

Nipron Wave

Vol.69



Nipron new factory Completion scheduled
M S D F for August 2023
Mie Smart Dream Factory

Highlights

① PV Oasis

Introducing the outline of PV Oasis which will be installed in the Mie Smart Dream Factory for in-house PV power consumption (renewable energy rate of 90% or more).

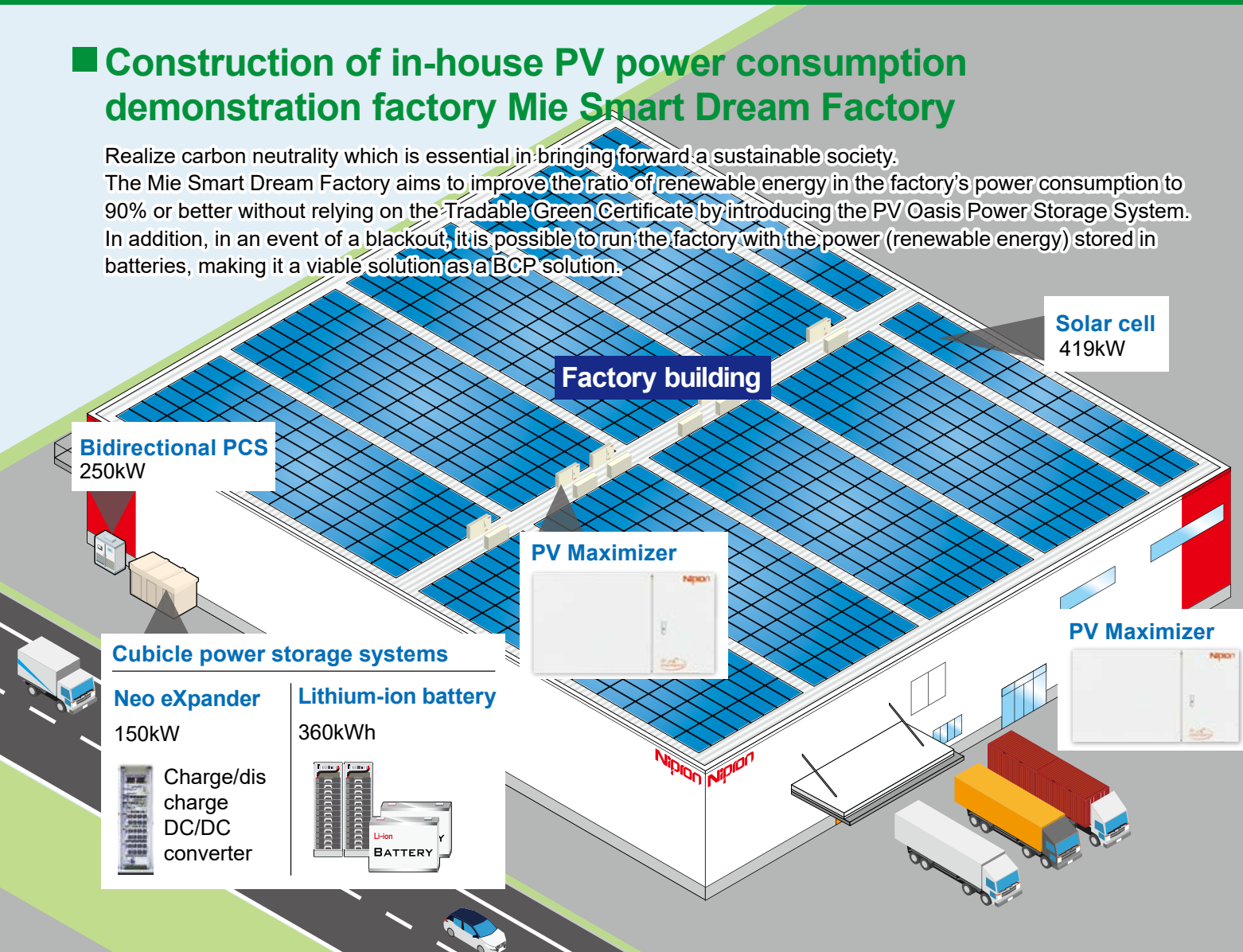
② Single-output power supply and PC power supply

Introducing new products, such as single-output power supplies, PC power supplies and large power supplies.

The Challenge of Carbon Neutrality PV Oasis Power Storage System

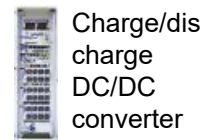
Construction of in-house PV power consumption demonstration factory Mie Smart Dream Factory

Realize carbon neutrality which is essential in bringing forward a sustainable society. The Mie Smart Dream Factory aims to improve the ratio of renewable energy in the factory's power consumption to 90% or better without relying on the Tradable Green Certificate by introducing the PV Oasis Power Storage System. In addition, in an event of a blackout, it is possible to run the factory with the power (renewable energy) stored in batteries, making it a viable solution as a BCP solution.



