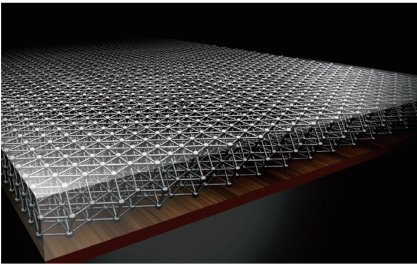


# EB Protection Film

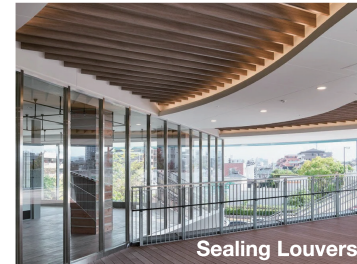
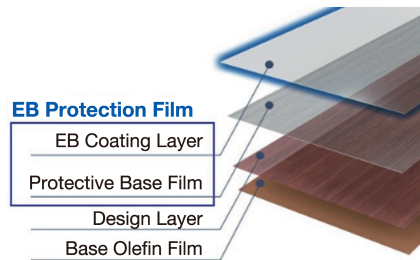
DNP

## SUMMARY AND ADVANTAGES

- Super durable protection films through high-density crosslinking by Electron Beam (EB) curing system
- Excellent UV resistance and anti-scratch performance with PFAS free materials
- Experiences for exterior decorative films for years



Cross Linking Image



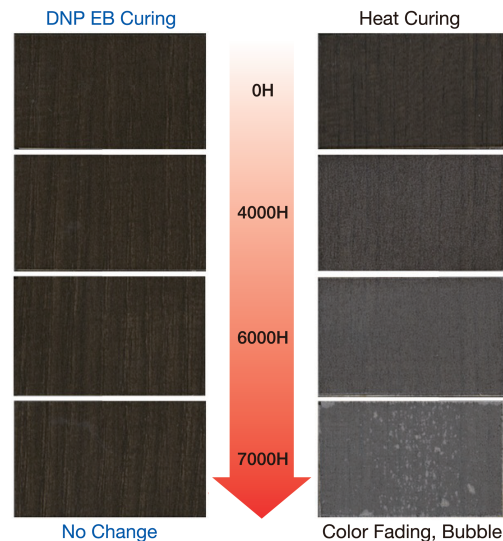
Sealing Louvers

Used to decorate louver surfaces and provide long-term durability

## FEATURES

- EB surface coating provides better weather resistance than other coatings
- Compared to heat curing or UV curing, EB curing saves energy and reduces CO<sub>2</sub> emissions
- High durability against chemicals, such as organic solvents
- Excellent wipeability and scratch resistance
- Flexible and easy to laminate

Xenon-Arc Light Exposure Result  
(Test Method: ISO4892-2)



EB coating provides long-term protection for the substrate

## APPLICATIONS

- Outdoor Display Signage
- Smartboard Application
- Touch Panel Application



CONTACT

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# Metal Microfabrication Technology

DNP

## SUMMARY AND ADVANTAGES

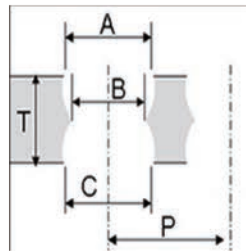
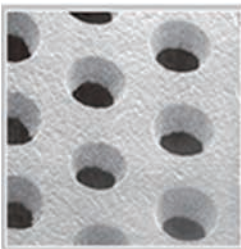
- Achieving high-performance components through the combination of metals and microfabrication

Metals	Physical strength	Electrical Conductivity	Thermal Conductivity	CTE
Copper/Alloy	○	◎	◎	High
Stainless Steel	◎	○	○	Middle
Iron-Ni Alloy	◎	○	○	Low

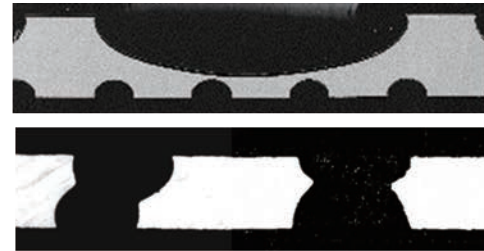
◎:Superior ○:Good △:Medium ×:Poor

## FEATURES

- A variety of metal materials are available to suit your needs
- Chemical etching with minimal distortion and no metal burrs
- Combination of additional technologies\*(See Applications)



