Park@Sol

The modular carport system

- swift and unproblematic mounting
- optimum area utilization
- suitable for all module types
- customized foundations on request

As the global community continues to focus on the issues of climate change and diminishing energy resources, the subject of **energy balance** is increasing in relevance for the strategic development of modern enterprise. Rising fuel costs, compulsory environmental certifications and the desire to create a positive image are major drivers in the construction of new buildings. Incorporating a photovoltaic plant on the company roof can, therefore, be a welcome means of improving the energy balance of the building. In many cases, however, the roof surface area is too small to generate an ideal contribution or even to realize the concept of an energy-autarkic building.

Solar carports provide a welcome supplement of power in wide-area utilization of photovoltaic energy, particularly given that the roof areas on carports are granted the maximum compensation, according to the Renewable Energy Sources Act!

The Park@Sol system is an enhancement of the ever-evolving Schletter-**FS**-open area-mounting systems, with which many projects have been implemented in Germany, throughout Europe and North America and, which have already served to generate several hundred MW of energy. Our experience is not only specific to the area of individual structural optimization for the diversity of regional snow and wind conditions, but lies particularly in the fastening of all module types. To this end, and in close consultation with the respective module manufacturers, numerous fastening options have been developed, particularly for the unframed thin-layer modules which are deployed with increasing frequency in wide-area plants. Products range from fastening elements with bolted module clamps to a special time-saving **Klick**©-mounting technology, through to components for the fastening of wide-area modules: the so-named **OptiBond**-bonding technology, by which the tension in the module glass is reduced to a minimum.

Our many years' experience as market leader in the field of fastening technology assures your investment in the future.

Design

Choose from a number of basic designs available to ensure an optimal and most economic utilization of the areas at your disposal. Each plant is individually configured to the customer´s requirements and to the requested basic design, taking the following parameters into account:

- Module type and design
- Plant size
- Ground conditions
- Distances between supports / apportioning of the parking area
- Design modifications on request

Concrete foundation

- Concrete foundation as vehicle impact protection
- Unimpeded door opening
- Central foundation

☐ **B1** 1-row vehicle arrangement (max. depth 6.0 m)

☐ **B2** 2-row vehicle arrangement (max. depth 13.5 m)

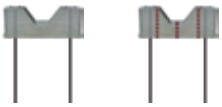
☐ **B3** 2-row vehicle arrangement (max. depth 13.5 m)

Smaller projects with cast-in-place concrete

with micro-pile foundation
Starting from 300 kW crystalline
Starting from 200 kW thin-film

Cast-in-place concrete

Micropile foundation



optionally with cableglands

Pile-driven foundation

- Concrete collar as vehicle impact protection
- The concrete collar height is optimized for unimpeded door opening
- Cast-in-place concrete boarding for concrete ground collar on request

R1 1-row vehicle arrangement

Park@Sol Design

The basic designs of the **Park@Sol** are derived from the structural and thus economic optimization for the respective project application. Into the future, many carports will be constructed on company parking areas either in front of or behind representative company buildings. The carport is the figurehead of the company for visitors, representing a positive eco-friendly image and a future-orientated approach. There is provision, within the structure of the carport itself, to accommodate the **corporate design of a company,** to present it and to make it immediately visible to customers. Our carports can, therefore, be constructed **to any style** or design.

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Fax: +49 8072 9191-9200 · E-mail: solar@schletter.eu · www.schletter.eu · updated 08/2011 · subject to change without notice
Your contact in the UK: Schletter UK Limited, Phone: +44 1296 461 800, Fax: +44 1296 461 801, E-mail: info@schletter.co.uk

12 Lightning protection and potential equalization - important notes

- Lightning protection is not mandatory but is recommended by Schletter
- Anodization or powder-coating of the rack's interior connections **does not** negatively impact the load-bearing capacity with regard to lightning protection!
- Fundamentally, in the case of anodized or powder-coated carports, all conductive components of the assembly which do not come into contact with active electrical components are to be incorporated into the potential equalization. We recommend that all individual module-bearing profiles lying one below the other be connected electrically and, subsequently, that each resulting module block be connected with low impedance to the earthing system. Similarly, all supports, clamps, etc. used for cable routing, or which come into contact with live components, must be earthed. Overall responsibility for the earthing procedures and for the inspection of protective measures prior to operation lies with the designated electrical engineering company.

Technical data

Material	Fastening elements, bolts: High-grade steel 1.4301 Profiles aluminium MgSi05 /EN AW 6063, EN AW 6005 Pile driven foundations: steel, hot-dip galvanized • High life-expectancy, high residual value, no disposal costs • Easy plant-repowering due to modular design
Logistics	• Quick and simple mounting • Maximum level of pre-fabrication • Optimized transport to the construction site
Construction	• Cost-optimized construction based on structural optimization • For framed and unframed modules • Minimum sealing of the soil surface Note: Depending on the design, consideration must be given to the danger of snow masses sliding from the roof. Accessory components for minimizing the impact of snow slide are available on request, however, depending on the module alignment, the possibility of module shadowing must also be considered when planning the application of these.
Accessories	• Cable channels, cable ducts • Lightning protection system **(FSProtect system)** • Components for internal potential equalization • Clamps for different module types • Fastening systems for large-surface laminate modules **(System OptiBond)** • Cast-in-place boardings for concrete ground collars
Structural analysis	• Individual structural analysis based on a geological survey (for assembly designs using driven piles) • Individual system structural analysis based on regional load values • Load assumptions according to DIN 1055, part 4 (03/2006), part 5 (06/2005), part 100 (03/2001), Eurocode 1 (06/2002), DIN 4113, DIN 18800, Eurocode 9 and further or corresponding national norms • Optimized profile geometries with highly efficient material utilization • Verification of all construction components based on FEM-calculation • **Vibration simulation** available on request, for testing wind-load • **Earthquake simulation** optional 
Delivery and services	• Ground survey and structural analysis • Individual structural analysis of the rack based on regional data • Pile driving of the foundations and delivery of the complete assembly material • **System boarding for concrete ground collars available on request** • **Optional:** mounting • **Optional:** complete module mounting
Lightning protection, Earthing, Potential equalization	• Possible extension with outward lightning protection systems • Components for the internal potential equalization • Potential equalization certified acc. to VDE 0100, part 712

Installation images (images: JUWI Solar, Wörrstadt)


Supporting structure


Mounting of purlins


Module mounting

The mobility of the future belongs to the electric car!

The Schletter Solar-Carport system Park@Sol© does not simply comprise the extended photovoltaic plant with full compensation for electricity fed into the grid, but also the basis for an ally-friendly, image-promoting fleet of electronic company vehicles, ranging from the simple electric scooter to commercial vehicles, through to the prestigious electric sports car. To ensure that the company´s fleet of the future can really profit from the advantages to be gained from energy balance, CO2-certificates and environmental friendliness, a supply of renewable energy to power these vehicles is indispensable. So what is more natural than running a fleet of electric vehicles which are powered by the the company's own photovoltaic carport!

Present your visitors with your own vision of future mobility!

Our **P-CHARGE System** provides the charging stations for your fleet, custom-delivered to the configuration you require, with or without a statement of consumed energy and, of course, in the design of your choosing. A strong image of environmental awareness right in front of your door!

P-CHARGE System - the extension to the Solar-Carport from Schletter.
A variety of designs for ground- or wall mounting are available on request

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Your contact in the UK: Schletter UK Limited, Phone: +44 1296 461 800, Fax: +44 1296 461 801, E-mail: info@schletter.co.uk