

Empowering Tomorrow

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Displaying the Future

# solum

Empowering Tomorrow

Displaying the Future.

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### GLOBAL PRESENCE

### ABOUT SOLUM

# EVOLUTION IS AN INNOVATION

SOLUM leads sustainable future innovation through power solutions and digital signage technology. We create new value through power module technology that maximizes energy efficiency and digital signage solutions that transform advertising and business environments.

Furthermore, we drive change across industries and daily life through IoT technology. We strive to achieve sustainable growth in harmony with the environment through technological innovation and creative solutions.

SOLUM connects tomorrow's technology with today's value as we grow alongside our customers toward a better world.

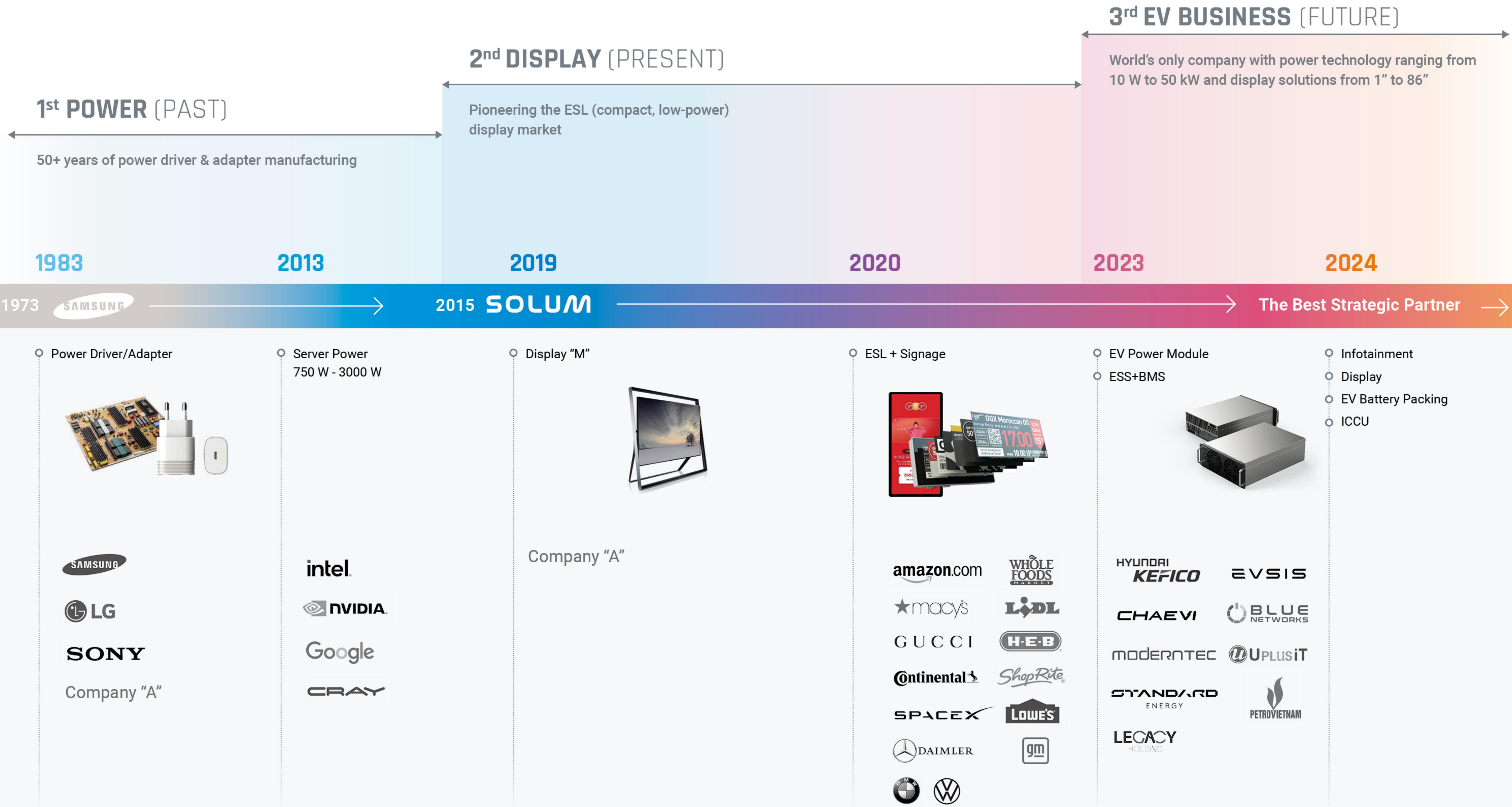
The logo for SOLUM is displayed in a large, stylized, lowercase font. The letters are composed of a gradient that transitions through various colors, including blue, purple, red, orange, and yellow, creating a vibrant and modern appearance.

## ABOUT SOLUM

# SOLUM HISTORY

## Your Premier Strategic Partner in Transformation and Innovation

Building on over 50 years of technological expertise and quality heritage from Samsung Electro-Mechanics, SOLUM continuously strives to become a global leader in electronic components and smart solutions. We have supplied various high-value advanced electronic components through ongoing technological advancement and innovation while expanding our business into eco-friendly energy and healthcare, further enhancing our technological leadership.



## ABOUT SOLUM

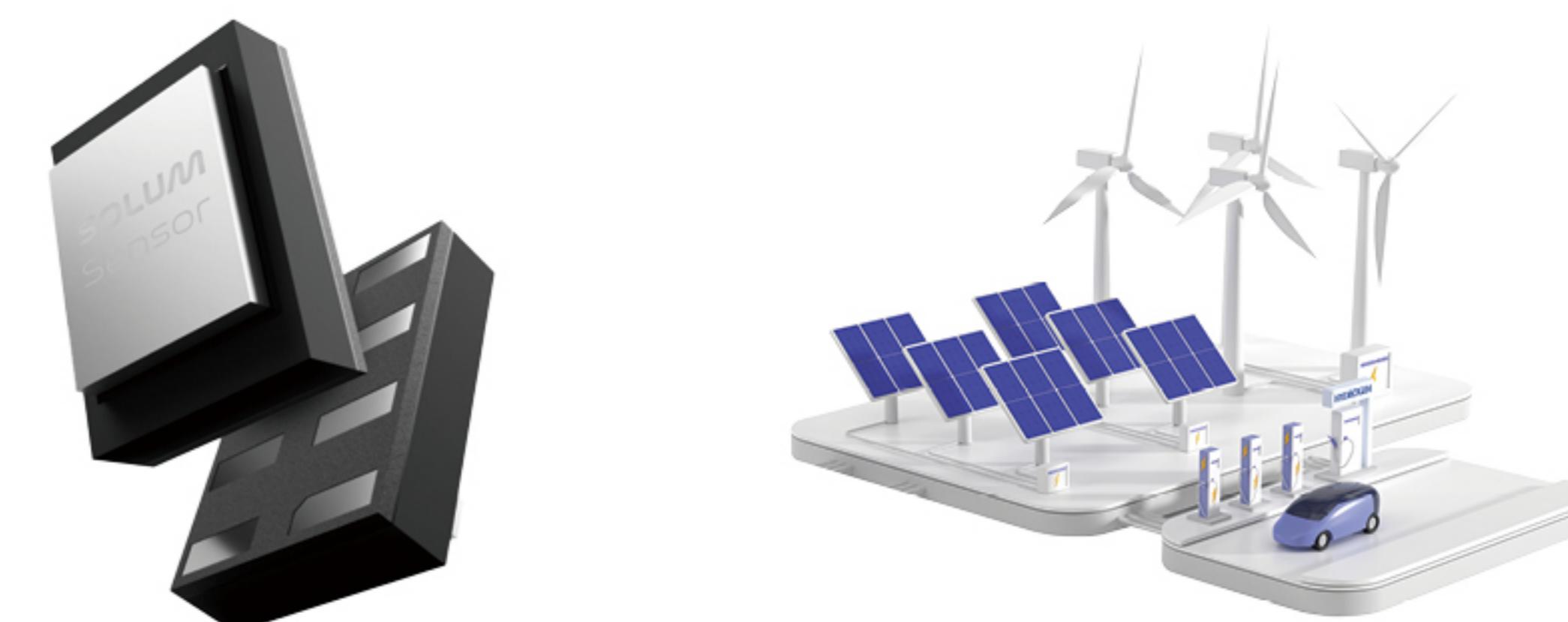
## BUSINESS HIGHLIGHT

## Global Leader Providing Industry and Life Solutions for a Better Future

As a global electronic components and smart solution provider, SOLUM is growing together with customers and partners by increasing customer value and establishing the industry's best quality assurance system with a differentiated customer perspective and advanced development.

## CORE BUSINESS

## NEW BUSINESS



## ESL

## DISPLAY

## POWER

## SENSOR

## ENERGY SOLUTION

## HEALTHCARE

- Low energy consumption solution with retail dynamic pricing information

- 3-in-1(A single board integrated with Power, Video board, and Tuner)
- Digital signage(Advertisement Display, Retail Display)

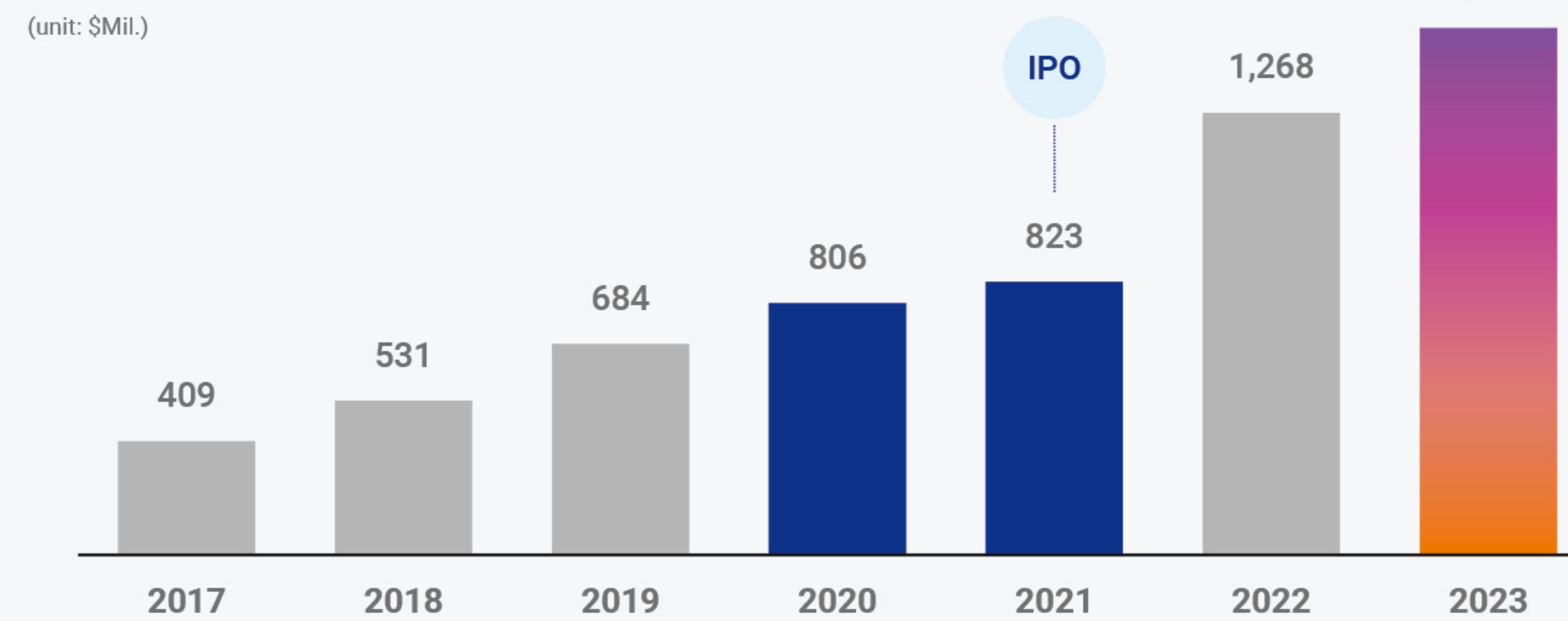
- Inner power adapter for electronics product
- Wire and wireless adapter
- EV Power Module

