or both sides. Variants with two eyelets for use in bilaterally trussed glass panels are able to absorb wind pressure and suction loads with equal aplomb.

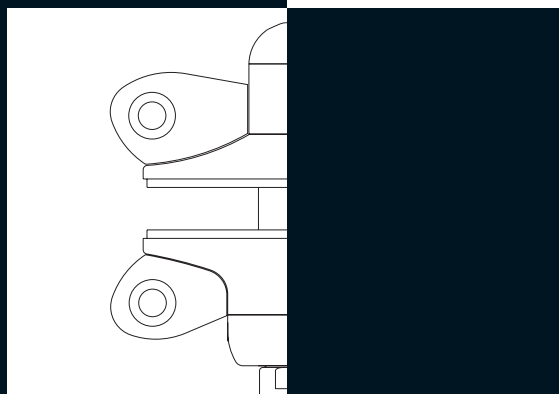
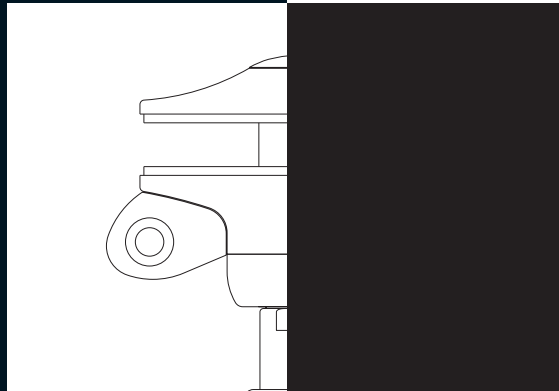
Trussed Glass Panels

Two elements – one system.

The combination of RODAN glass clamp mountings and RODAN tie rods results in a fascinating system offering outstanding integrity combined with almost unbounded transparency. Trussed glass panels: Where stabilising substructures are usually required, this patented solution is unique in its ability to bridge enormous spans without the need for additional elements. Central support points, incorporated in the overall framework, are connected by compressive members and tie rods to the glass clamp mountings attached to the substructure. A perfect support act for those intricate architectural visuals.

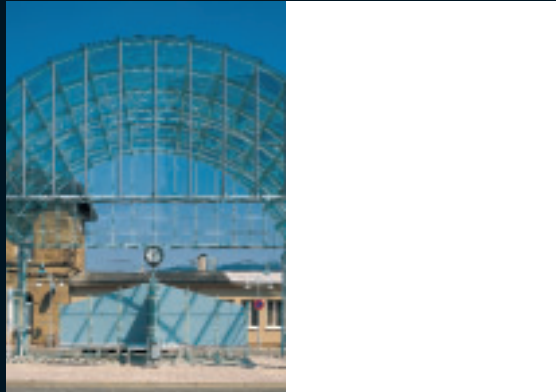


RODAN



Enhanced safety through stress relief: The deadweight and external loads determine the selection and configuration of the optimum glass clamp mounting. They dictate whether the glass panels need to be trussed on one or both sides, and whether a lower, an upper or two welded eyelets are needed for tie rod connection.

Cathedrals in Glass



Three transparent pavilions each with a floor space measuring 100 square metres dominate the frontage of the bus terminal at Endersbach in Germany. The two outer "aisles" feature a cross vault roof, while the centre "nave" has a barrel roof.

Both roof designs feature latticework constructions in which RODAN glass clamp mountings transmit the compressive and tensile loads to the other substructure components.



Bus terminal, Endersbach
Architect:
Winfried Maier Dipl.-Ing.,
Grossheppach
Design of the
glass-and-steel
construction with detail
engineering:
Robert Danz

