

Building the solar future together

03.07.2023



- AVANCIS – Who are we ?

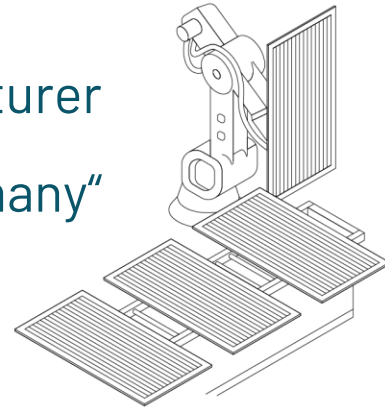
- Technology approach – Why CIGS?

- Our Solar Products and Services

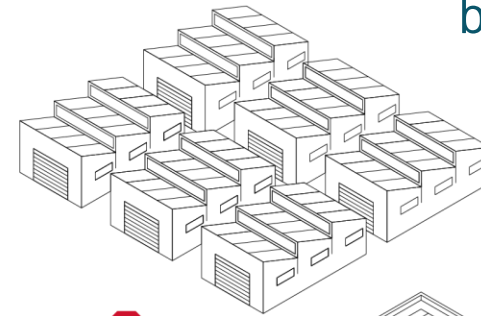


Europe's leading Tech Provider for Global Solar Energy

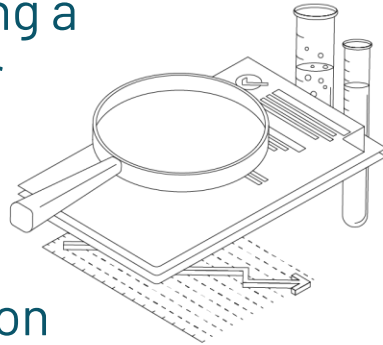
CIGS manufacturer
„Engineered & Made in Germany“



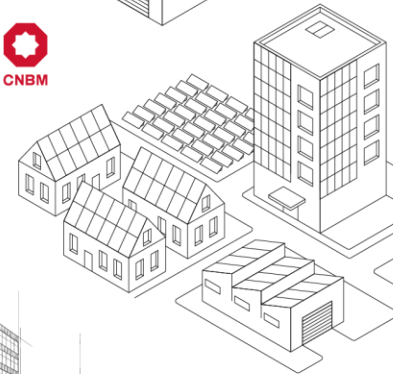
Premium solar products driven
by excellence and aesthetics



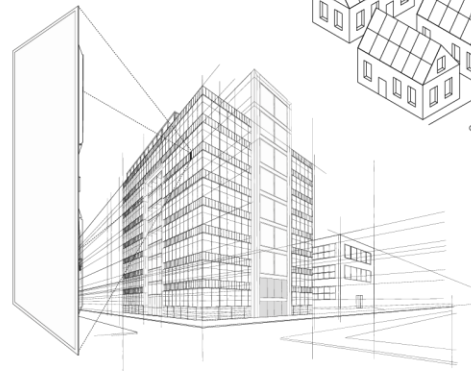
40 years being a
CIGS pioneer



Production: Torgau
R&D: Munich
→ 220 employees



Production
capacity of
100MW/a



Since 2014 part of
CNBM group

Global Activities – international partner network



- DACH Region – Germany, Austria, Switzerland
- The Benelux – Belgium, Luxembourg, Netherlands
- The Nordics – Denmark, Sweden, Norway
- The Baltics – Lithuania, Ukraine
- Poland, Czech Republic
- France
- Italy
- MENA Region, Egypt, Jordan, Oman, UAE, Saudi Arabia
- ...