- Created Ultra-thin high-sensitivity semi-conductor
- TWS (True Wireless/Wireless earphone) Expand to the material parts with proximity sensor

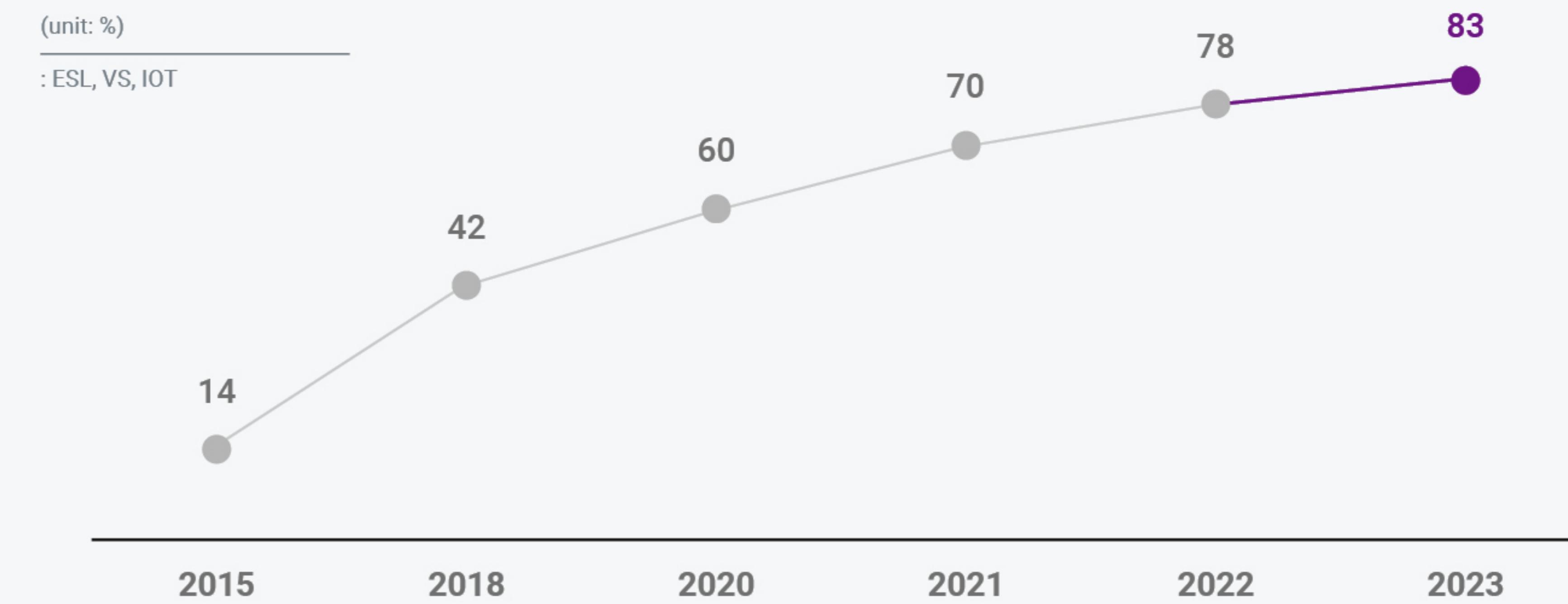
- EV Charger
- ESS, BSS etc. BMS solution
- Re-used battery for smart street light

- Medical ESL solution
- Cancer diagnosis for expansion medical market
- Health-tech devices
- EARX Treme (Heartbeat, Temperature)
- Mindy (Brainwave, Heartbeat)

## MAJOR OUTCOME



## NEW BUSINESS



# POWER SOLUTION

## Innovative Next-Generation Power Module

SOLUM is positioning itself as a leader in next-generation power infrastructure through its core focus on maximizing power efficiency and minimizing energy loss. Our power technology advances contribute to sustainable energy solutions and 'carbon neutrality' goals.

- **Maximizing Power Efficiency**

Developed liquid cooling systems to reduce unnecessary energy consumption using fan-based cooling methods.

- **Securing Energy Flexibility**

Supports the repurposing of vehicle battery energy for various applications through bidirectional communication (V2X).

- **Building Future Smart Grid Portfolio**

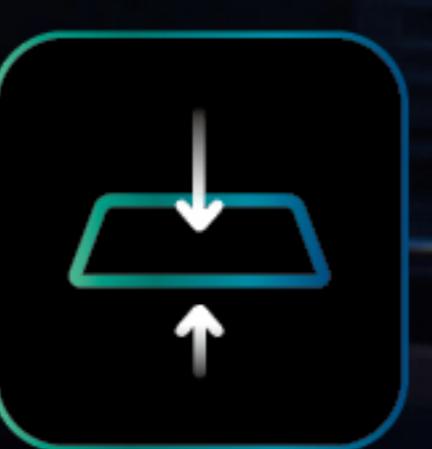
Enhances power operation stability by segmenting AC, DC, and Power Bank groups and implementing self-diagnostic functions and OTA (Over-The-Air) updates.



Ultra-High  
Efficiency



Compatible with  
the Global Charging  
Standard



Compact  
Form Factor



Ultra-High-  
Power Density



Ultra-Wide Output  
Voltage Range



Ultra-Small Output  
Ripple Voltage



Ultra-Small  
Standby Power  
Consumption



Complete Protection  
and Alarm Functions



# POWER MODULES

## Innovative Next-Generation Power Module



Power Module



**30 kW**

**Ultra high-performance 30 kW power module for EV chargers with advanced features.**

It has a compact design and high power density with a wide output voltage range, minimal ripple, various protection and alarm functions for safe and reliable operation.

- Ultra-high Power Density : up to 44.6 W/in<sup>3</sup>
- World smallest size : W11.8 x H17.2 x D3.3 inches (W300 x H84 x D437.5 mm)
- Ultra-wide output voltage range : 150 VDC to 1000 VDC
- Ultra-high efficiency > 96.5%, rated efficiency > 95.5%@1000 V, 30A
- CAN Bus communications with RJ45
- High derating temperature : 140°F (60°C)
- Ultra-small output ripple voltage, peak-to-peak ripple = 2 V
- Ultra-small Standby Power consumption : ~10 W
- Complete protection and alarm features

### Innovative Next-Generation Power Module

SOLUM's power modules feature a high power factor, efficiency, power density, and reliability, and can be digitally controlled—all integrated into a compact package. Our power module lineup includes an air-cooled 30kW power module available in both open and closed enclosures, as well as a 50kW power module in a closed enclosure. Hot-pluggable capabilities, along with multiple intelligent protection and alarm functions, work together to prevent failures and ensure consistent reliability.

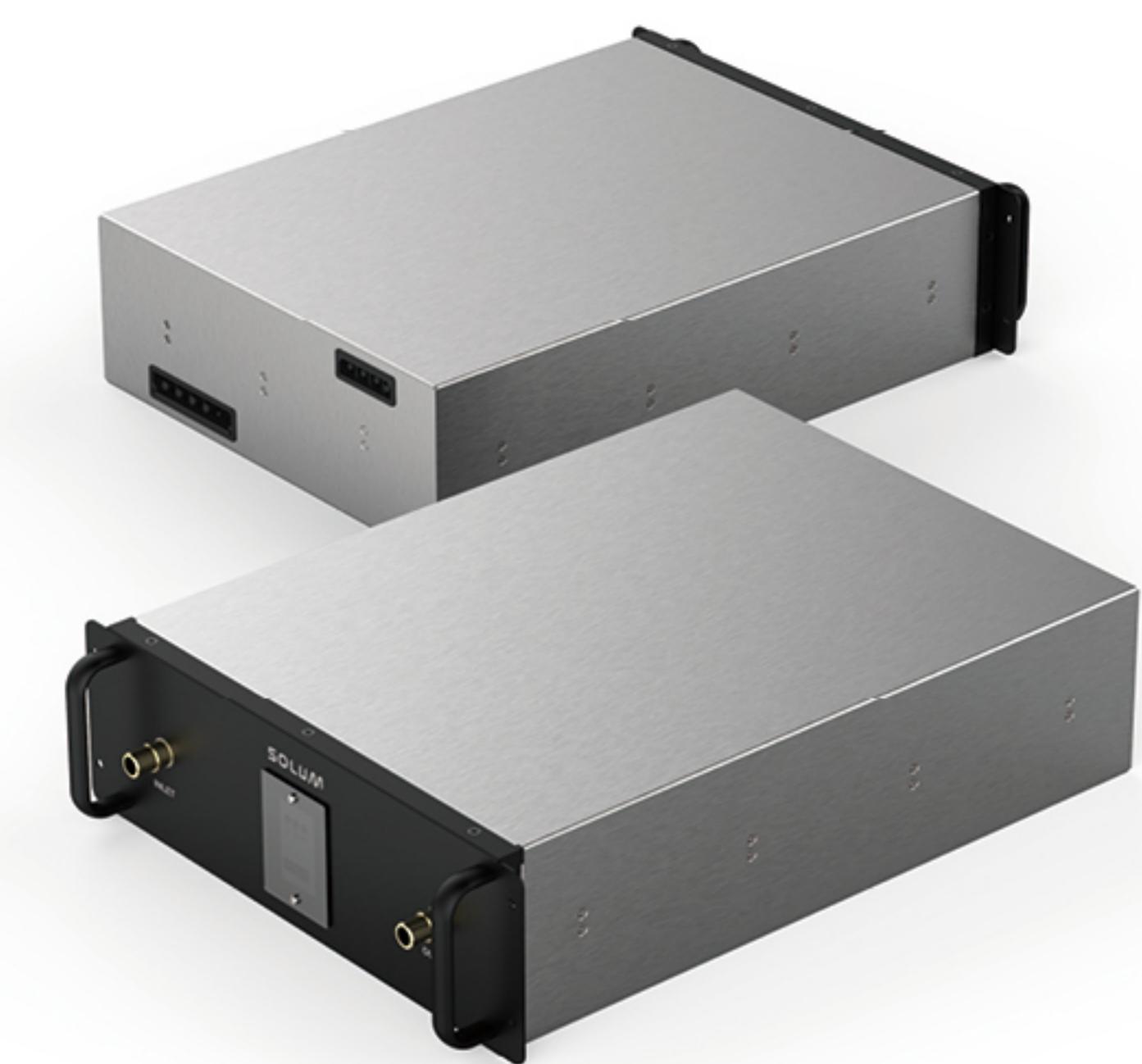


**50 kW (Uni/Bi-direction)**

**'SOLUM PowerGuard,' dedicated to future EV charging power, is a world-class active power module that ensures hardware reliability and firmware stability through self-diagnostic and automatic recovery functions.**

The self-diagnosis function of the 50kW power module "SOLUM PowerGuard" can support H/W operation self-inspection and automatic recovery functions. In addition, the bidirectional power conversion technology will be the most innovative energy alternative solution as an energy security measure for insufficient available power.