Light and Weightlessness

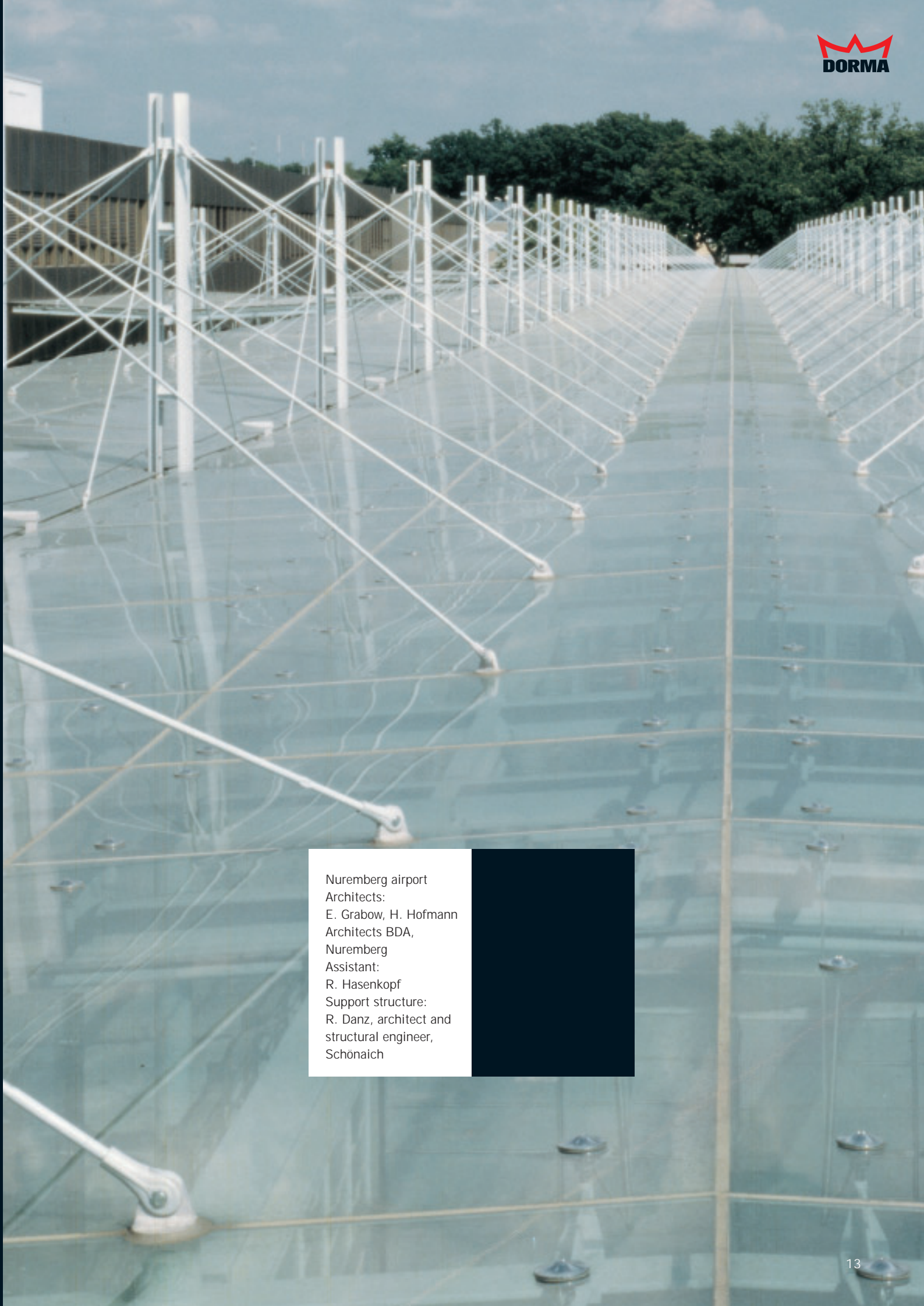


The glass panels are trussed using glass clamp mountings with laser-welded eyelets for connection to RODAN tie rods.

The entrance hall roof of Nuremberg airport's metropolitan railway station meets various functional requirements: This transparent covering both protects the entrances to the station and provides the platform level with daylight, while the canopy section interconnects the main causeways from the terminal buildings to the car parks. Two different glass formats, one trussed, characterise the roof construction. In both cases, RODAN glass clamp mountings connect the glass panels to the substructure and transmit the load of the laminated safety glass panes via cast iron consoles to the steel girders.



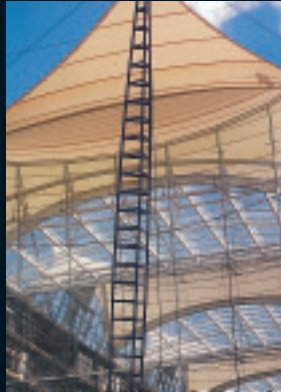
Large tolerances in the substructure were successfully accommodated within the holes drilled in the glass by using glass clamp mountings with a bearing diameter of 70 mm.