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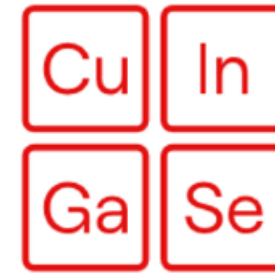
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Thin-film Technology „Made in Germany“

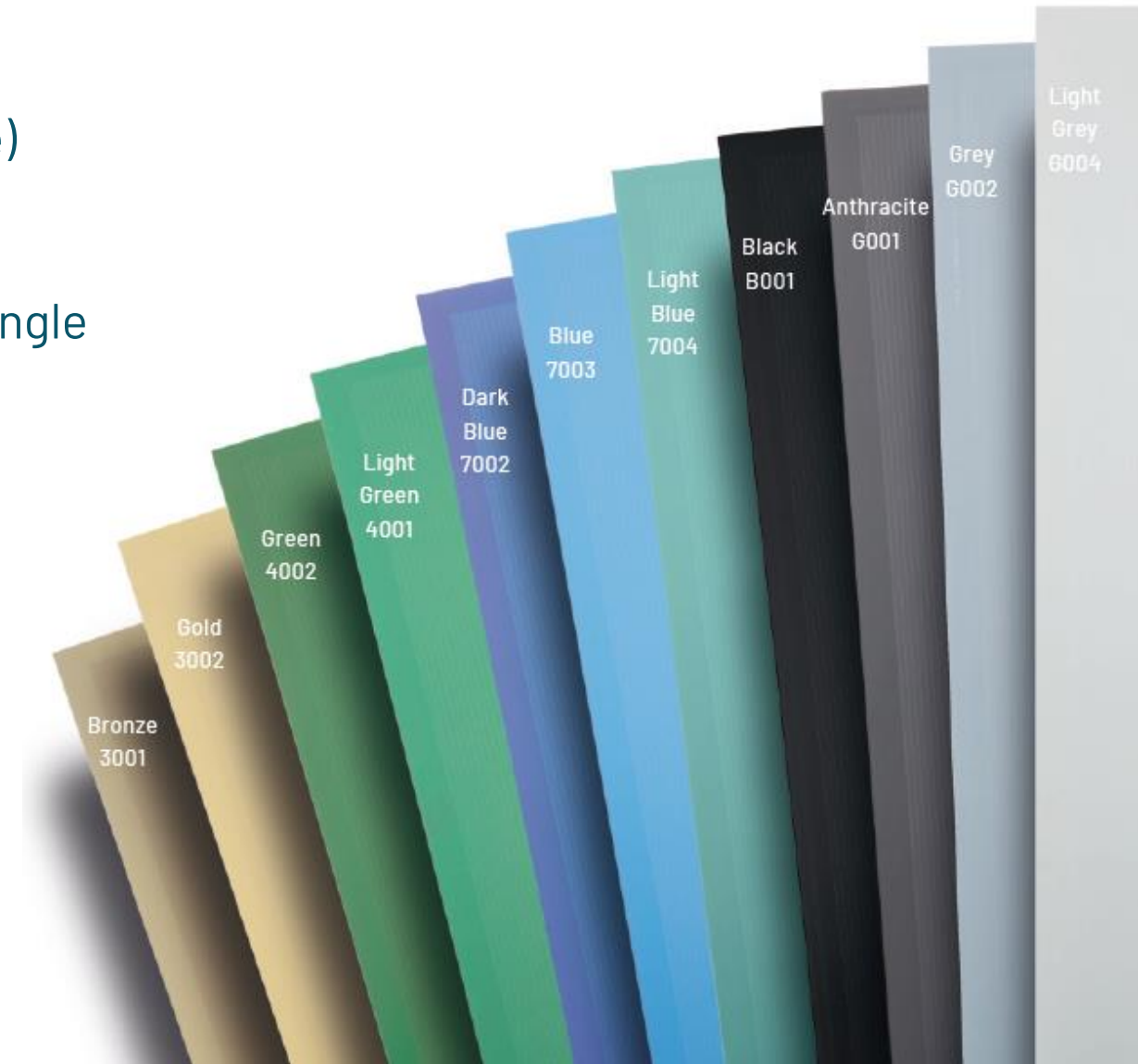
- Solar cell manufactured by a thin layer of copper, indium, gallium and selenium on glass
- Total thickness of 38mm
- Glass in → modules out