- World's highest Power Density : 40.36 W/in<sup>3</sup>
- World's smallest size : W12.7 x H4.92 x D19.8 inches (W322.5 x H125 x D503.5 mm)
- Supports uni/bi-direction with same size
- Ultra-high efficiency : Max 97%
- Low noise: support silent mode, provide three levels
- Ultra-low Standby Power consumption : <10 W
- Wide working temperature range : -40°F to +167°F (-40°C to +75°C)
- High derating temperature : 140°F (60°C)



**50 kW (Liquid Cool)**

**Zero Noise Urban-Friendly Power Module: Advanced Technology Delivering Peak Performance in Harsh Installation Environments**

The 50kW Power Module "SOLUM PowerGuard" features self-diagnostic capabilities for hardware operation self-check and automatic recovery functions.

Additionally, bi-directional power conversion technology will be the most innovative energy alternative solution for addressing power availability challenges.

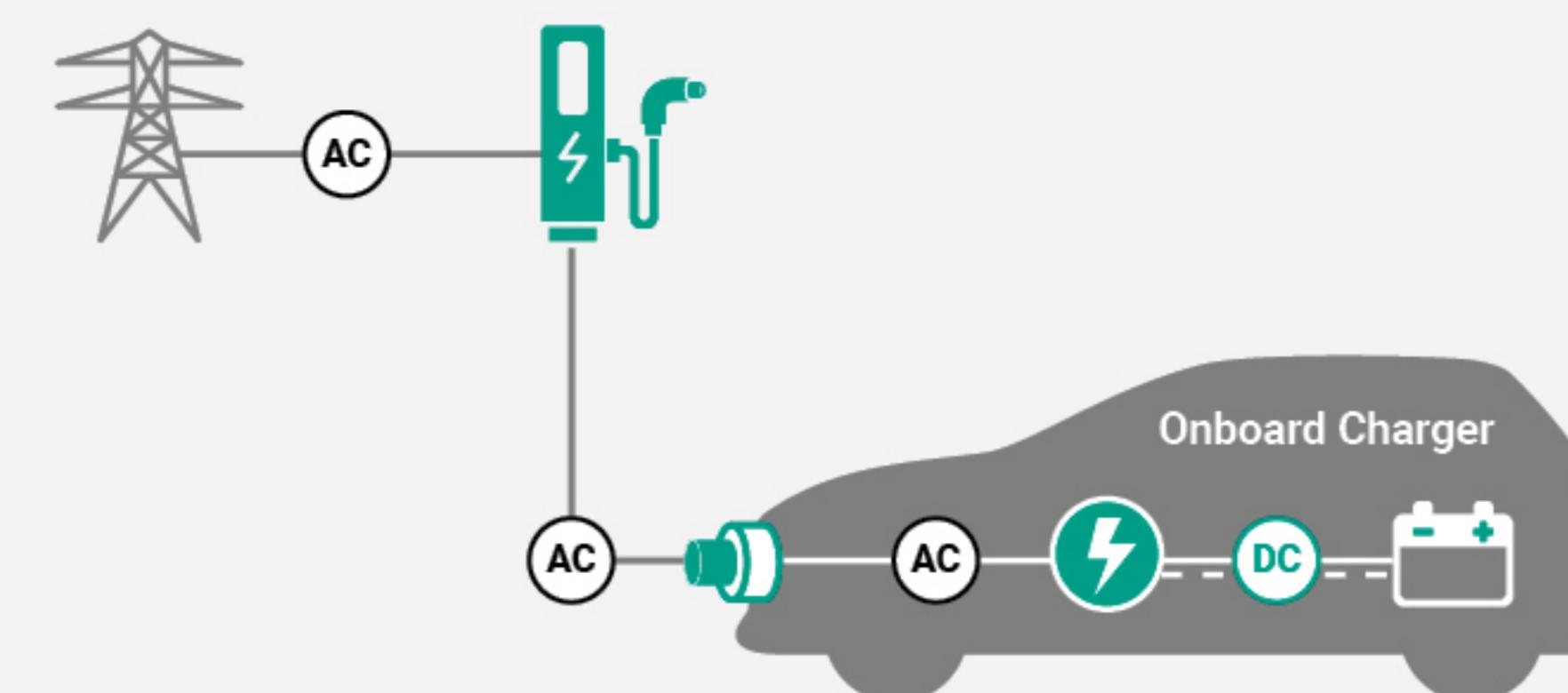
- Zero acoustic noise : 0 dB
- World's highest Power Density : 42.7 W/in<sup>3</sup>
- World's smallest size : W13.4 x H4.7 x D18.5 inches (W340 x H120 x D470 mm)
- High altitude installable : ≤3000 m
- High derating temperature : 140°F (60°C)
- Ultra-high efficiency : Max 97%
- Ultra-low Standby Power consumption : <10 W
- Wide working temperature range : -40°F to +167°F (-40°C to +75°C)