T : 20μm  
P : 70μm  
A : 40μm  
B : 20μm  
C : 50μm

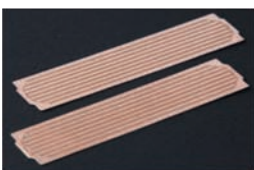


This is a guaranteed value for 20μm thickness stainless steel

Microfabrication into various shapes

## APPLICATIONS

### Vapor Chamber



#### Features

- High Thermal Conductivity 4000W/mK $\leq$
- Thinner Form Factor 0.2mm $\leq$

#### Chemical Etching

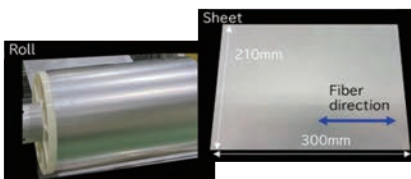


Microchannel Width $\leq$ 100um

#### \*Additional Tech.

- Diffusion Bonding
- Thermal Design, Flow Path Design

### Metal-Resin Composite



- SUS-CFRP Composite Substrate
- Light Weight (60% less than SUS)
- High Strength (Higher than CFRP)



Opening Width $\geq$ 40um

- Metal and Resin Bonding Technology

**CONTACT**

**Dai Nippon Printing Co., Ltd.**

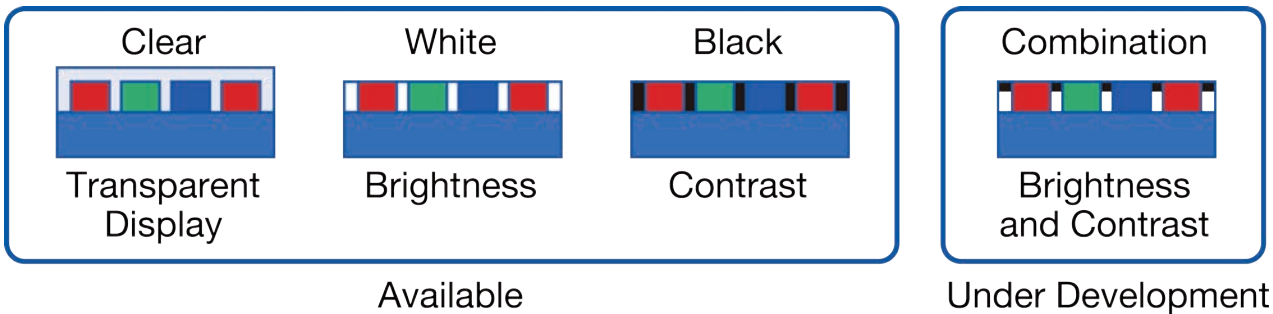
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# Encapsulant for $\mu$ LED

DNP

## SUMMARY AND ADVANTAGES

- Sheet-type LED encapsulant
- Protects LEDs from shocks, water, and static electricity
- Enhance optical performance (brightness, contrast etc.)



## FEATURES

- Material variations are available according to required specifications
- Reworkability
- Simplification of the lamination process
- Short process time (No post-curing process required)
- Thickness stability
- No need for low-temperature storage conditions

## APPLICATIONS

- Smartwatch
- Automotive
- Transparent Display
- Public Information Signage



**CONTACT**

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# Barrier Film Manufacturing Technology against Water Vapor