Vertical production secures high product quality with 100% in-house control

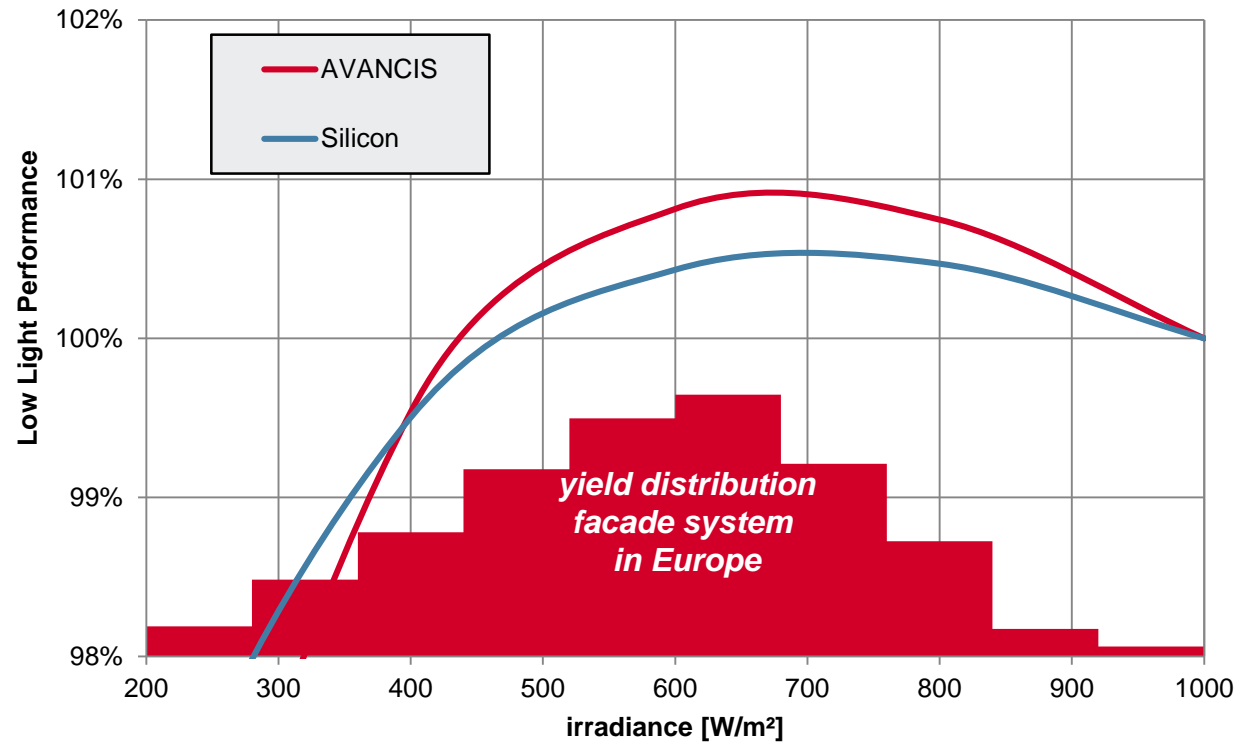


USP: Design

- Unique design in 11 colors (more to come)
- Matt finish and no glare
- Colors with variation depending on the angle available
- Very small joint with 10mm – 15mm
- Easy to combine with other materials e.g. slate



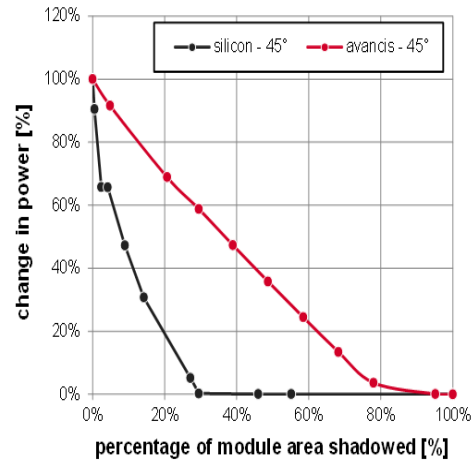
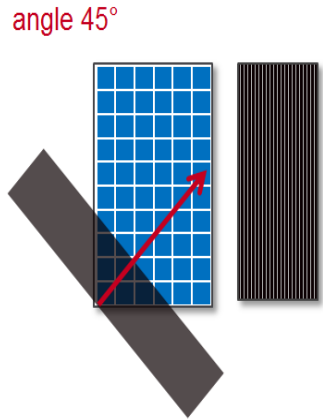
USP: Low Light Performance