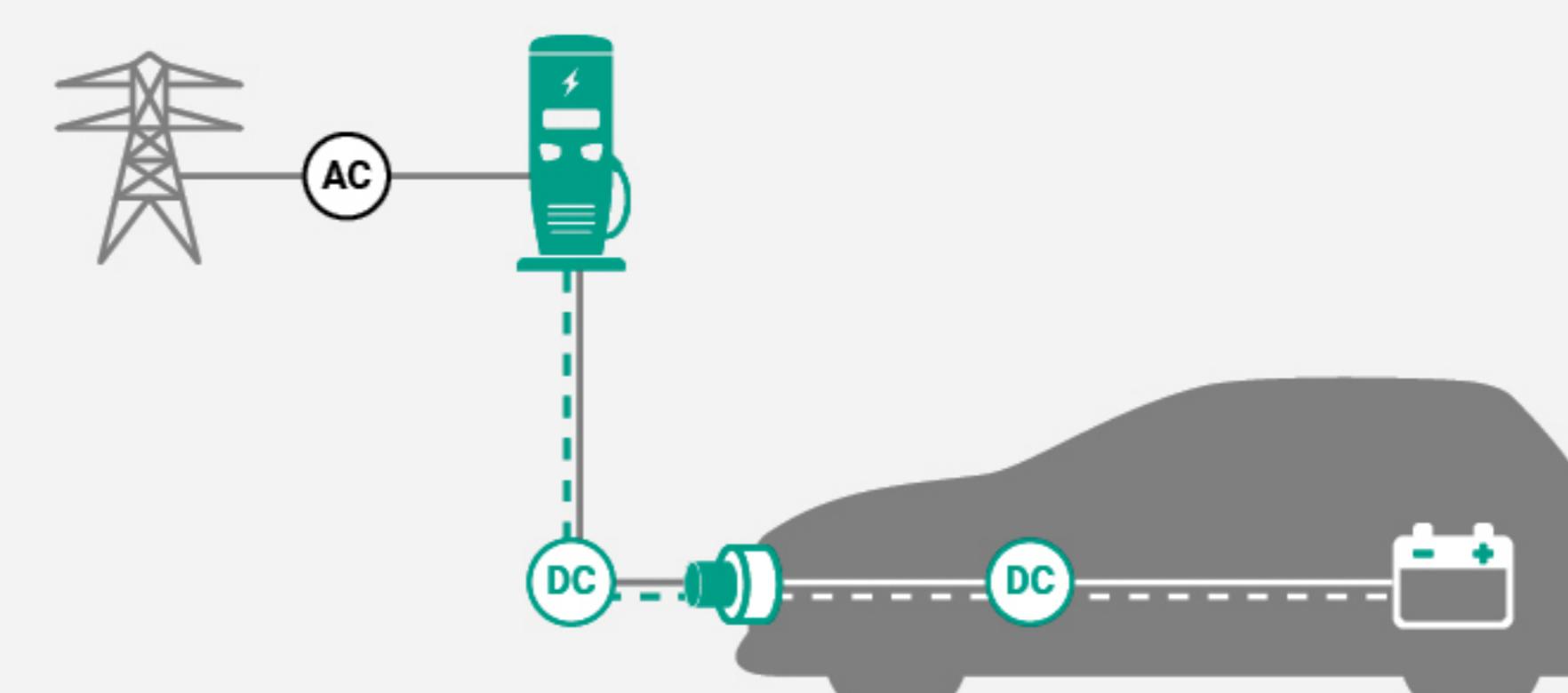
# EV CHARGER

## Smart EV Charging Solution Provider

### AC Slow Charger: Up to 22 kW



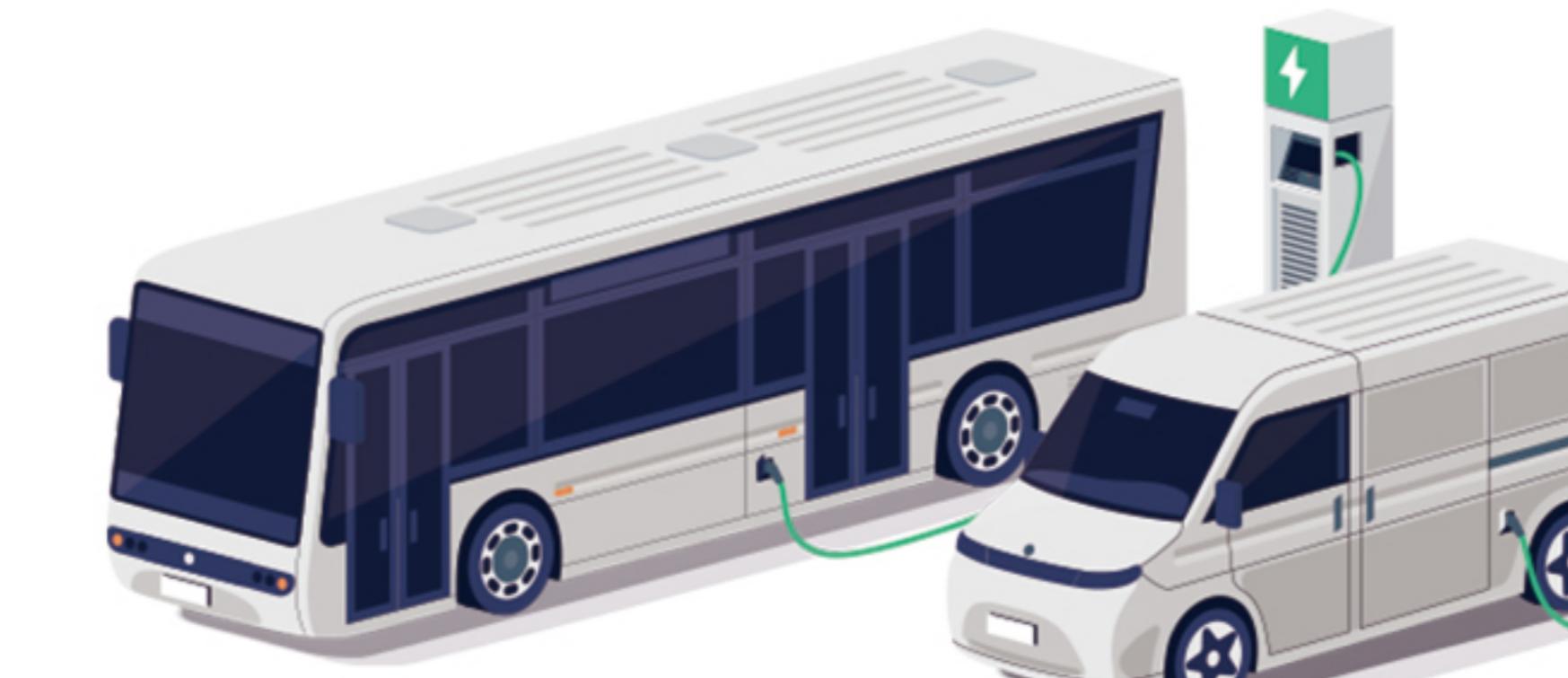
### DC Fast Charger: Up to 400 kW



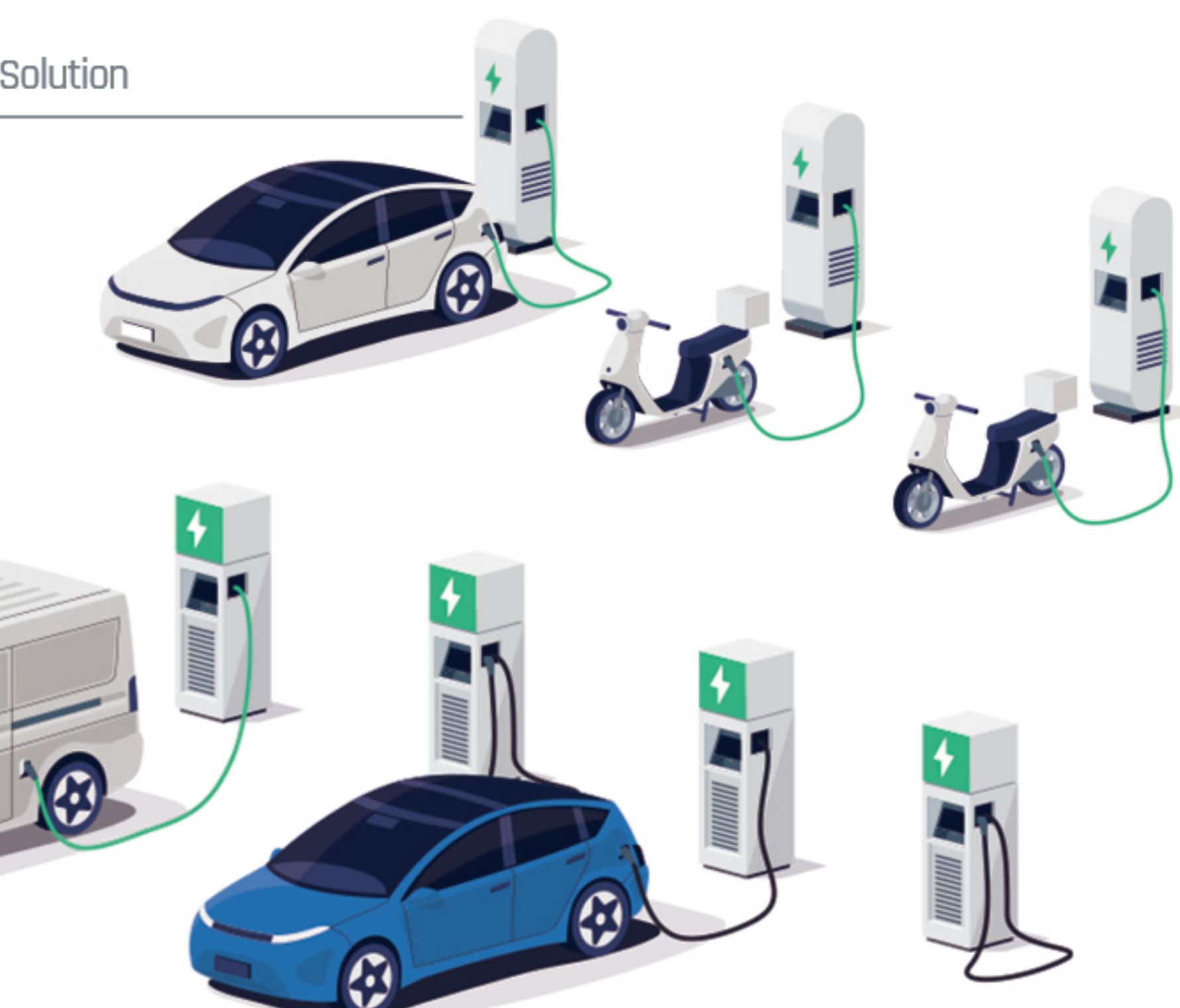
### Efficient and Reliable Charging for Every Electric Vehicle

The SOLUM Power Module solution offers many use cases, making it versatile for various EV charging applications. Our power module provides efficient and reliable charging for all, whether public charging stations, workplace charging facilities, commercial fleet depots, or residential charging setups.

#### Fast Charger Solution



#### Slow Charger Solution



#### Feasibility

While EV Charging projects involve high costs, the ROI (Return on Investment) provided by our Electric Charging Unit ensures rapid investment amortization, enabling more EV Charging projects and providing an extra source of profit to EV Operators.

#### Sustainability

The sustainability will be reached through Recycled Polyethylene Terephthalate (PET) Injection Molding.

#### Productive and Efficient Design

Vent holes were incorporated to ensure adequate heat dissipation, and the front full screen was utilized as a cover, taking productivity into account. Additionally, a rear cable cover was added to organize the rear cables neatly, considering not only aesthetic elements but also design aspects focusing on productivity and efficiency.

#### Sales Performance / Market Impact

Sales performance can be measured by the additional revenue generated through advertised sales, while market momentum is driven by promotions displayed on electronic signage.



# SERVER POWER SUPPLY SOLUTION

Intelligent Power That Accelerates Your Evolution

## Optimized and Uninterrupted Power Flow

SOLUM provides a range of power supply units designed for high-performance computing and telecommunication equipment. Our PSUs ensure reliable, fail-safe power delivery, even during malfunctions.

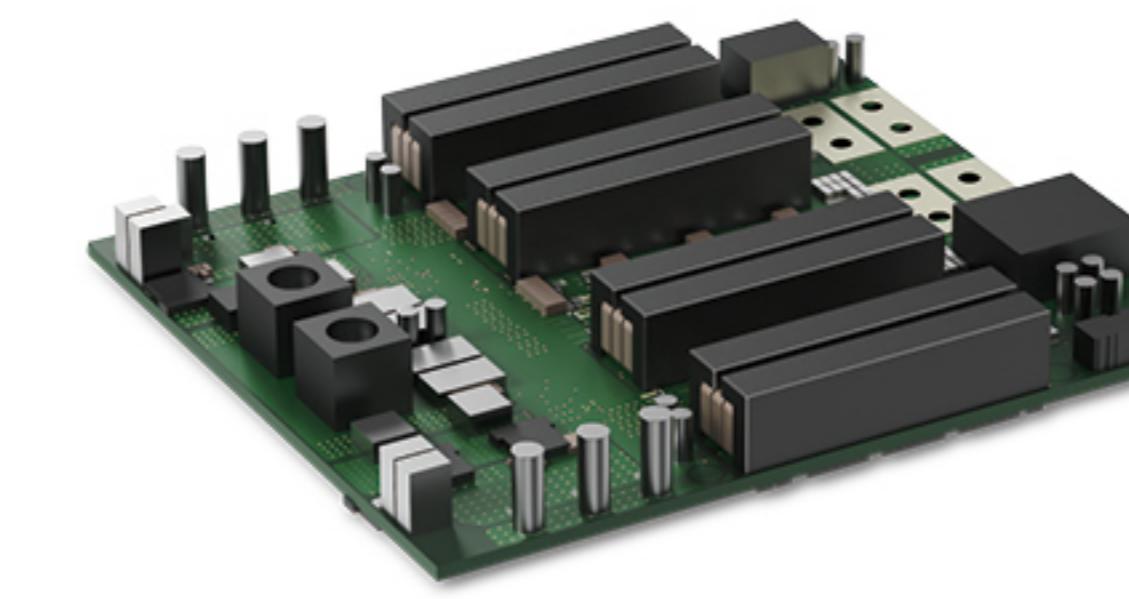


### Liquid Cooled 2.4 kW

#### Liquid-Cooled Power Supply for Data Center Servers : Leading Sustainability and ESG

The 2.4 kW liquid-cooled solution is a breakthrough energy supply system that reduces power consumption—typically 40% of total power in data center air cooling systems—while minimizing noise pollution from fan operation. The liquid cooling system reduces power loss by over 1% under maximum server load conditions and extends product lifespan by up to 30% by blocking contaminant intake through fans.

