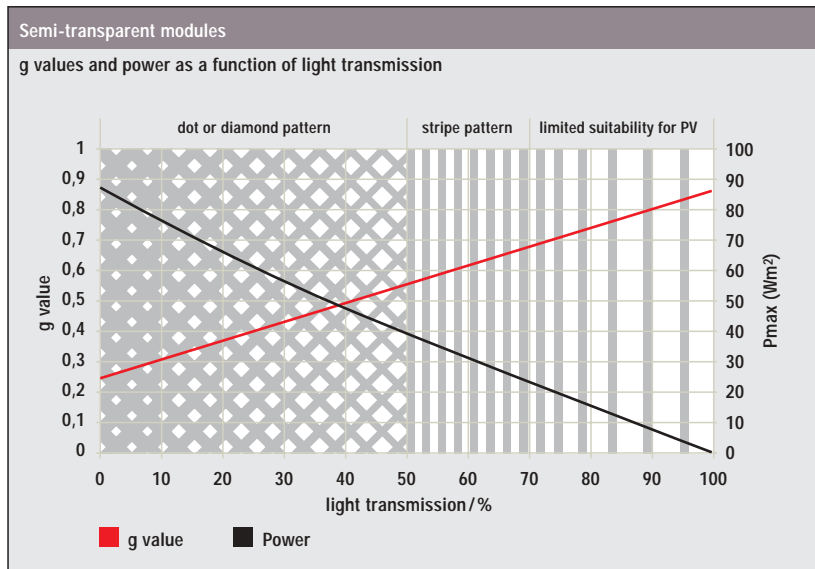


Technical data

Module qualities	
Basic material	CIS in multilayer glass
Contact possibilities	Connecting cables with pre-assembled plug-in system

Dimensions and weight	
Min. dimensions (mm)	80 x 80
Standard dimensions (mm)	600 x 1,200
Max. dimensions (mm)	1,800 x 2,400
Weight for standard structure (g)	length (mm) x width (mm) x depth (mm) x 0.0025

Properties	
G-values (Total energy transmission 300nm – 2,500nm) of the CIS module (multilayer glass): $0,24 < g < 0,86$	
U-values (formerly: K-values) as possible in conventional glass construction	
Structure	U-value (W/m²K)
Multilayer glass (photovoltaic module)	ca. 5.5 ... 5,7
Insulation glass (argon filling, 16mm)	ca. 1.1

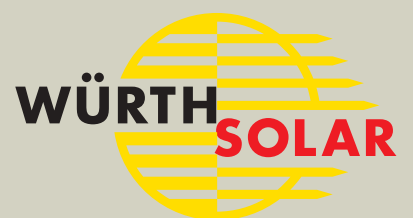


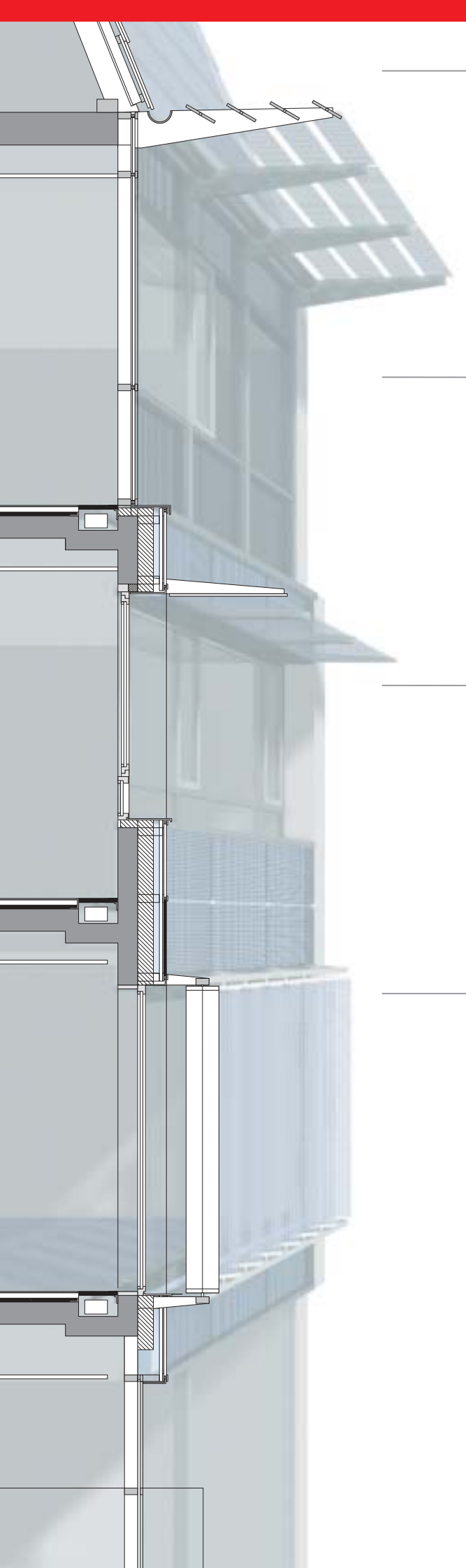
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CIS Modules of Würth Solar