- CIGS has the highest energy yield (kWh/kWp) on average due to its excellent low light performance

→ the solar cells work when others sleep

USP: Shadowing Performance



Visualization

Shading	Silizium	AVANCIS
5%	Power 95%	Power 95% (straight)
60%	Power 0% (Transparent area, 30%)	Power 60% (light aura transparency increases) (straight)
60%	Power 0%	Power 95% (inclined)

Slide bar, Toggle button

Higher shading tolerance: even when the module is half-shaded, the cell still produces electricity.

Cost Savings and Low Carbon Footprint



- Costs: Efficient use of resources due to low material and energy costs for module production vs c-Si
- Free of toxic ingredients – recycling acc. EU end-of-life norm

No cadmium
No lead

- Low carbon footprint / energy payback time

CIGS: **23g per kWh** / 12 – 18 Months

c-Si: 50 – 60g per kWh / 18 – 24 Months

Fossil fuels: 700 – 1000g per kWh / ...

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Comparison in Selected Parameters

PowerMax®

SKALA

SKALA Industry

Remarks

PowerMax® is a product with considerable significance for Avancis in the past decade. Recently the product has been discontinued

SKALA offer architects, civil engineers, facade planners the possibility to realize individually designed solar facades with the highest aesthetics

SKALA Industry is available in iconic industrial black for the ultimate in performance at a more affordable price

Color Options

Exclusively black ●

Homogen color experience;
Multi color options ● ● ● ● More

Exclusively black ●

Efficiency

Up to 160w

Up to 145w

Up to 150w

Size

Uniform standard size

Uniform standard size as well as customized sizes

Uniform standard size

Mounting

Joint mounting „In-Joint“

Hook-in mounting „Hook-In“

Joint mounting „In-Joint“

Front Glass

Rolled Glass

Rolled Glass

Float Glass

For detailed information about comparison, please find the sheet at AVANCIS download center: <https://www.avancis.de/en/contact/downloads>

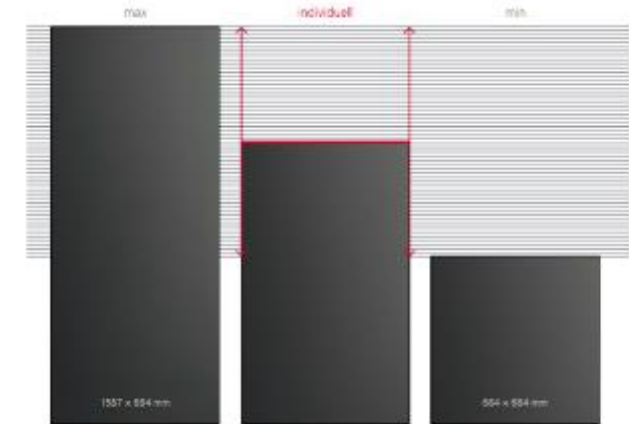
Premium PV module for solar parks and roof-tops

- ❖ Perfect size for one-man's handling 1.587mm x 664mm x 38mm (1.05 m²) → 17 kg
- ❖ Opaque appearance, seamless fitting in the surroundings
- ❖ Easy mounting and replacement with clamps and back-rail system
- ❖ PID free → compatible with all inverters
- ❖ Performance:
 - 140 – 160W plus-sorted power classes
 - Temperature range from -40°C / +85°C
 - 10 year product / 25 year performance warranty