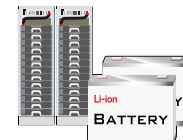
Cubicle power storage systems

Neo eXpander
50kW



Charge/discharge DC/DC converter

Lithium-ion battery
180kWh



Rectifier
30kW



Solar cell
100kW

Specification of facility

Factory building

Solar cell	419kW
Battery	360kWh
Bidirectional PCS	250kW

EV Solar Carport

Solar cell	100kW
Battery	180kWh
EV quick charger	20kW×6 units
Rectifier	30kW

EV Solar Carport

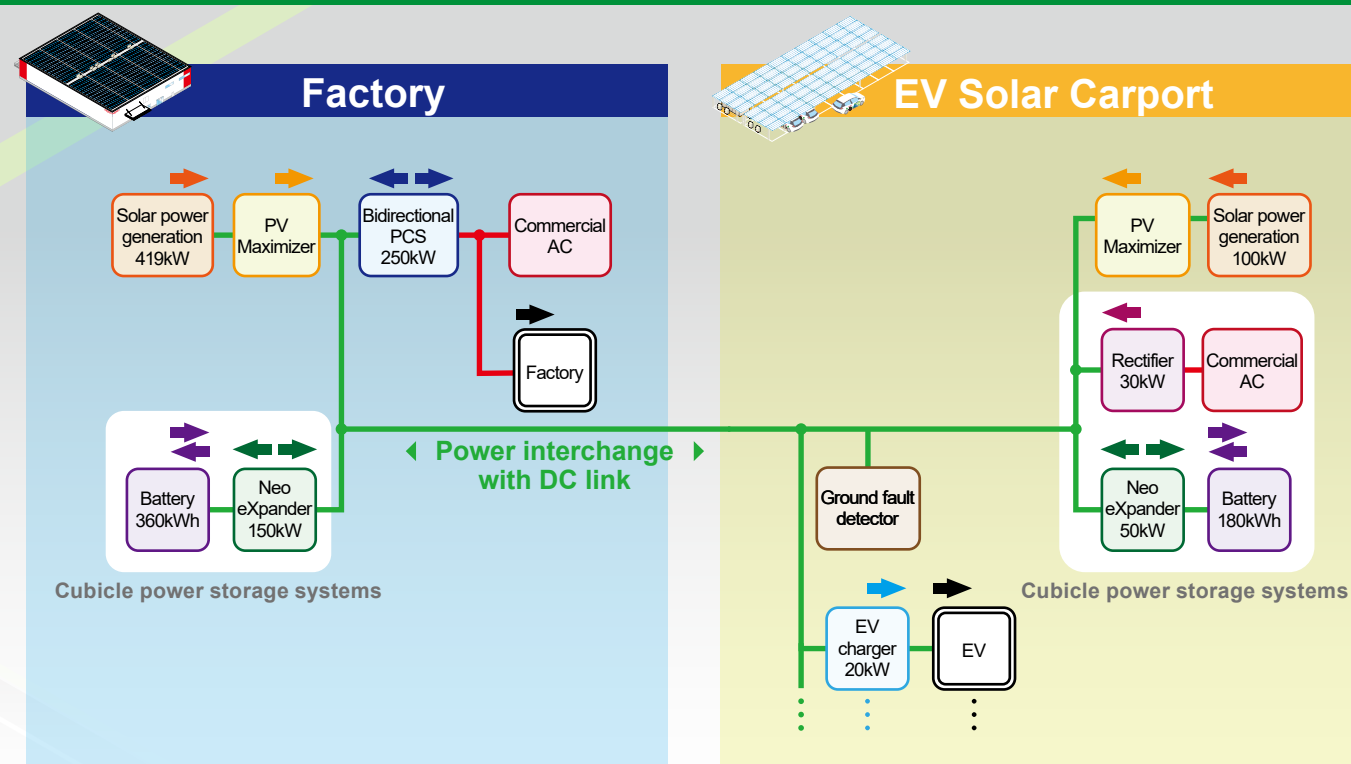
EV quick charger



Supports DC input 20kW output

EV Charging is available with 100% renewable energy

System block diagram



Features

1. Hedges against risks of dramatic rises in electricity costs

With the target set on the ratio of renewable energy in the in-house power consumption at or higher than 90%, it enables to counter the risk of dramatic increase in the electricity cost.

2. BCP measures

Protects the production operation from unexpected and prolonged blackouts, like those in natural disasters, with the photovoltaic power generation and batteries.

3. Adapting to greater use of EVs

With EV chargers installed for corporate cars and employees, it helps the shift towards the carbon-neutral society by charging EVs with 100% renewable energy.

4. Power interchange between buildings

With the DC power supply system, easy to interchange the power between buildings.

5. Energy-efficiency improvements for air-conditioning

Improves the cooling efficiency with the heat insulation effect of solar cell installation on the roof.

Our PV Oasis Power Storage System is sure to amaze!

<http://www.nipron.com>

90% or more of the electricity used comes from renewable sources, which helps reduce CO2 emissions

<http://www.nipron.com>

Single-output power supply

Small size/high efficiency/long service life

FZP-040 series

Ultra-small size/high-efficiency single-output power supply



Continuous: **30–40 W** Peak: **40–60 W**

Output voltage: 5/12/15/24V

Size: (W×H×D) 50×26×87.5 mm

Backup for momentary power failures

(A separate harness is required for connection.)