Architecture Live





Aesthetics and Function under one Roof

CIS-Photovoltaic Modules in Architecture

CIS-photovoltaic modules of Würth Solar put a new light on photovoltaics, which is the transformation of solar irradiation energy (light) into electrical energy. The aesthetic black look of the new modules and their flexibility in size and form make them the ideal element for construction and design.

Integrated Instead of Being Placed Upon

Not only the modules themselves, but a possible new approaching of the subject of photovoltaics moves CIS-modules more and more into the focus of architects. As to the planning and the preparation of concepts, the photovoltaic modules, which had up to now often been installed later on buildings, together with the necessary mains and inverters, have always been the task of technical engineers. The future challenge in photovoltaics is, however, to be seen in the conclusive optical integration of the photovoltaic modules in buildings, thus becoming the task of architects.

More Than Just the Generation of Power

Photovoltaic modules can be both integral part of roofs and facades, but exceeding the generation of power, they can also assume classical tasks of building material.

They turn into multi-talents with tasks like

- cold weather protection
- sun protection
- noise prevention
- thermal insulation
- view protection
- electromagnetic shielding

and simultaneously contribute to the reduction of primary power consumption.

This is How Aesthetic Construction Material Can Be

The integration of photovoltaic plants in the outer structure of buildings makes them become part of the architectural overall concept. Thanks to their aesthetic black surface and their flexibility in size, form and performance CIS photovoltaic modules suit very well for tailor-made integration. Differently patterned, semi-transparent modules encourage the imagination of architects. In combination with colored backgrounds and/or printed shaping, the creative integration becomes possible up to the moment the material seems to disappear optically like a chameleon.

CIS-modules offer the chance of creating a symbiosis between the variety of the ideas of engineers and the creativity of architects. All roof and facade surfaces that are directly exposed to solar radiation fit for the installation. When being installed on facades one can expect an annual power yield of 50-60 kWh/m²a and in roof installations the value is about 70-90kWh/m²a. For the shaping the integration in an architectural overall concept and finally the combination of connecting system and module layout are of decisive importance. Applicable are all types of construction that are known from the field of glass construction.

Semi-transparent Alternatives as Point, - Stroke and Stripe Solution



Roofs With and Without Vapor Barrier Insulation

Exceeding the traditional "on-the-roof-assembly mounting" the integration of CIS-modules is possible, too. Then, the modules assume the protective function of the tile. For that purpose module carriers are fixed in module bays from plastics that are fixed on the normal horizontal roof battens. Alternatively, CIS-modules can also be mounted on top of substructures from aluminum.



Facades Without Vapor Barrier Insulation

The CIS-modules are put in a transom and mullion construction. Through corresponding structure insulating glass modules with heat -and sound insulating properties can be manufactured like in the case of usual types of glass. The connecting cables are concealed as they are guided in the mullions and transoms.



Facades With Vapor Barrier Insulation

CIS-modules can, if positioned accordingly, replace the facade elements of ventilated at rear facade systems. Here visible fastenings with point or line elements of clamping are as possible as invisible carriers. The connecting cables can be conducted alongside the substructure without problem.



Sun Protection

It is in the nature of shading systems that they suit very well for the use of CIS-modules due to their pointing to the sun. As to the construction rigid elements as well as movable, tracking elements can be applied, whereas the latter can lead to profit increase of up to 30 %.