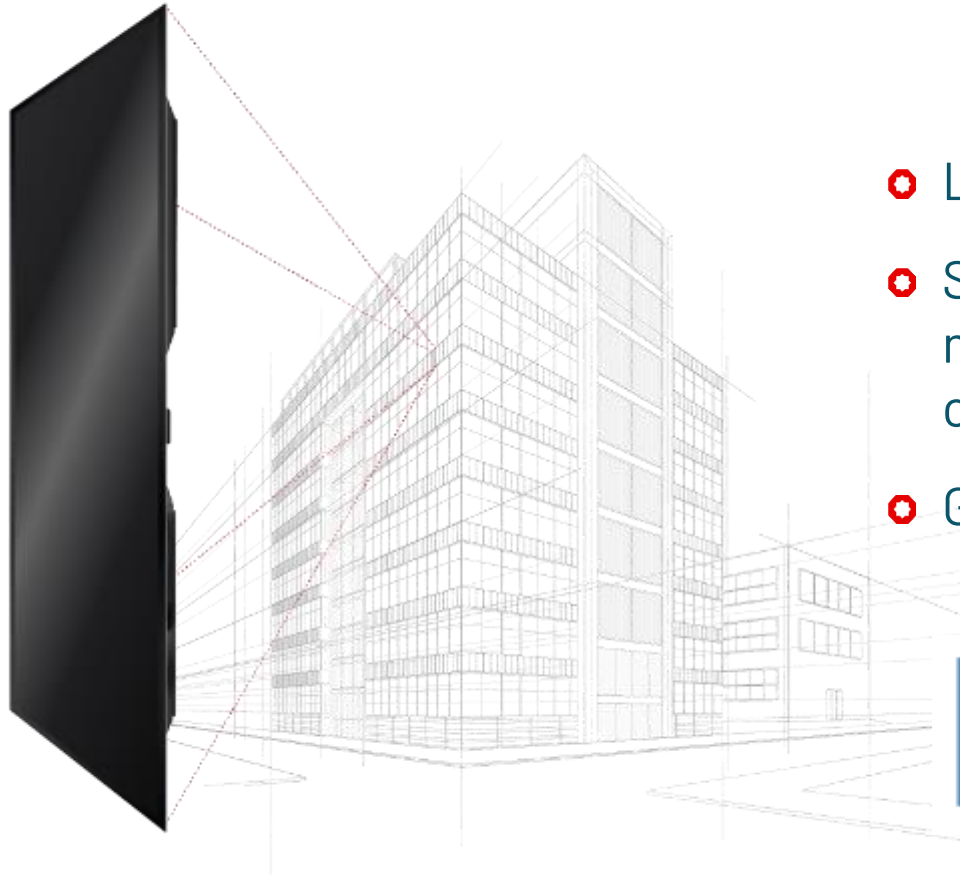


Architectural PV Module for BIPV

- SKALA is designed as premium building component
- Designed for ventilated façades
- 1.587 mm x 664 mm standard size, individual sizes possible
- Combinable with any other façade cladding material
- Easy mounting and replacement with clamps and back-rail system
- Portrait and landscape mounting
- Performance:
 - 120 – 140 W depending on the color
 - Fire classification B1
 - 10 year product / 25 year performance warranty