Connecting the capacitor board avoids momentary power failures, which allows the extension of the output holding time.

(only for FZP-040-**-JBH)

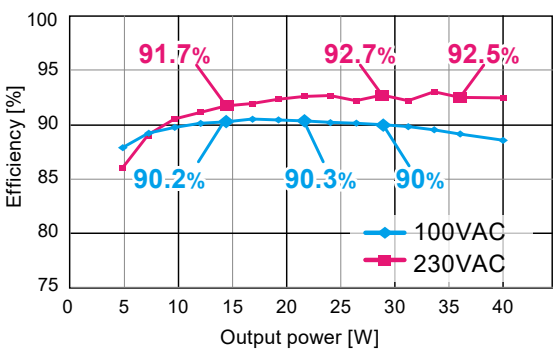


Output voltage	+5V	+12V	+15V	+24V
Continuous output current/power	6A 30W	3.3A 39.6W	2.6A 39W	1.6A 38.4W
Peak current/power (within 5 s)	8A 40W	5A 60W	4A 60W	2.5A 60W
Safety standards	UL62368-1, CSA C22.2 NO.62368-1 certified, CE marking/UKCA marking			

Low-level heat generation by reducing power loss

Achieves high efficiency of 92.7% typ. with 230V AC input, which reduces heat generation. Also helps to cut work and costs associated with heat management.

Efficiency graph: mFZP-040-12 (an example measurement)



mFZP-075 series

Medical standards IEC60601-1 Ed.3.1 MOPP, MOOP certified

Ultra-small/single-output power supply



Continuous: **50–75 W** Peak: **75–150 W**

Output voltage: 5/12/15/24V

Size: (W×H×D) 55×28×133 mm

Low leakage current

Low leakage current both at 100V AC and 200V AC

Leakage current: mFZP-075-24 (an example measurement)

Input condition	Rated load	Min. load
100V AC	0.13mA	0.12mA
200V AC	0.25mA	0.24mA

Backup for momentary power failures

(A separate harness is required for connection.)

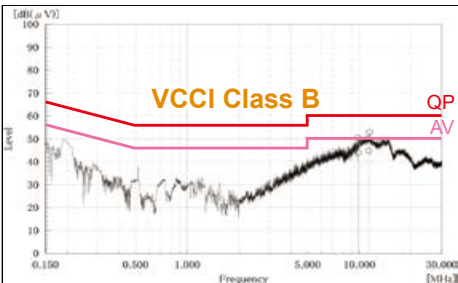
Connecting the capacitor board avoids momentary power failures, which allows the extension of the output holding time.

Output voltage	+5V	+12V	+15V	+24V
Continuous output current/power	10A 50W	6.25A 75W	5A 75W	3.13A 75W
Peak current/power (within 5 s)	15A 75W	12.5A 150W	10A 150W	6.25A 150W
Safety standards	IEC/EN60601-1 (Ed.3.1, MOPP, MOOP), IEC/EN62368-1 (2nd) (CE marking), UL ANSI/AAMI ES60601-1 (Ed.3.1), UL/cUL62368-1 (Ed.2), CCC: GB4943.1 certified			

Fewer noise filters

The power supply unit cleared requirements for VCCI Class B for conducted emissions. No need for an external noise filter to reduce associated work and costs.

Conducted emission: mFZP-075-24 input: 100V AC, output: rated load (an example measurement)



mUZP-220/520P series

Medical standards IEC60601-1 Ed.3.1 MOPP, MOOP certified

High-peak single-output power supply



Continuous: **220 W** Peak: **520 W**

Output voltage: 24V, 5VSB

Size: (W×H×D) 75×36×160 mm

Supports standby output (5V/1.5A)

No need to prepare a separate power supply for standby output, which helps contribute to a smaller design and reduce the cost of the equipment



UZP-400 series

High-capacity/high-efficiency single-output power supply



Continuous: **320–400 W** Peak: **500–600 W**

Output voltage: 12/24/36/48V

Size: (W×H×D) 84×45×180 mm

Backup for momentary power failures/blackouts

(A separate harness is required for connection.)

Connecting the capacitor board or battery pack avoids momentary power failures/blackouts, that can extend the output holding time.



Capacitor board
CB03A-EC400/801F



Nickel-metal hydride battery
BS28A-H350/2.5L

Output voltage	+24V	+5VSB
Continuous output current/power	9.2A 220.8W	1.5A 7.5W
Peak current/power (within 5 s)	21.7A 520.8W	2A 10W
Safety standards	Medical standards IEC60601-1 (Ed.3.1, MOPP, MOOP) certified	

It is optimal for devices requiring an inrush current, such as motors

The unit can supply peak output of 230% of the continuous rated power (within 5 s).