DNP

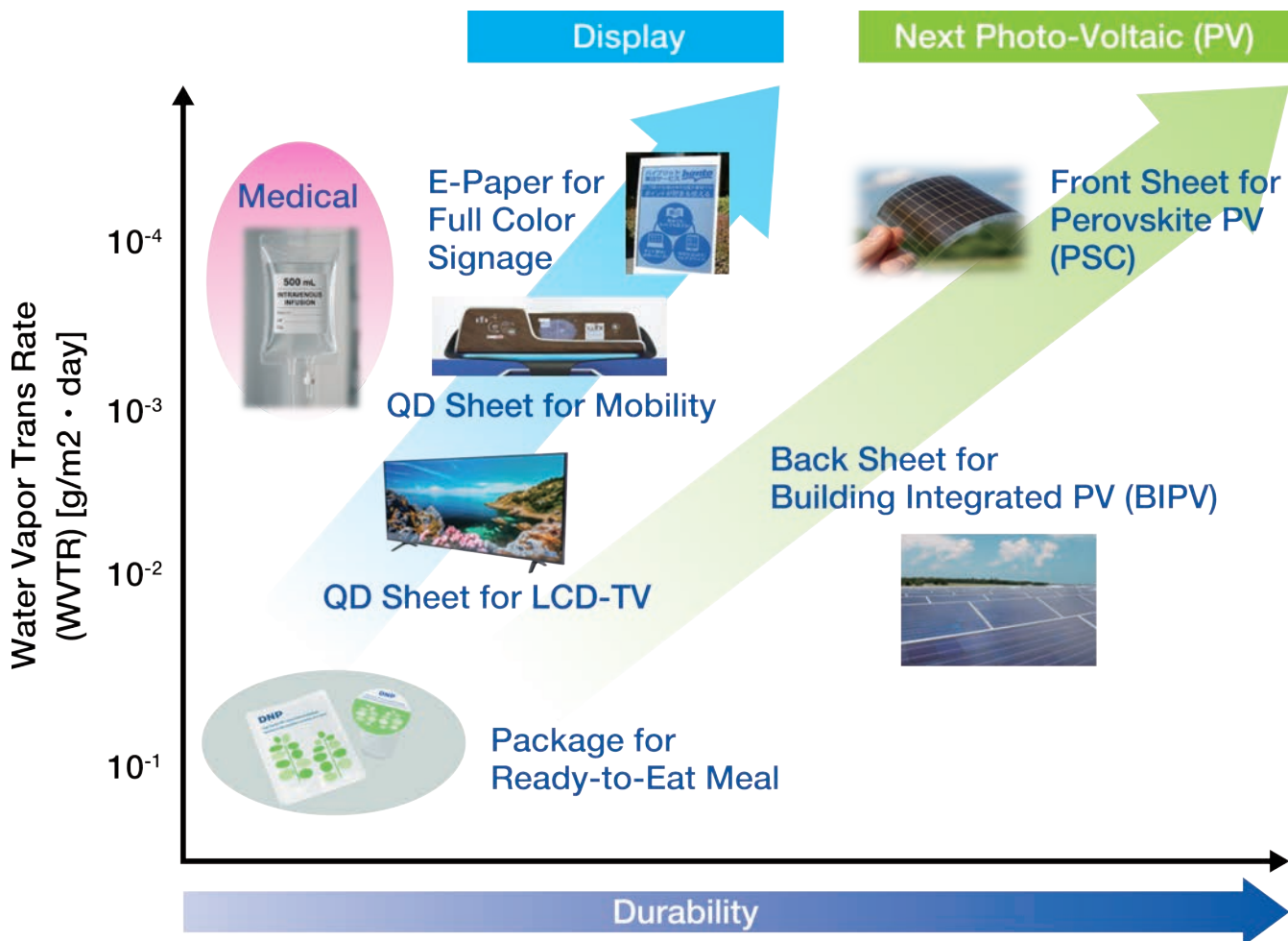
## SUMMARY AND ADVANTAGES

- Achieves high barrier performance by combining deposition and coating technologies originally developed for food packaging
- Provides barrier films that support carbon neutrality and a circular economy

## FEATURES

- High Barrier Performance (WVTR:  $10^{-3}$ – $10^{-4}$  g/m<sup>2</sup>·day)
- High Transparency with Good Optical Properties
- Durability Performance (Tested at 85°C / 85% RH)

## APPLICATIONS



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# AI-Ready Data Creation for Generative AI

DNP

## SUMMARY AND ADVANTAGES

- Reduce data quality barriers to enterprise Generative AI adoption
- Transform complex enterprise documents into structured, AI-optimized datasets — AI-Ready Data
- Customize AI-Ready Data to align with your AI platform specifications