- 1Ux73.5x185 Liquid Cooled 2.4 kW PSU  
(The world's first, Cold-plate built-in type)
- Follow MCRPS standardized requirements
- No fan noise from the PSU in the data center
- Enhanced PUE by removing loss of fan operation
- Size : W2.9 x H7.3 x D1.9 inches (W73.5 x D185 x H40 mm)
- Input Voltage : 90~132 Vac
- Max. output power : 1,400 W
- Operating ambient temperature : 23°F - 131°F

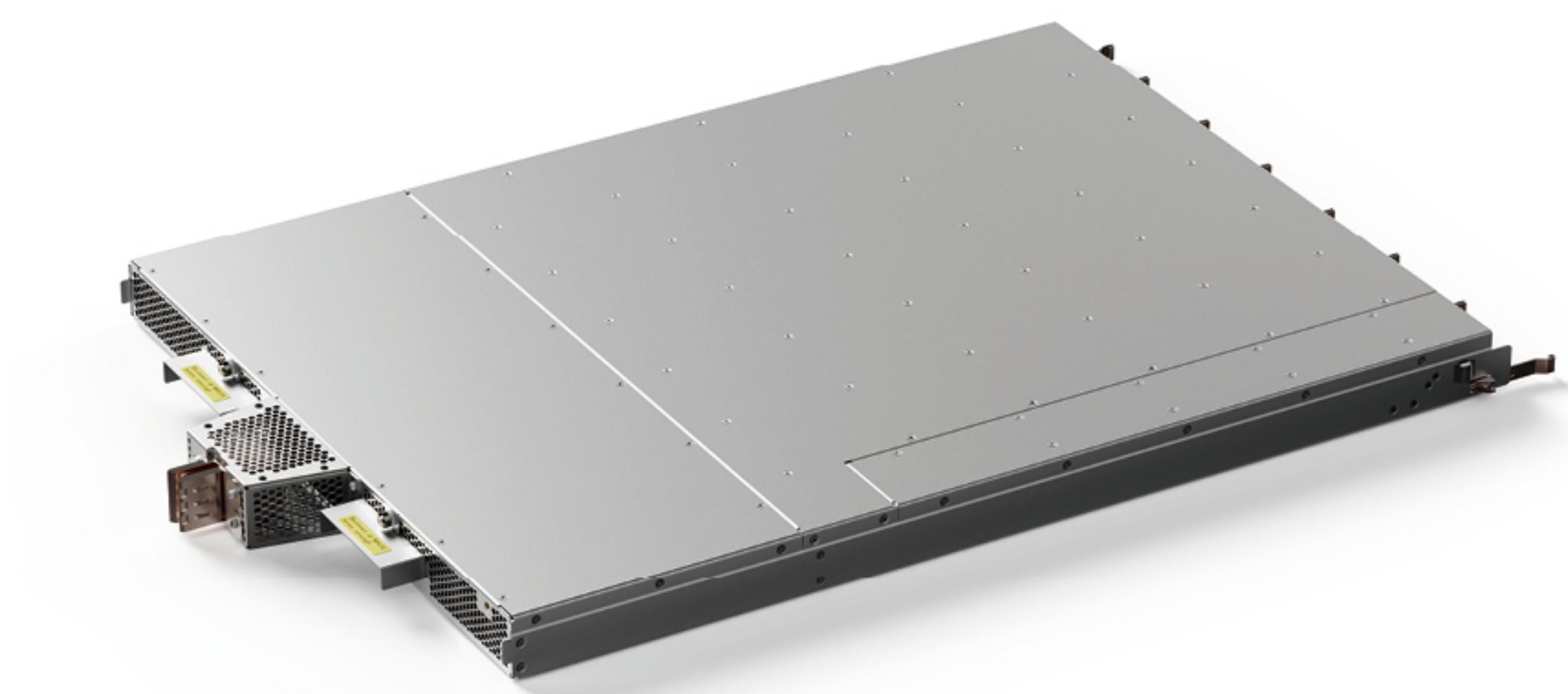


### 8 kW Power Distribution Board

#### High-Efficiency/Maximum Power Density Non-Isolated 48 V to 12 V DC/DC Converter for High-Performance AI Server Systems

Developed for power-intensive AI servers, SOLUM's 8 kW 48 V to 12 V DC/DC converter delivers superior heat dissipation and a high power capacity of 94 W/cm<sup>2</sup>. This solution features proprietary temperature management and current distribution algorithms to enhance server system balance and efficiency.

- Alserver-oriented 48 V to 12 V power distribution board
- Best-fit for GB200 NVL72
- ODM/OEM verified Power Distribution Converter
- Manufacturing cost-effective discrete solution
- Size : W5.7 x D4.9 x H1.3 inches (W145 x D124.5 x H33 mm)
- Total power : 8 kW TDP
- Efficiency : > 97% at TDP



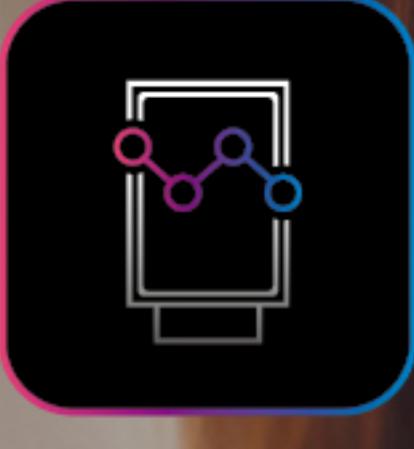
### 33 kW Power Shelf

#### The 33kW Power Shelf offers modular design, efficiency, reliability, and smart operation across diverse environments.

The 33 kW Power Shelf, compatible with EIA standards for 19-inch server racks, provides high-capacity output and efficient installation. Its modular design ensures scalability and energy savings, while overvoltage and overcurrent protection enhance reliability. Equipped with air cooling and a smart management system, it supports real-time monitoring and optimal operation in various environments.

- EU 19" rack standard EIA compliance
- Support various custom-fit PSU design beyond any expectation
- Implemented WBG (SiC & GaN Device) for securing thermally-stable operation, high-reliability and longer life time
- Support 5 kW output power with 520 mm short-depth
- Size : W19 x D25.6 x H1.8 inches (W482.6 x D650.2 x H45.7 mm)
- Input Voltage : 220 / 230 or 277 Vac (Min. 180 - Max. 305 Vac)
- Frequency : 50 / 60 Hz (Min. 27 Hz - Max. 63 Hz)

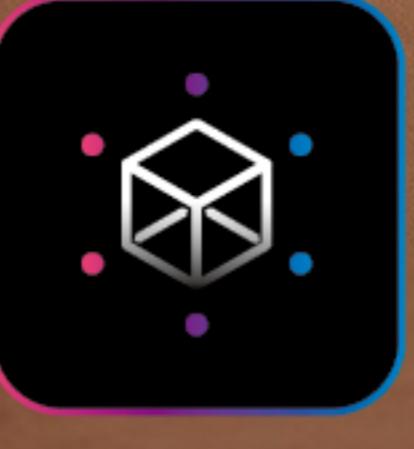
# DISPLAY SOLUTION



Trustworthy  
Stable Display



Agile  
Customized  
Technical Support



Flexible  
Retail Value  
Integration

## Digital Signage: Ushering in a New Era of Customer Engagement

Brand stories with only text and images no longer captivate or intrigue audiences.

Capture customer attention and deliver memorable messages through digital signage.

Achieve definitive promotional impact through lifelike content and precise information delivery.

Experience business growth through continuous customer interaction.

Our sophisticated digital signage harmoniously fits any space, delivering robust performance with low power consumption while enabling complete customer immersion.



## CUSTOMER EXPERIENCE IMPROVEMENT SOLUTIONS

Advanced ESL Solutions  
for Modern Retail

### Vision AI

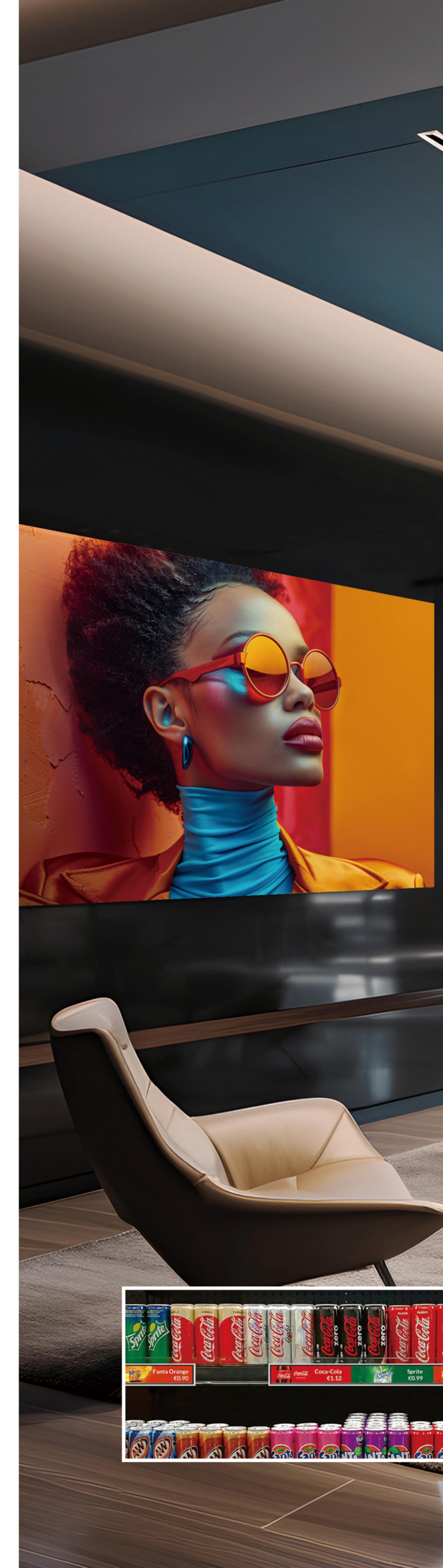
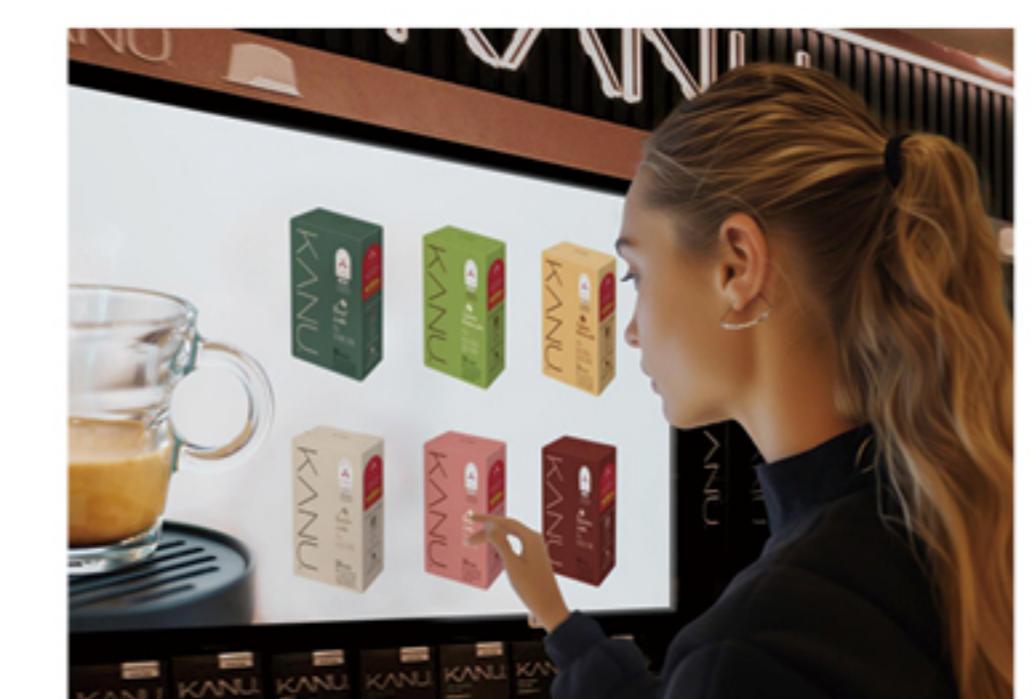
#### Solution for RMN (Retail Media Network) with AI Eye-Tracking Technology for Advertisement Effectiveness Analysis

A comprehensive solution that analyzes advertisement visibility to provide data-driven insights for targeted advertising by gender and age groups. Through visitor analysis, it delivers tailored product promotions and advertisements based on demographic classifications, enabling retailers to enhance in-store product sales while providing advertisers with validated media effectiveness.