Low leakage current

Low leakage current both at 100V AC and 200V AC

Leakage current: mUZP-220/520P-24S05 (an example measurement)

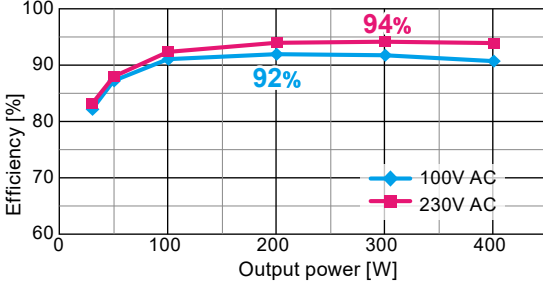
Input condition	Rated load	Min. load
100V AC	0.057mA	0.054mA
200V AC	0.118mA	0.120mA

Output voltage	+12V	+24V	+36V	+48V
Continuous output current/power	26.7A 320.4W	16.8A 403.2W	11.2A 403.2W	8.4A 403.2W
Peak current/power (within 10 s)	42A 504W	25A 600W	16.7A 601.2W	12.5A 600W
Safety standards	UL (cUL) 62368-1 certified, CE marking, UKCA marking, SEMI-F47, EN62477-1 (OVCIII) compliant			

Designed for high efficiency

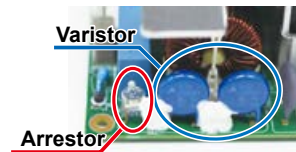
Achieves a maximum, industry-leading 94% efficiency with 230V AC input. This high-level efficiency reduces heat generation, while also allowing a smaller size and a longer service life. Also helps to cut work and costs associated with heat management.

Efficiency graph: UZP-400-A24 (an example measurement)



Enhances resistance against lightning surges

By incorporating an arrester and a varistor as a surge protector, the resistance to external surges due to lightning or other causes has been enhanced.



Varistor
Arrester

Common mode:
actual performance ± 8kV

Find the optimal power supply from our varied lineup

<http://www.nipron.com>

Glad to offer a variety of power supplies!

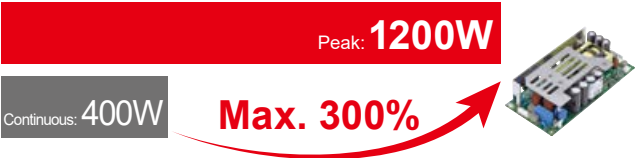
<http://www.nipron.com>

UZZ-400/1200P series

High-peak single-output power supply

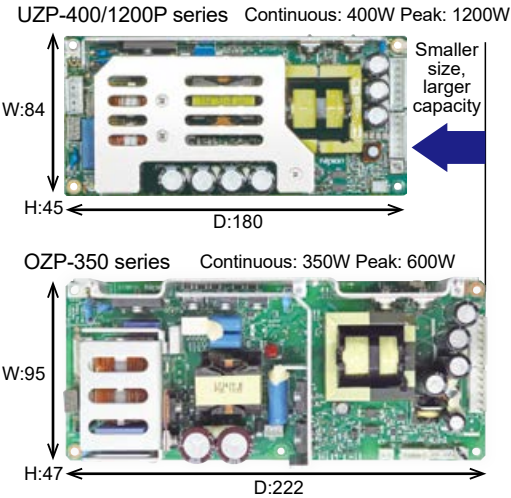


Continuous: 400 W Peak: 1200 W
Output voltage: 24/30/36/48V
Size: (W×H×D) 84×45×180 mm
Input voltage: 170–264V AC (240–400V DC can be input)
It is optimal for devices requiring an inrush current, such as motors.
The unit can supply peak output of 300% of the continuous rated power (within 10 s).



Output voltage	+24V	+30V	+36V	+48V
Continuous output current/power	16.8A 403.2W	13.4A 402W	11.2A 403.2W	8.4A 403.2W
Peak current/power (within 10 s)	50A 1200W	40A 1200W	33.4A 1202.4W	25A 1200W
Safety standards	UL(cUL) 62368-1 certified, CE marking, UKCA marking, SEMI-F47, EN62477-1 (OVCI) compliant			

Smaller size with higher capacity
Compared with Nipron's past/current models of the OZZ-350 series, the UZZ-400 series offers a 50W increased continuous capacity and 30% smaller size.



UDP-120, 180, 240 series

DIN-rail compatible power supply supports backup for blackout/momentary power failure



UDP-240-A24 series
Continuous: 240 W Peak: 400 W
Output voltage: 24V Size: (W×H×D) 41×124×117.5 mm
UDP-180-A24 series
Continuous: 180 W Peak: 200 W/300 W (100VAC/200VAC)
Output voltage: 24V Size: (W×H×D) 35×124×117.5 mm
UDP-120-A24 series
Continuous: 120 W Peak: 200 W/300 W (100VAC/200VAC)
Output voltage: 24V Size: (W×H×D) 35×124×117.5 mm

Model	UDP-120-A24	UDP-180-A24	UDP-240-A24
Output voltage	+24V	+24V	+24V
Continuous power	120W	180W	240W
Peak power (10 s) 100V AC	201.6W	201.6W	400.8W
Peak power (10 s) 200V AC	300W	300W	400.8W
Input voltage	85–264V AC (with PFC, worldwide range)		
Safety standards	UDP-120/180: UL(cUL)62368-1, UL508, SEMI F47, PSE (ordinance clause 2) compliant UDP-240: UL(cUL)62368-1, UL508 certified, CE marking SEMI F47, PSE (ordinance clause 2) compliant		