SKALA – certified as Building Component



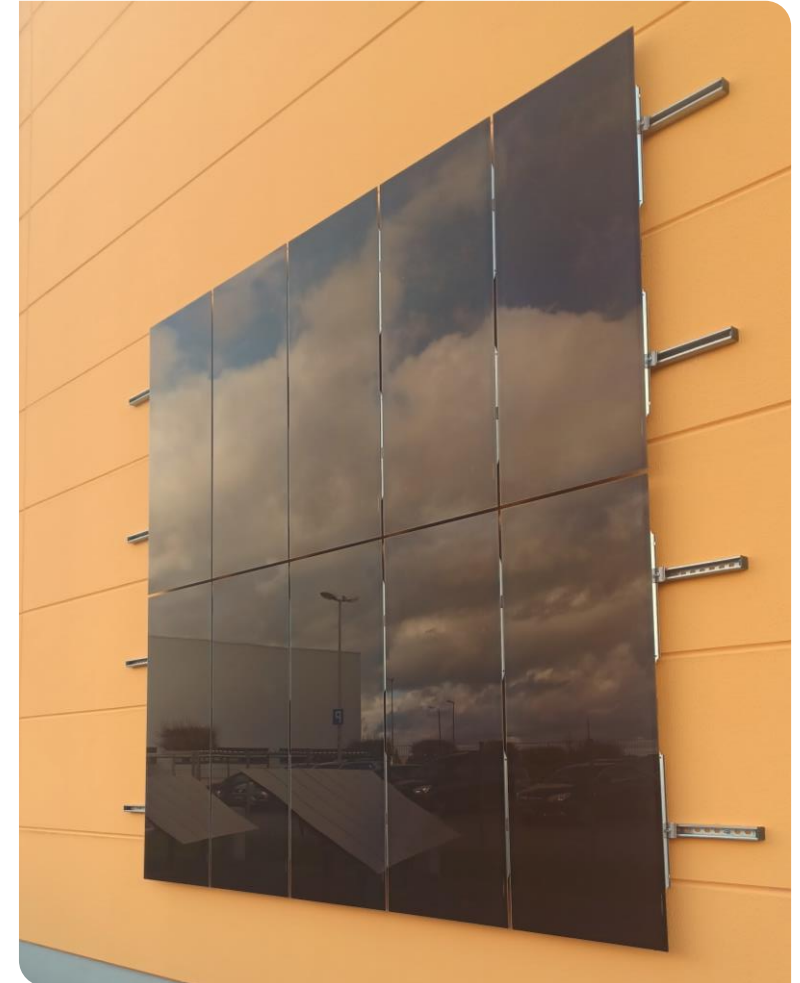
- Launch 2016
- SKALA was the first glued PV module approved as building component by DIBt
- General Building approval (abZ)

Deutsches
Institut
für
Bautechnik



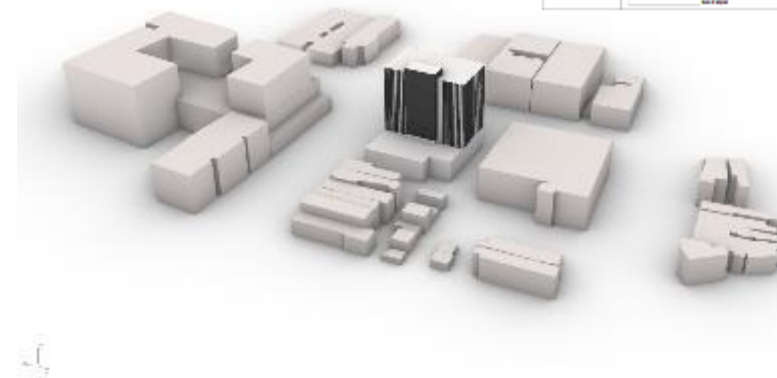
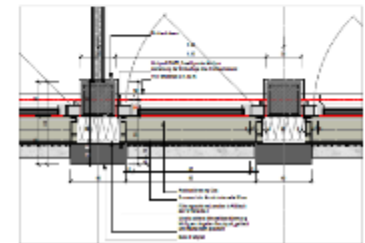
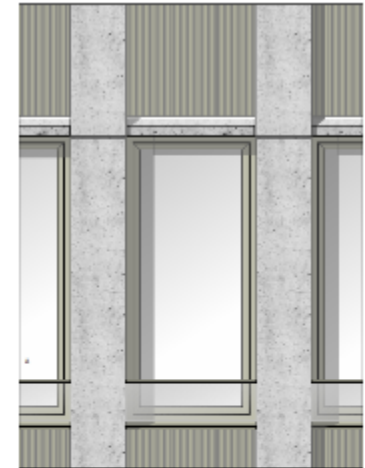
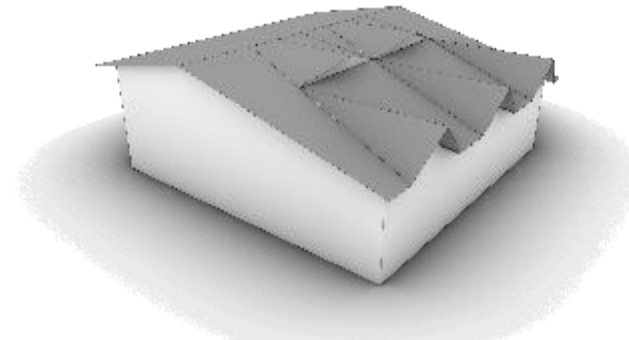
Industrial Option with BIPV