### Smart Navigation Display

#### Intuitive Product Information and Location Through Display and ESL

A solution that enables customers to intuitively search and categorize product information, instantly accessing product features and discount details via displays. Additionally, the LED lights on Electronic Shelf Labels (ESL) intuitively guide customers to the location of categorized products.



## SIGNAGE

Flexible Signage Solution

#### Design & Performance

- Variable Product Line-up
- Supports Customized Design for Customers

#### Designs Available for Customer Needs

- Narrow Bezel & Slim Depth for Customer Fit
- Long-Life Reliability : 24 Hour / 7 Days
- Android O/S

#### Simple Installation

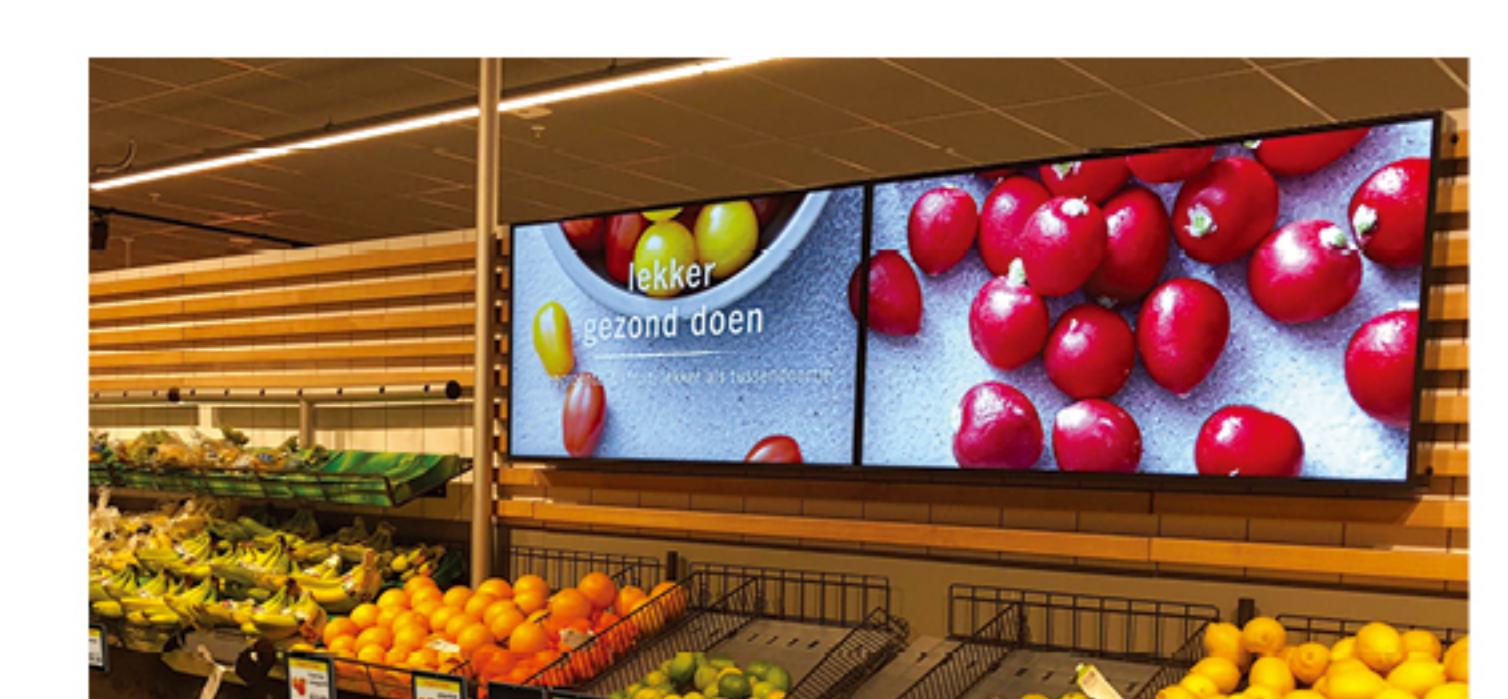
- Supports Easy Installation Bracket
- Supports Customer Installation Guide
- Power Supply by DC Adapter

#### Compatible Network Interface

- Wi-Fi 802.11ac (2.4 GHz / 5 GHz), (\*Optional)
- Supports for Ethernet (\*Varies by model)

#### Special Features for Customer

- Built-in Launcher for Compatibility
- Supports API for Customer CMS
- Video Multi-Decoding (\*Varies by model)
- 4K UHD + 4K UHD Dual Decoding



## FLEXIBLE SIGNAGE SOLUTION

### S - SERIES

Professional Series



#### 32" FHD Display

Digital Signage, Network HDMI Support, Sound 10 Wx2 Slim Depth with SOLUM CMS solution



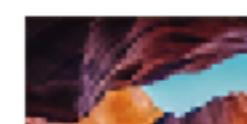
#### 43" UHD Display

Digital Signage, Network HDMI Support, Sound 10 Wx2, Slim Depth with SOLUM CMS solution



#### 55" UHD Display

Digital Signage, Network HDMI Support, Sound 10 Wx2, Slim Depth with SOLUM CMS solution



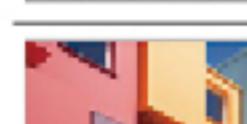
#### 65" UHD Display

Digital Signage, Network HDMI Support, Sound 10 Wx2, Slim Depth with SOLUM CMS solution



#### 75" UHD Display

Digital Signage, Network HDMI Support, Sound 10 Wx2, with large size solution



#### 86" UHD Display

Digital Signage, Network HDMI Support, Sound 10 Wx2, with large size solution

### B - SERIES

Replace POP, POSM  
(Colorful promotion  
in retail)



#### 23" FHD Bar Display

Newton Touch, specialized ESL interlocking function with slim depth design



#### 24" Bar Display

620 mm bar display product specialized for the retail market and high-performance customized signage



#### 25" Bar Display

606 mm bar display product specialized for high-performance elevator signage



#### 29" FHD Bar Display

Newton Touch, specialized ESL interlocking function with slim depth design



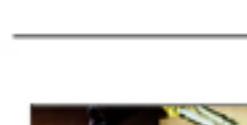
#### 33" Bar Display (Square)

Square Display product specialized for customized signage with high performance



#### 35" UHD Bar Display

890 mm bar display product specialized for retail shelving



#### 37" FHD Bar Display

940 mm bar display product specialized for high-performance multi-video decoding



#### 47.1" UHD Bar Display

1,200 mm bar display product specialized for high-performance multi-video decoding

### SPECIAL SERIES



#### T - SERIES : 10.1"



#### D - SERIES : 49" / 55" Dual Display



#### O - SERIES, V - SERIES : 55"

## ESL SOLUTION



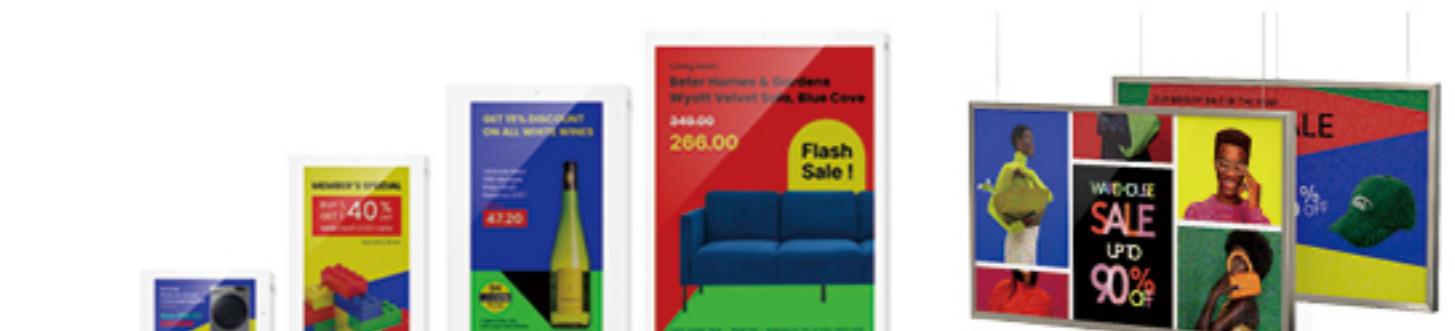
### ESL DISPLAY



SOLUM offers ESL solutions tailored to diverse environments, ensuring efficiency and effectiveness across multiple industries. Whether in retail, healthcare, industrial settings, or public spaces, our ESL technology enhances operations, improves accuracy, and engages users.

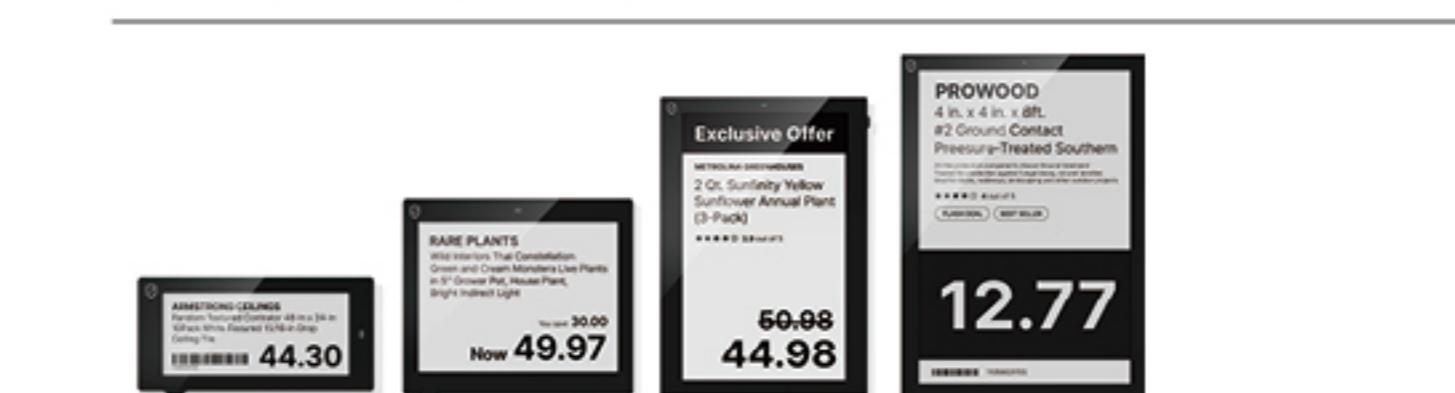
#### Newton PRO

BWRY 1.6" (V) / 1.6" (H) / 2.2" / 2.6" / 2.7" / 2.9" / 3.5" / 4.2" / 4.3" / 4.5" / 5.8" / 6.1" / 7.5" / 9.7" / 11.6" / 12.2"