Backup for momentary power failure with capacitor unit
This product can extend the output holding time of the UDP series and take measures against abnormal input such as momentary power failure. (Compatible models: UDP-***-A24-B*)
DS01A-EC400/172F
Size: (W×H×D) 41×124×117.5 mm

Backup for blackout with a backup unit
Uninterruptible power backup can be realized by connecting this product to the UDP series. (Compatible models: all 24V models of the UDP series)
DS02A-L24/2.5L
Size: (W×H×D) 41×124×117.5 mm

PC power supply unit

Product quality and durability enable long-term severe 24/7 operation

HPCFX-350P-12VO series ATX12VO-standard-compliant

Selectable standby voltage



Continuous: 245 W Peak: 346 W
Size: (W×H×D) 81.5×41×150 mm

- 140% larger capacity despite the same size as Nipron's conventional models.
- The power supply clears VCCI Class B for conducted emissions.
- Low sound noise design by adopting a temperature-controlled, variable-speed fan.

Possible to choose standby voltage

HPCFX-350P-12VO-S05			HPCFX-350P-12VO-S12		
5VSB output type			12VSB output type		
CH	CH1-2	CH3	CH	CH1-2	CH3
Output voltage	+12V	+5VSB	Output voltage	+12V	+12VSB
	20A	1A		20A	0.4A
Continuous max. current/power	Total 240W	5W	Continuous max. current/power	Total 240W	4.8W
	Total 245W			Total 244.8W	
Peak current/power (5 s)	28A	2A	Peak current/power (5 s)	28A	0.8A
	Total 336W	10W		Total 336W	9.6W
	Total 346W			Total 345.6W	
Min. current	0A	0A	Min. current	0A	0A

HNSP5-350P series

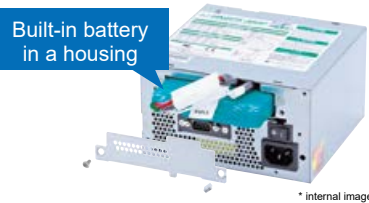
Built-in lithium-ion battery inside ATX power supply



Continuous: 245 W Peak: 346 W
Size: (W×H×D) 150×85×140 mm

No need for battery installation space

The battery pack is built into the housing, eliminating the need for an external battery. Backup for blackouts is possible without installing an external UPS by replacing the ATX power supply already installed in the PC with the HNSP5-350P.



Uninterruptible power backup

While the power is normally supplied through the AC power grid, in case of a drop, in the AC input voltage or a blackout, the backup power kicks in safely by switching to the built-in battery without any interruption.

HPCSA-1500P series

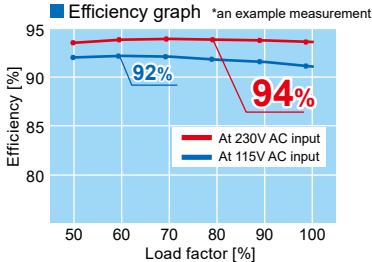
High-capacity ATX power supply capable of supporting high-performance GPUs



Continuous: 1200 W Peak: 1500 W
Size: (W×H×D) 150×85×200 mm

Achieved high efficiency of 94% typ. with 230V AC input

HPCSA-1500P is designed to attain the highest efficiency with a high load factor of 50% to 100% and enables highly reliable and stable operation of GPU servers, constantly running under a high load, as in the application of deep learning.



- Long life design of ten years or longer life expectancy
- Low-noise design by adopting a temperature-controlled, variable-speed fan (with semi-fanless mode)

High-capacity single-output power supply

High capacity/high efficiency/multifunction

GP6UT-10K-400-PES Under development

High-voltage/High-capacity output power supply



At 230V AC input At 480V AC input

Rated output: **7.84kW / 10.8kW**

Output voltage: **400V**

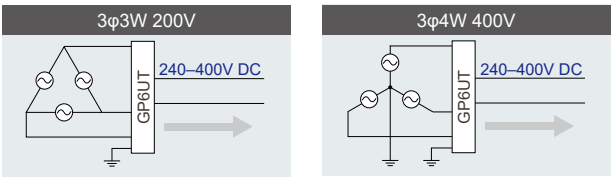
Input voltage: **Three phases 200–480V AC**

Size: (W×H×D) 255×145×460 mm

Supports CVCC output

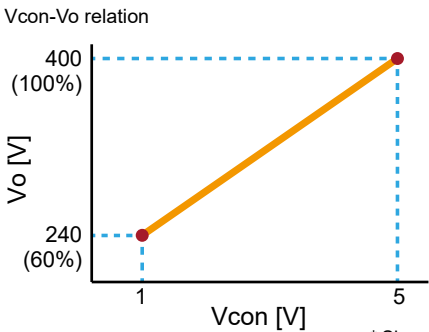
Supports constant current

Supports three phases 200–480V AC input



Supports output voltage/output current signal

Possible to control the output voltage (60%–100%)/output constant current (60%–100%) by external voltage input

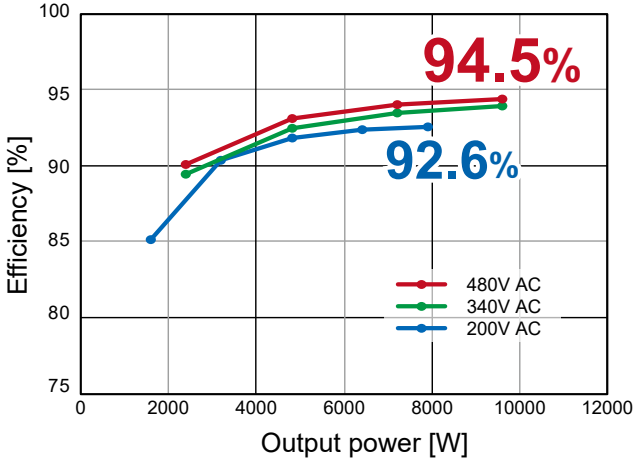


* Since the product is under development, the specifications and appearance shown here may change without notice.