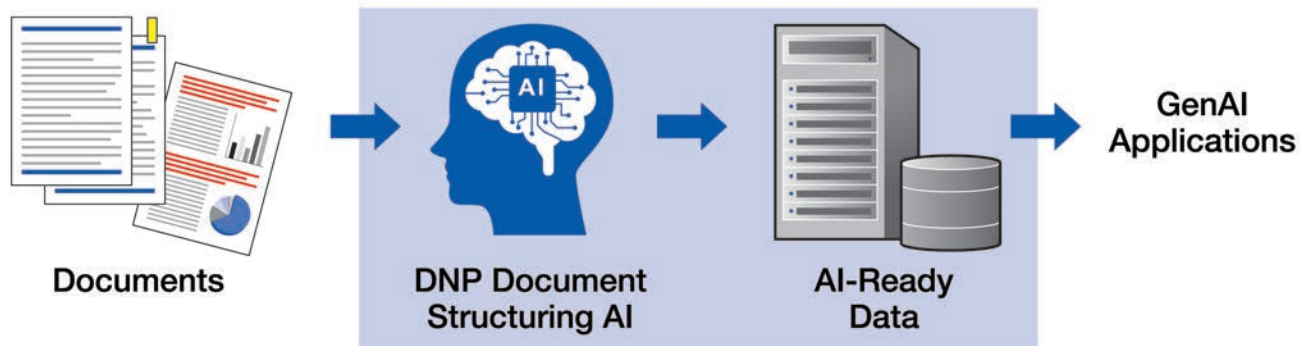
## FEATURES

- Proprietary on-premises Document Structuring AI built on DNP's decades of document processing expertise
- Adapts to diverse document layouts with minimal additional training data
- Accurately processes complex tables, figures, and reading order structures
- Intuitive UI for reviewing and correcting AI-Ready Data

## SERVICES

- Licensing of DNP Document Structuring AI
- AI-Ready Data Creation BPO powered by DNP's advanced data processing technology with secure human-in-the-loop quality assurance
- AI application development powered by structured AI-Ready Data

### From Complex Documents to Trusted GenAI Applications



Transform unstructured documents into trusted AI-ready data powering accurate and scalable GenAI applications

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# Quartz Master Mold for Optical Nanostructures

DNP

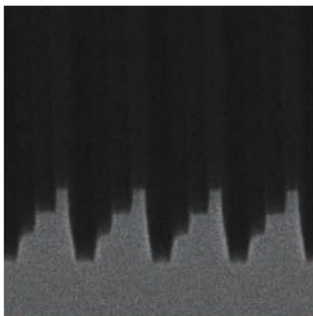
## SUMMARY AND ADVANTAGES

- Support Quartz Master Mold for AR waveguides, microlens arrays and metasurfaces

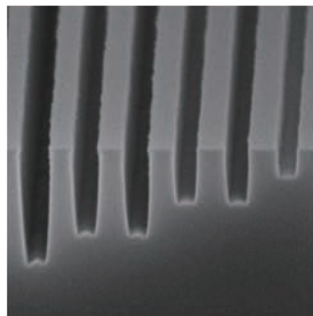
## FEATURES

- Nanometer-precision patterning on quartz substrates
- Multiple 3D nanostructures on a single mold
- Large-area fabrication (up to 6-inch square size)
- Multi-step, multi-depth, blazed and slanted surface profiles with nanometer precision are available

### Quartz Mold's Cross Sectional SEM Images



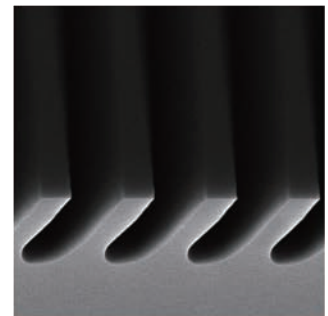
Multi-step  
( 4 Level )