#### Newton PRO FULL COLOR

KWRYGB 4.0" / 7.3" / 8.2" / 13.3" / 31.5"



#### Newton PRO EXTREME

BW 2.9" / 4.2" / 7.5" / 11.6"



#### Newton CORE

BWRY 1.6" / 2.2" / 2.6" / 2.7" / 2.9" / 3.5" / 4.2" / 4.3" / 5.8" / 6.0" / 6.1" / 7.5" / 9.7" / 11.6" / 12.2"



#### Newton LITE

BWRY 1.6" / 2.2" / 2.6" / 2.9"



#### Newton X

1.0": BWR / 1.0" (Square Shape) : BW / 1.3": BWR / 1.3" peghook : BWR / 1.3" peghook (wing type) : BWRY / 2.2": BWR



#### Newton DUAL

8.2": BWRYO / 11.6": BWR, BWRY



#### Power Rail

BWRY 1.6"(V) / 1.6"(H) / 2.2" / 2.9"



#### GATEWAY

- L : Newton Gateway
- R : Newton USB Gateway

\* B : Black, W : White, R : Red, Y : Yellow, O : Orange, G : Green

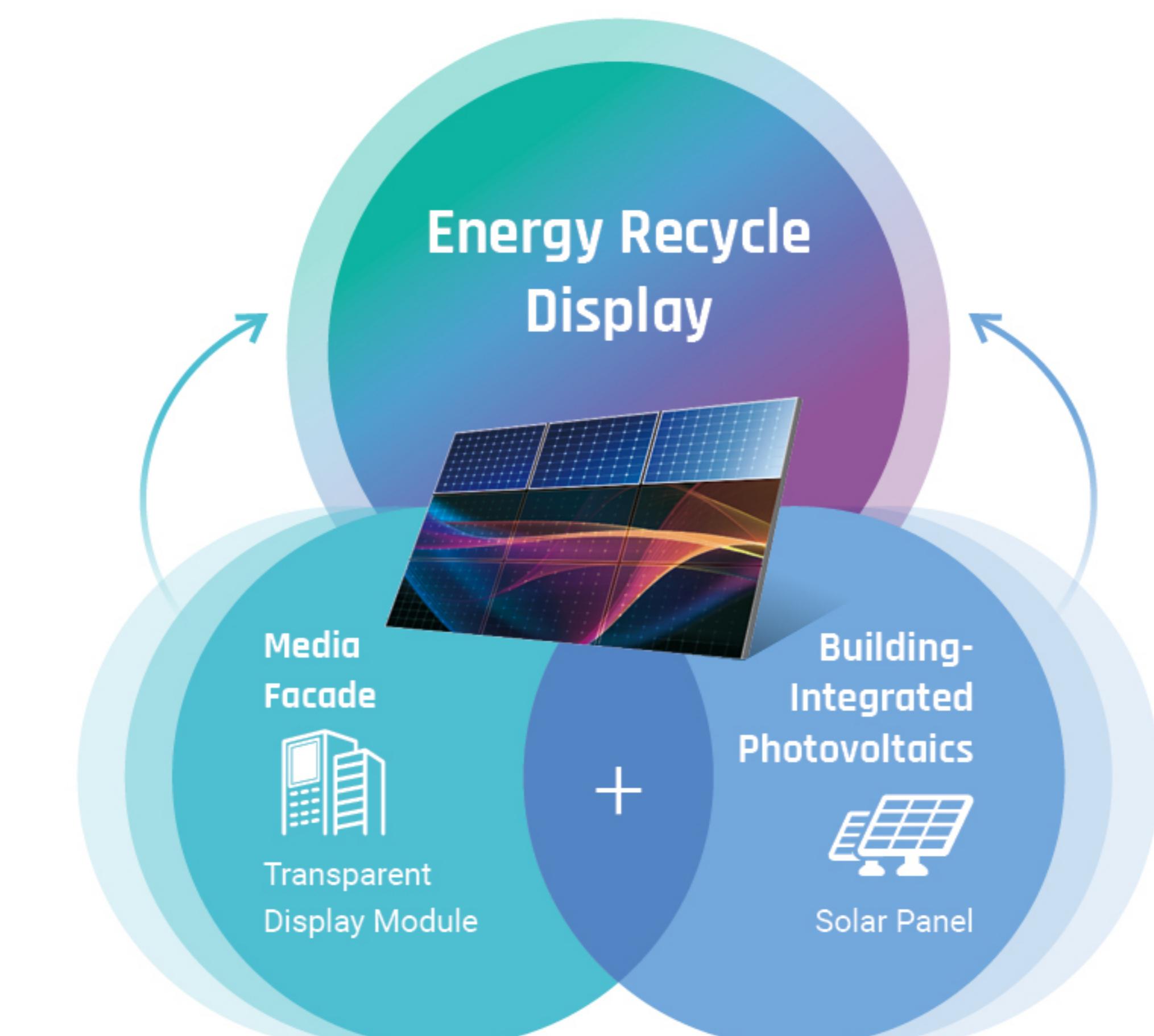
In NEWTON PRO FULL COLOR, black is represented by 'K' to avoid confusion with 'B' for blue.

# SOLAR ENERGIZING DISPLAY

Zero Building Solution with Transparent Display for DOOH

**SOLUM Transparent Display Meets ESS Technology :**  
**Zero Power Consumption for Outdoor Advertising!**

This innovative solution combines transparent LED film overlaid on solar panels for building outdoor advertising, enabling simultaneous content display and energy generation. This energy circulation system utilizes 50% of solar power generation for advertising operations, with the remaining power available for building maintenance (lighting, air conditioning, etc.).



# AR HEAD UP DISPLAY

LiveWindow Full Windshield Display

## ■ COMPACT WITHOUT COMPROMISE

LiveWindow's compact design allows it to be fitted to almost every type of vehicle, adding seamless visual overlays to the conventional vehicles we know today, without sacrificing its infinite-3D-depths and wide field-of-view.

## ■ CONNECTED

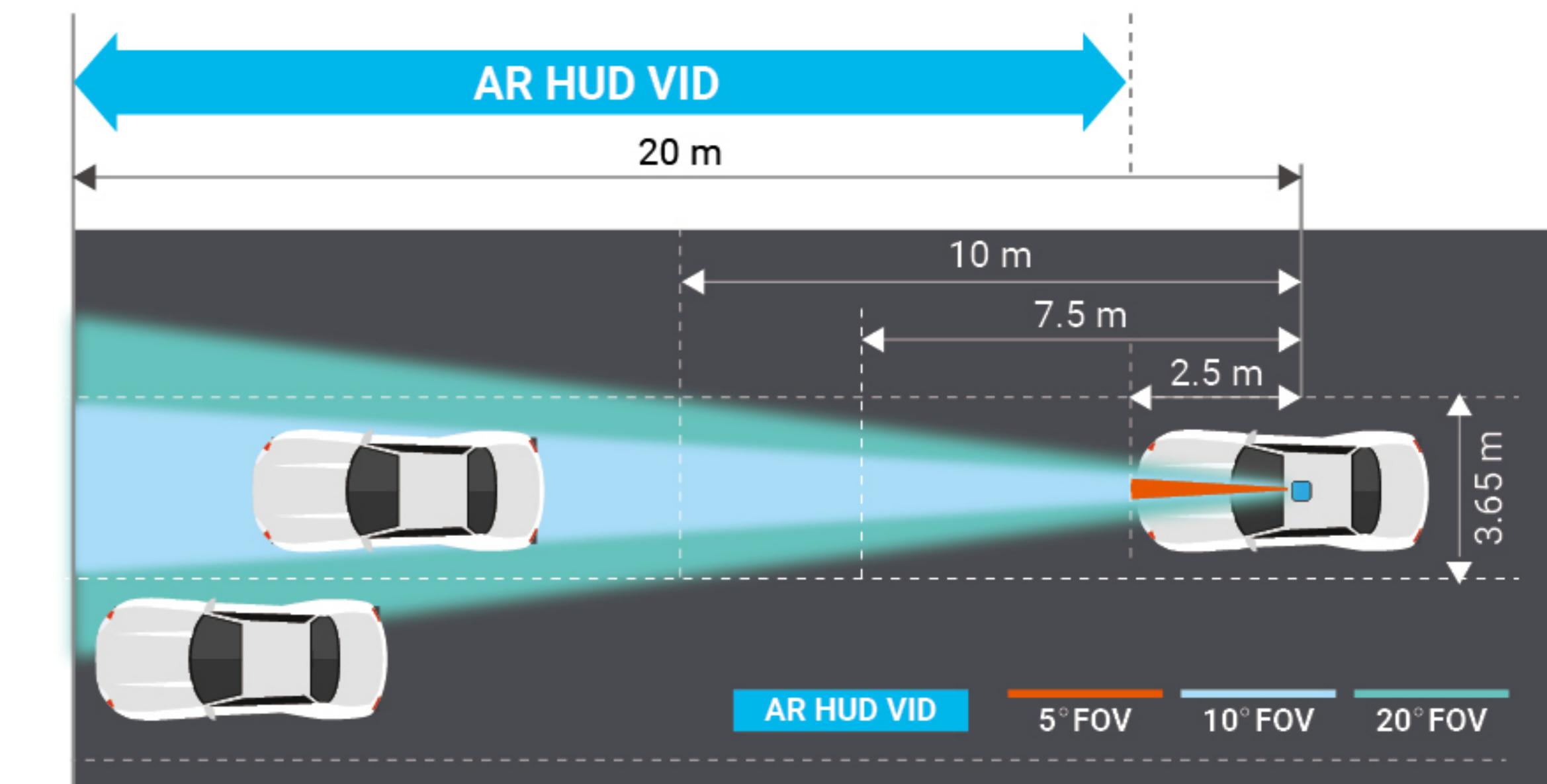
LiveWindow detects driver-overlooked dangers by collecting essential driving data, such as driver information, road conditions, and vehicle data, by utilizing the network of front/driver view cameras and sensors for assessing 'vehicle localization', 'graphical rendering', and 'eye tracking'.

## ■ SAFETY

LiveWindow enhances driver safety by intuitively displaying critical information, fostering trust and confidence. Essential driving data is presented within the driver's line of sight, minimizing distractions and helping avoid potential hazards, paving the way for a more reliable and futuristic driving experience.

## ■ CONSTRUCT

The creator tool empowers users for reshaping driving experiences for themselves, and others, by presenting an avenue for developing augmented reality applications tailored for the automotive cloud.



# INTERNET OF THINGS

## Make Your Life Better with Smart Home Solution

SOLUM creates new value by breaking down barriers between life and industry through IoT technology, achieving harmony between people and technology. We enhance business operations and daily life through advanced technologies, such as healthcare devices, wireless chargers, and smart tags. We transform tomorrow's IoT technology into today's reality while building a sustainable future.