Output voltage	400V
Adjustable output voltage range	240–400V DC
Rated current/ power (230V AC)	19.6A typ 7.84kW
Rated current/ power (480V AC)	27A typ 10.8kW
Efficiency	92% typ. (at 230V AC input) 94% typ. (at 480V AC input)
Input voltage	3φ200–480V AC (Input voltage range: 3φ180–528V AC)
Safety standard	UL/CSA62368-1 compliant

Low-level heat generation by reducing power loss

Achieves high efficiency of 94.5% typ. with 480V AC input, which reduces heat generation. Also helps to cut work and costs associated with heat management.



- Other features
- Supports three phases harmonic current regulation (IEC 61000-3-12 compliant)
 - Please contact us about other output voltage.

GP1UT-6000-400-TES Under development

1U size slim and high-capacity output power supply



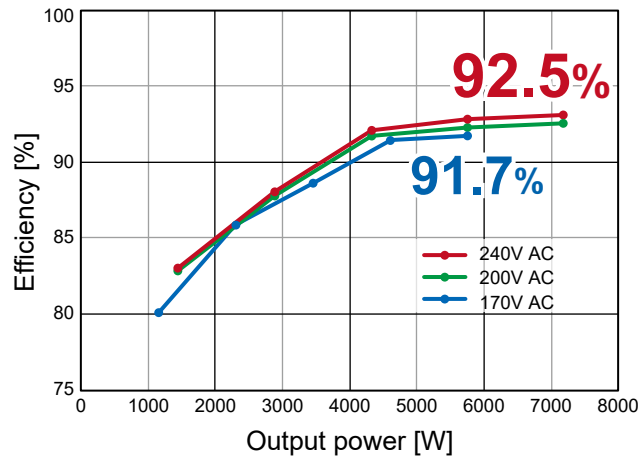
Rated output: **7.2kW** Output voltage: **400V**

Input voltage: **Three phases 200–240V AC**

Size: (W×H×D) 444×43×500 mm

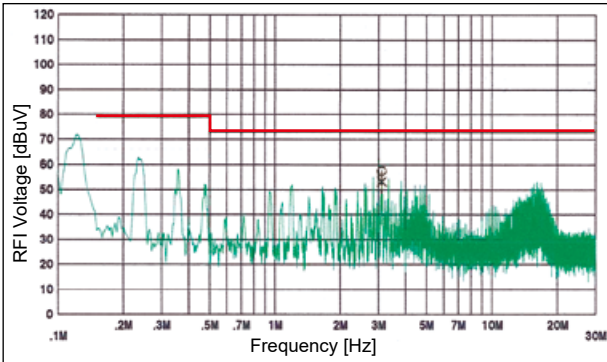
Low-level heat generation by reducing power loss

Achieves high efficiency of 92.5% typ. with 240V AC input, which reduces heat generation. Also helps to cut work and costs associated with heat management.



Clears VCCI Class A for conducted emissions

The power supply unit clears VCCI Class A for conducted emissions.



[Measurement condition Input: 200V AC Output: rated load]

* Since the product is under development, the specifications and appearance shown here may change without notice.

Output voltage	400V
Adjustable output voltage range	240–400V DC
Rated current	18A typ
Rated power	7.2kW
Efficiency	91.5% typ. (at 200V AC input) 92.5% typ. (at 240V AC input)
Input voltage	3φ200–240V AC (Input voltage range: 3φ170-264V AC)
Safety standard	UL/CSA62368-1 compliant

1U size slim design

1U size with 43mm height enables rack mounting.

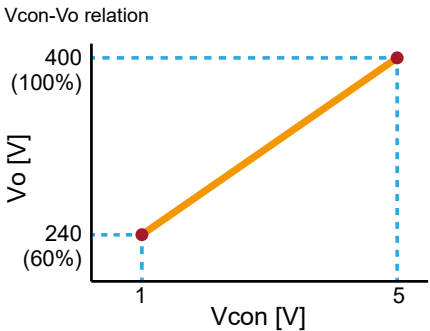


Supports CVCC output

Supports constant current

Supports output voltage/output current signal

Possible to control the output voltage (60%–100%)/output constant current (60%–100%) by external voltage input



- Other features
- Achieved long service life
 - Supports three phases harmonic current regulation (IEC 61000-3-12 compliant)
 - Power can be increased by up to three in parallel, and standard accessories are also available

Invitation to Exhibition

2nd DECARBONISATION EXPO

DECARBONISATION EXPO [OSAKA]

Nipron will take part in the 2nd DECARBONISATION EXPO, which will be held for three days from the 16th to 18th of November at INTEX Osaka. This exhibition is the largest professional exhibition in Japan aimed at the realization of carbon-free management.