Nuremberg airport
Architects:
E. Grabow, H. Hofmann
Architects BDA,
Nuremberg
Assistant:
R. Hasenkopf
Support structure:
R. Danz, architect and
structural engineer,
Schönaich

Maximum Transparency

Glass panels for the gable ends: Glass façades of up to 23 metres in height connect the two masonry sections of the shopping mall on the Kirchberg plateau in Luxembourg. Owing to the fact that the building structure was designed to allow for deformation, the specification initially stipulated 15 millimetre thick panels in a format of 2.10 x 1.80 metres and load transmission to a steel substructure. The patented system of trussed glass panels, however, produced a much more transparent and cost-efficient solution: The deadweight of the glazing system eventually selected – with panels measuring 10 and 12 mm thick and with double the outside dimensions at 2.10 x 3.60 metres - and also the wind loads are transmitted to the substructure by four glass clamp mountings per panel. The glass panel itself is trussed mid way along the edge - front and rear - with RODAN tie rods for absorbing and transmitting wind suction and pressure loads.



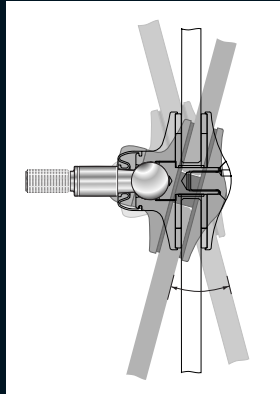
The glass façades are angled at 85° towards the outside in order to extensively avoid glare.



Well thought out: On the top chords of the wind-bracing girders are welded steel consoles, at the end of which are connected the RODAN glass clamp mountings.

Kirchberg shopping mall
in Luxembourg.
Façade of glass and steel
Coordination and site
management:
Stefan Jeromin
Design and consultancy:
Robert Danz

Stress-free Planning

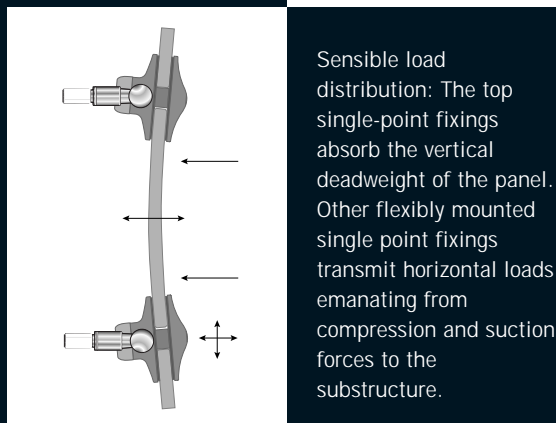


Safety through stress relief: The danger of fracture is minimised.

RODAN effectively reduces risk: Single-point fixings rigidly connected to a substructure in combination with large-dimension glass panels can present a significant latent hazard. Due to thermal expansion alone, glass requires a certain freedom of movement. Constraint can result in high stresses developing in the glass which may eventually cause the panels to break. Additional stresses can also be caused by horizontal wind loads bearing on the pane surfaces.

And this is precisely where RODAN glass clamp mountings come into play: Their articulated single-point bearing allows the necessary movement in the glass clamp mounting relative to the substructure. The head is able to rotate in all directions; and the glass is able to deform within its usual limits, so avoiding the occurrence of high local stressing.

RODAN



Sensible load distribution: The top single-point fixings absorb the vertical deadweight of the panel. Other flexibly mounted single point fixings transmit horizontal loads emanating from compression and suction forces to the substructure.

The construction, the glass, the design and the installation method together contrive to determine the functional reliability of the complete system. Consequently, maximum care and quality are required in each of these areas. It is vital to calculate in advance, to co-ordinate the glass and substructure tolerances and to determine the expected thermal expansion values. Such an approach is imperative if project solutions are to be viable.

Safety and Support – The prime criteria in architecture

High-quality constructions require close and cooperative dialogue between architect, engineer and system manufacturer. Particularly where rules, standards and guidelines are rather complex – or even yet to be formulated. In contexts such as these, products from experienced, established companies offering expertise in research and development - ideally backed up by an effective marketing and sales organisation - are essential. RODAN glass clamp mountings are type-approved and subjected to continuous quality assurance with third-party verification. This ensures that modern, imaginative architecture also comes with the necessary safety of a proven technical solution.



RODAN

	F	FU	FL	K	KH	KU	KLu/H	KLu/U	KLo/H	KLo/U	KLL/H	KLL/U	SKU ^{30/50}
50 mm	⊗	⊗		⊗	⊗	⊗							⊗
60 mm				⊗	⊗	⊗							
70 mm	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	
80 mm				⊗	⊗	⊗							

Glass Clamp Mountings Overview Chart



Postal address:
DORMA-Glas GmbH
Postfach 3268
32076 Bad Salzuflen
Germany

Location:
Max-Planck-Straße 37-43
32107 Bad Salzuflen
Germany

FON ++49 (0) 52 22/92 4-0
FAX ++49 (0) 52 22/92 4-999

www.dorma-glas.com