## HEALTHCARE

### Biodata Monitoring Solution

#### mindy

##### Headband with Biosensors MINDY

MINDY is a digital healthcare device that intuitively shows the state of user's mental health. The headband is equipped with a sensor that monitors brain waves and heart rate in real-time. By connecting a mobile app to the device, you can enjoy meditation music that is effective for stress relief and various brain exercises that could boost your concentration.



#### EARX TREME

##### Specialized Sports TWS with Biosensors

EARX TREME is earbuds with biosensors providing personalized coaching solutions for runners. Combining with the three measurements of heart rate, temperature, and posture, EARX TREME can provide posture correction and biofeedback through real-time voice coaching.



#### For me buds

##### The Sleep Earbuds for Smart Travel

'For Me Buds' - Elevating Sleep Quality Anywhere, Anytime! These ultra-compact in-ear devices offer comfortable wear in any position, analyzing heart rate and brainwaves in real time to play customized audio tracks. Advanced noise cancellation and AI-based personalization technology deliver enhanced sleep quality and focus.

# LIFESTYLE

## Fast Wireless Charging Solution



### Smart Warmer Mini

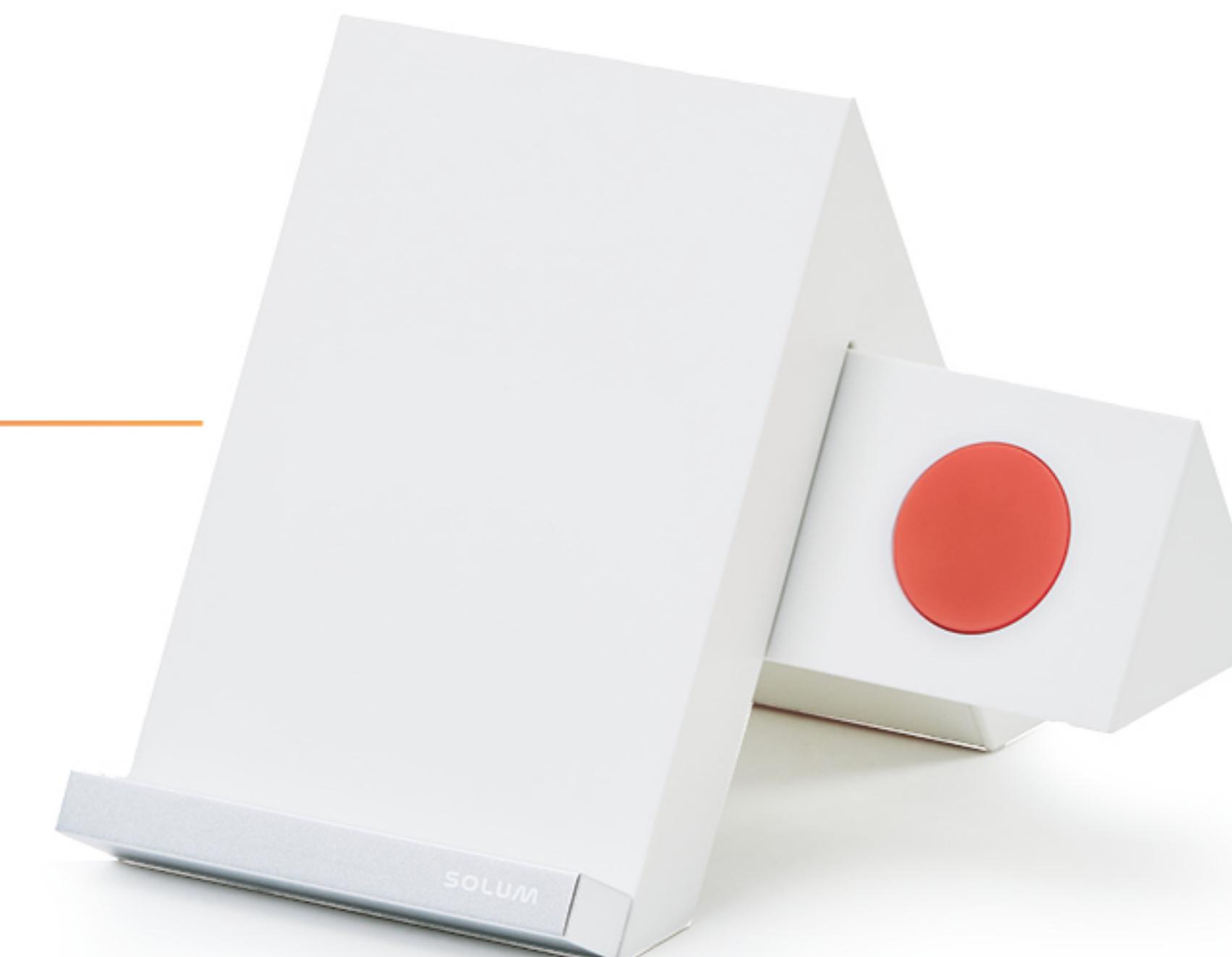
#### The Last Sip, The Same as The First

Smart Warmer Mini features SOLUM's advanced power technology. It maintains warmth even on cold days, so you can enjoy it like new every time. This compact mini device conveniently charges smartphones, wireless earphones, and smartwatches wirelessly.

### DUO Wireless Charger

#### Compact Deskterior Charger

SOLUM's DUO Wireless Charger offers a pleasant charging experience with its minimal and witty object design. Its standing structure allows message checking and video watching while charging, with a hidden orange cradle for easy smartwatch charging.



### Foldable Wireless Charger

#### Simplify Your Work and Travel

With its foldable ultra-slim design, this portable solution is optimized for business trips and travel. It leverages SOLUM's advanced power technology to simultaneously charge up to two devices each of smartphones, wireless earphones, and smartwatches, eliminating the need for multiple chargers.

# ASSET MANAGEMENT

## Asset Management, Maximized for Efficiency



### Smart Tag

#### Stay Connected, Never Lose

A BLE-based low-power location monitoring solution that integrates with Samsung SmartThings. Connect with smartphones to track items or pets in real-time, maintaining signal strength even at long distances through ultra-wideband support. Its compact design enables efficient management of various assets.



### Trace

#### Track and Manage, All in One

SOLUM's Trace is an efficient corporate asset management solution. It tracks asset location and status in real-time, enabling more competent management through location and temperature data. The solution maximizes corporate asset management efficiency through its easy-to-attach design, high technical compatibility based on Bluetooth technology, and long battery life for stable and continuous use.



# GLOBAL PRESENCE

## Stable Manufacturing Solution

SOLUM collaborates with many of the world's leading retail brands and has built a global reputation by providing over 100 million tags to over 8,000 stores in 35+ countries. As an industry leader, SOLUM has pioneered e-paper, e-ink, LED blinking in the ESL field. We are committed to discovering new and exciting features that improve user functionality and drive growth for our clients. By partnering with the best, you can reap the benefits.

04

SOLUM Production Sites

60%

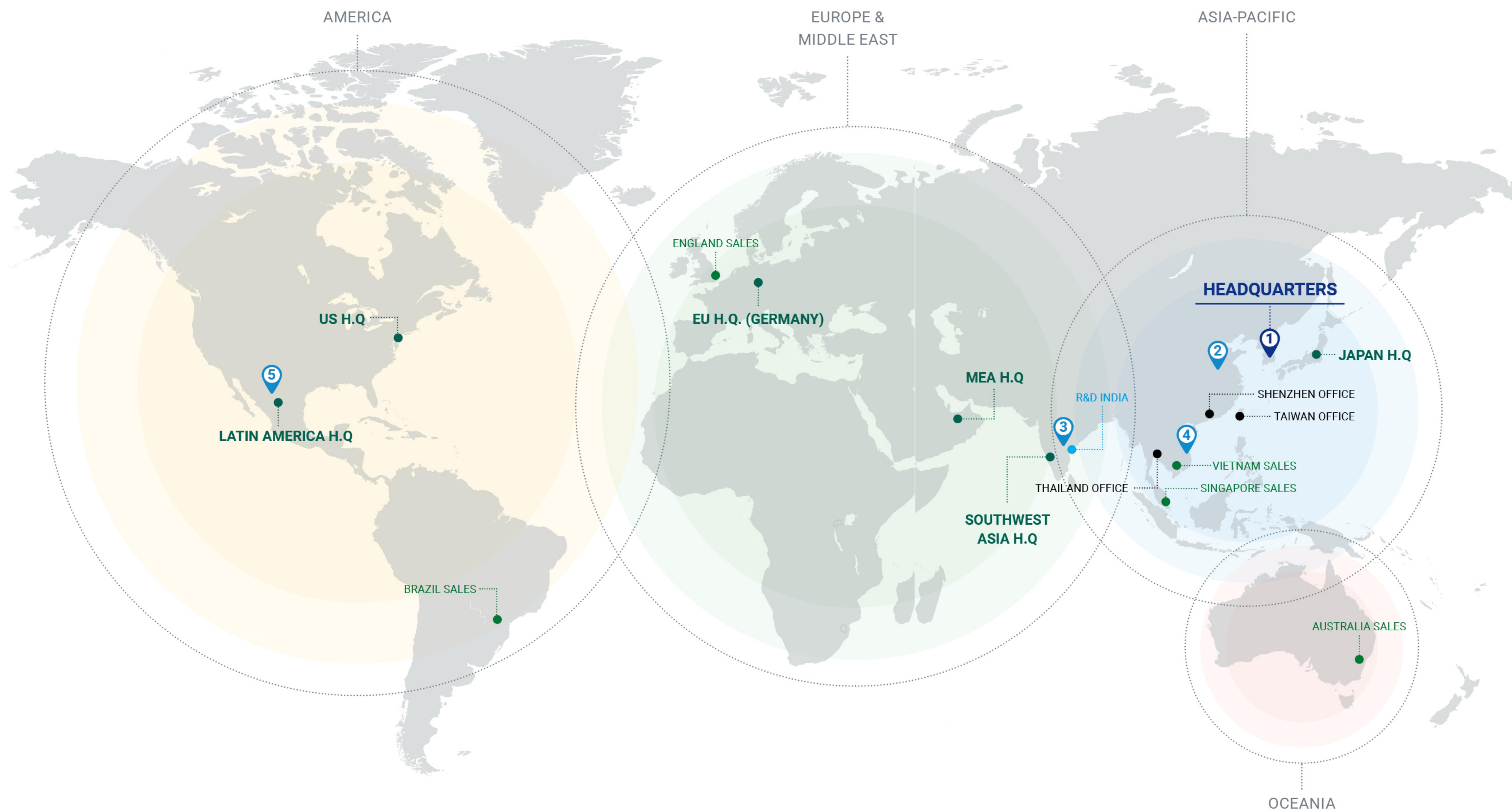
R&D Specialists

11

Sales Offices

488

Global Patents



SOLUM



① HEADQUARTERS (KOREA)

Yongin, Korea

PRODUCTION UNITS



② CHINA FACTORY (DONGGUAN)

Dongguan, China



③ INDIA FACTORY

Karnataka, India



④ VIETNAM FACTORY

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