The movement towards the achievement of carbon neutrality in 2050 is gaining momentum. At the Nipron booth, products and solutions suitable for the realization of carbon-neutral society will be presented.

Our proposal will focus on the PV Oasis, the power storage system

capable of supporting in-house power consumption, which is attracting attention in attaining carbon neutrality, energy crisis caused by the fuel price hike, dissemination of EVs and BCP actions in cases of blackout caused by typhoons and earthquakes. Others will include proposals matching the budgets and building restrictions of customers, such as the EV Solar Carport System (installation of photovoltaic power generation, power storage and EV chargers in a parking lot), for which many inquiries are received from private companies and local governments, and the Zero Energy Room (self-sustained renewable energy power supply system that can be introduced room by room). As we also plan to introduce actual examples of power storage system installations, the exhibition is a perfect opportunity to develop a practical image of actual installation.

Since demonstrations and presentations of popular in-house power consumption systems are planned, please do come visit Nipron booth.



Exhibition report

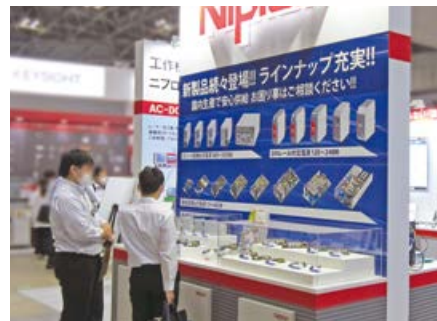
Participated in the 37th TECHNO-FRONTIER

Nipron has participated in the 37th TECHNO-FRONTIER, which was held at Tokyo Big Sight for three days from 20th to 22nd July.

At the Nipron booth, with the main exhibition focusing on new products, many power supply units of standard product lineup were presented.

Especially popular among them was a demonstration of ATX power supply unit HNSP5-350P with a built-in lithium-ion battery. In addition, the demonstration of action against momentary power failures using DS01A, the capacitor unit with DIN rail support, and the demonstration of action against blackouts using lithium-ion built-in battery pack DS02A continued to attract the eye of many visitors following the examples of last year.

As a result of receiving a large number of inquiries on the lead-time of Nipron PSU induced by the delivery problem of competitors' products, the exhibition was a meaningful opportunity to advertise the strength of Nipron, including continued efforts made on the domestic and in-house production.



A wide range of power supply units are available. Call us to find out more

<http://www.nipron.com>

Productivity Improvement Presentation

Productivity Improvement Presentation for Manufacturing Departments

The Productivity Improvement Presentation was held by the manufacturing departments in MIYAKO HOTEL AMAGASAKI on July 12. A total of nine teams participated in the competition and presented improvement activities and achievements they made in the previous term. After a strict and fair examination, the top three teams were awarded.

Gold prize: MDF Assembly/Inspection Team
Presentation theme "An Improvement to Address Variations in the Increased Production at MDF (Matsusaka Dream Factory)"

Silver prize: MDF Pre-processing Team
Presentation theme "An Improvement of Preliminary Machining Process Based on 5S"

Bronze prize: HDF ATX Board Implementation Team
Presentation theme "Establishment of 3 Regulars"

The manufacturing departments will continue its improvement activity to improve customer satisfaction level by enhancing the product quality and reducing the lead-time.



Gold prize: MDF Assembly/Inspection Team



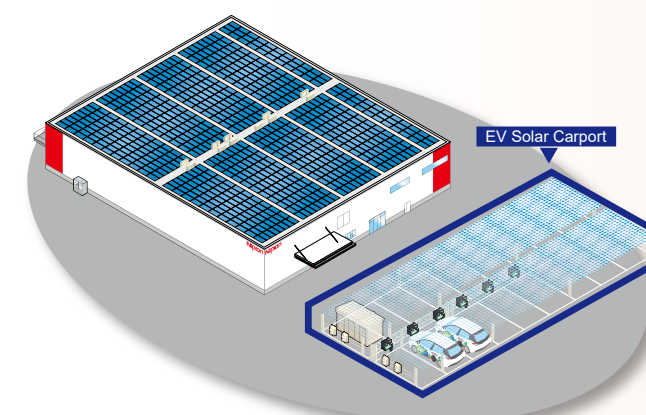
Silver prize: MDF Pre-processing Team



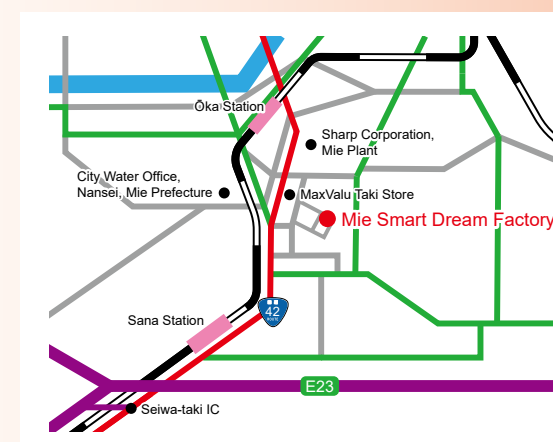
Bronze prize: HDF ATX Board Implementation Team

Construction of the Mie Smart Dream Factory has begun!