- SKALA Industry for industrial facades
- Designed for ventilated façades
- 1.587 mm x 664 mm standard size
- Easy mounting and replacement with clamps and back-rail system
- Portrait and landscape mounting
- Performance:
 - 150 – 160 W
 - 10 year product / 25 year performance warranty



Technical and Design Consultancy

- Sales and economical consultancy
- Project Management of partner network for turn-key solutions
- Electrical planning, string sizing calculations
- Panel distribution
- 2D drawings & 3D Visualization
- Shadowing & Radiation Analysis
- Energy yield calculations

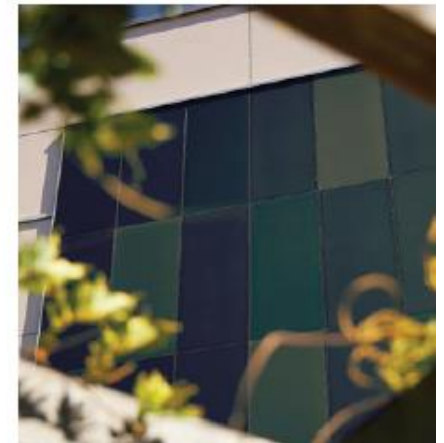


Stadtwerke Bad Hersfeld



Anthracite
G001

Brünnenstraße Bern



Helmholtz-Zentrum Berlin



Blue
7003

Kletterzentrum Eichstätt

Black
B001



Sara Kulturhaus



Bronze
3001

Westspitze Tübingen

Bronze
3001



Stadtarchiv Amsterdam



Volg Konsumwaren AG



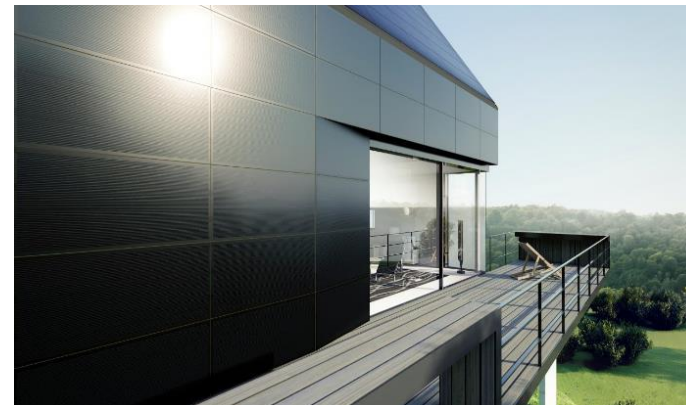
Blue
7001



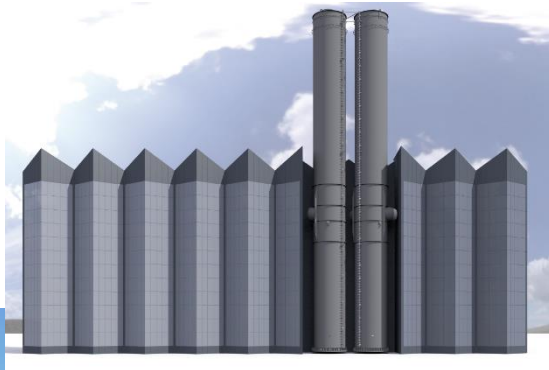
Villa Krakau / PL



Black
B001



GAMOR Saarbrücken



Light Grey
G004

**Thank you for your
attention!**

AVANCIS GmbH

Solarstraße 3
04860 Torgau

www.avancis.de | www.skalafacade.com
sales@avancis.de or augustin.rohr@avancis.de