Multi-depth



Blazed



Slanted

## APPLICATIONS

- Waveguides for AR Display
- Microlens Arrays
- Metasurfaces

**CONTACT**

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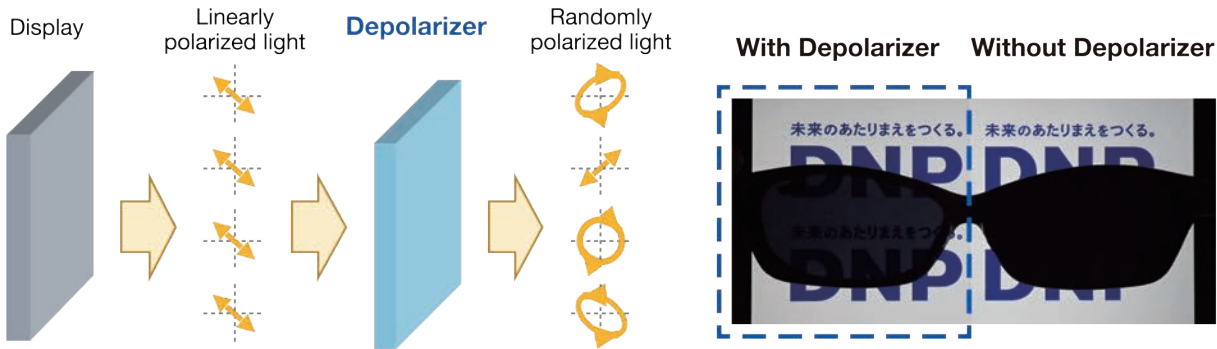
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# Depolarizer

DNP

## SUMMARY AND ADVANTAGES

- The depolarizer converts linearly polarized light to randomly polarized light
- Improves visibility of display while using polarized sunglasses



## FEATURES

	Depolarizer-A (Coating Type)	Depolarizer-B (Adhesive Type)	Quarter Wave Plate	High Retardation PET Film
Function	Depolarization	Depolarization	Quarter Wave	High Retardation
Polarization State	Random	Random	Circular	Semi Random
Thickness (μm)	2	25-50	1	80
Status	Development	Development	Mass Production	Mass Production
Roll to Roll <sup>1)</sup>	Yes	Yes	Yes	No (Sheet) <sup>3)</sup>
Neutral Color <sup>2)</sup>	Yes	Yes	No	Yes

1): Roll to roll lamination with PVA

2): Color change between crossed Nicols and parallelled Nicols

3): The depolarization effect is lost during roll to roll fabrication

## APPLICATIONS

Sunglasses friendly displays

It eliminates blackout without rainbow mura issue

- Digital Signage Display
- Automotive Display
- Mobile/Wearable Display

**CONTACT**

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# Ultra-Low Sparkle AG for OLED

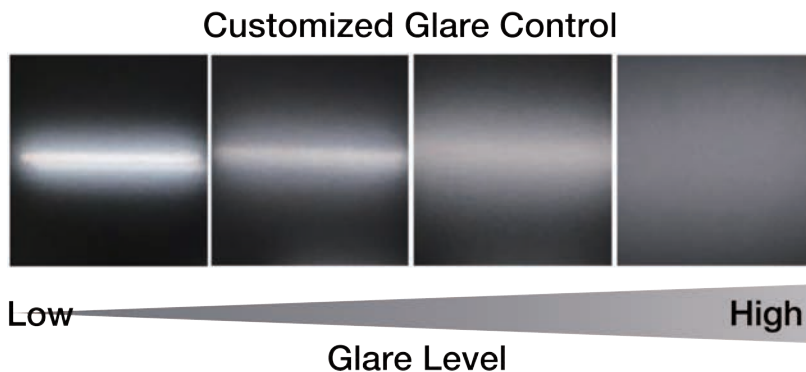
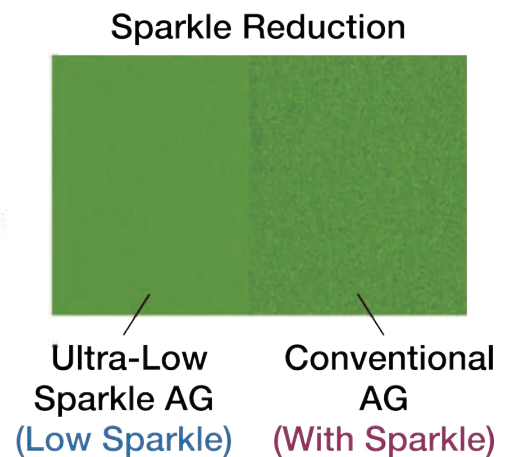
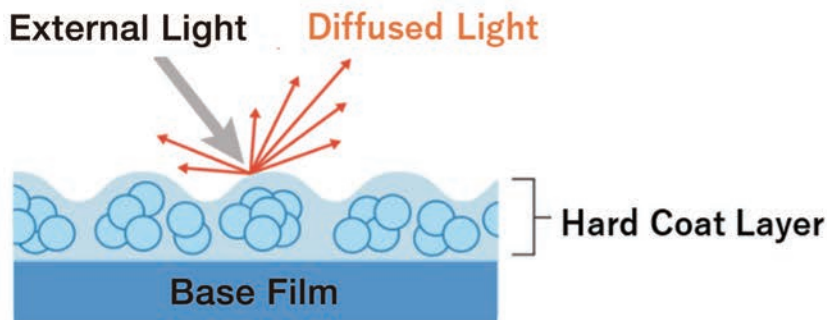
## SUMMARY AND ADVANTAGES