Nipron will build a new factory, Mie Smart Dream Factory, in Taki-cho, Taki-gun, Mie Prefecture and expects to complete construction in August 2023. By transferring the production to this Dream Factory from the current Matsusaka Dream Factory and introducing an automated warehouse system, we will enhance the production capacity to address the demand for power supply units for the medical equipment and logistics & transportation systems, which are growing rapidly throughout the world.



Able to charge EVs with 100% renewable energy and act as an interchange between buildings



Solar panels are installed on the rooftop of factory and on the carport and, by compensating 90% or more (target) power consumed in the factory buildings and EV charging with the power produced by renewable energy, we will contribute to the CO₂ reduction and protect the global environment.

In addition, by installing batteries as well, the system also serves as a BCP action to run the factory for several hours and enable EV charging in an event of a blackout caused by typhoons.

If you are having trouble with your power supply, please contact Nipron

<http://www.nipron.com>

The Nipron Story,
as told by our Chairperson

The final word in ESG investment: The PV Oasis Power Storage System

October 2022 is about to end. Having finished the first quarter of the 42nd term, I am pleased to announce that the order status remains healthy continued from the previous fiscal year, and the 12-month moving average has reached 8.5 billion yen. It would be safe to say that the annual sales target of 10 billion yen, which has long been our goal, has come into sight.

However, things don't turn out the way we expected. It's still difficult to obtain semiconductors and other electronic parts. Recently, Japanese manufacturers' products have also become a problem, and I realize the need to further strengthen our purchasing and procurement capabilities. It goes without saying that we cannot solve this problem smoothly without the cooperation of suppliers and manufacturers of supplied materials, and building relationships of trust on a daily basis is essential. I understand that the suppliers have various circumstances, but sometimes we faced extreme difficulties for reasons beyond our understanding.

Given that, we decided to hold a management policy presentation on October 28 for the first time in three years (Although the presentation had continuously been held for more than 10 years, it has been canceled for the past two years due to the COVID-19). The main purpose of this presentation is to help invited suppliers and manufacturers deepen their understanding of Nipron through report on our latest business performance, topics such as announcement on our new products, and explanation of our business strategies, thereby strengthening our relationships of trust and cooperation.

Changing the subject, regarding the power supply business, the significant growth in compact general-purpose power supply, or a factor in strong orders, is largely due to the launch of new products (UZP Series, UDP Series, etc.) that we have developed over the past three to five years. Other contributors include active development of elemental technologies for large-size power supply and custom-made power supply for specific customers, efforts in shedding new light on the needs of existing customers as well as in finding new customers, and the progress of mass production. Also, there are many new products currently being developed which have good prospect. Moreover, another major driver I believe is that our track record of quality and on-time delivery based on Nipron's 100% domestic production, 100% in-house production policy has earned the trust of users. I'm confident that we still have a strong potential to grow toward our goal of 10 billion yen while further solidifying the trust of customers. To this end, we decided to relocate and newly build Matsusaka Dream Factory (MDF) in order to solve production issues and carry out modernization and BCP measures.

The construction is scheduled to be completed in August 2023.

The current MDF is 34 years old and at a high risk in the event of a Tonankai earthquake. Due to its difficulty of meeting the requirements for making additional investments in modernization and streamlining, we have selected the Taki Crystal Town Industrial Zone in Taki-cho, Taki-gun, Mie Prefecture as a suitable site for the new factory. This site is located on firm ground, a hill 45 meters above sea level, and the surrounding environment is sophisticated and well maintained as Sharp Corporation's Mie Plant is located here. Considering that it's also favorable for job recruitment, we decided relocation.

To cope with the energy crisis (triggered by the embargo on Russian oil and natural gas and the depreciation of the yen), where electricity bill rises sharply, we will install our GP product "PV Oasis Power Storage System" to the new plant MSDF (abbreviation of Mie Smart Dream Factory). As an in-house power consumption example, we plan to cover 90% of the annual factory power consumption by renewable energy with 519 kW of photovoltaic power generation and 540 kWh of storage batteries to be installed. In addition to in-house power consumption, which is a feature of the "PV Oasis Power Storage System," I hope this system's usefulness will be widely known by Nipron's demonstrating that, for instance, it is suited for BCP and FIP scheme as well, and multiple 20 kW EV chargers can be installed. I'm expecting it can serve as the ultimate ESG investment (Environment, Society, and Governance) that can simultaneously accomplish important global challenges of "carbon neutrality," "promoting the spread of EVs," "averting energy crisis," and "corporate BCP measures."

Setsuo Sakai
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 **Nipron Co., Ltd.** <http://www.nipron.com>

Sales Department and R&D Department

1-3-30, Nishinagasu-cho, Amagasaki-city, Hyogo, 660-0805, Japan.

TEL: +81-6-7220-3657 FAX: +81-6-6487-2212