- Suppresses sparkle while preserving resolution
- Controlled microstructure design enhances contrast under ambient light with deeper blacks
- Durable surface for touch application

## FEATURES

- Optimized structure for high-pixel-density OLED panels
- Improved visibility in bright office and outdoor environments compared to standard AG

### Principle of Anti-Glare (AG) Film



## APPLICATIONS

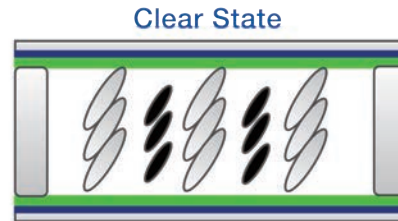
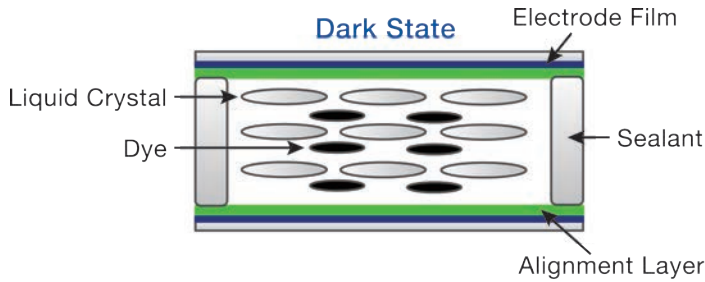
- OLED Devices - Laptop PCs

# Light Control Film

DNP

## SUMMARY AND ADVANTAGES

- Light Control Film can instantaneously switch between clear and dark state with an electrical charge by Guest-Host Liquid Crystal (GHLC) method.



\* Sold by  AKARI  
A DNP-AMI COMPANY

## FEATURES

- Fast switching speed ( $\leq 1$ sec)
- Low haze (1%)
- Color reproducibility (Neutral Black)
- Low voltage requirement ( $\leq 30$ V)
- Possible to laminate on curved surfaces
- Capable of segmented design

Type		Normally Dark	Normally Clear
Transmittance	Clear	32%	70%
	Dark	1%	20%
Haze <sup>(*)</sup>		1%	
Power Consumption		1.5W/ m <sup>2</sup>	0.2W/ m <sup>2</sup>
Endurance Temp.		-30 ~ 90°C	
Color Reproducibility		Neutral Black	
Response Time		0.04sec	0.03sec
Voltage <sup>(*)</sup>		AC±30V	AC±7V

(\*1)At clear state (\*2) Square wave recommended

Normally Dark Type Demo



## APPLICATIONS

- Automotive : Smart and anti-glare functions for window glass such as sunroofs, side & cabin mirrors, and sun visors
- Display : Contrast improvement for transparent display

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