

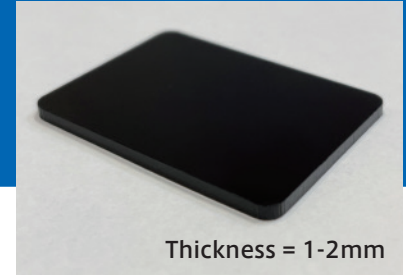


<Resin Sheet Alternative to Glass>

ARONIX[®] Sheet

Optical Window for LiDAR

(Visible Light Cut · Near Infrared Ray Transmitting Sheet)



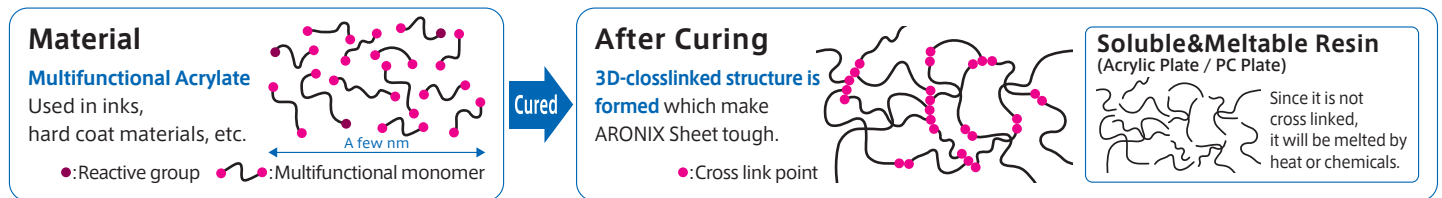
Thickness = 1-2mm

ARONIX[®] Sheet is the best for optical windows of LiDAR that need Excellent Optical Properties, Durability, Workability.

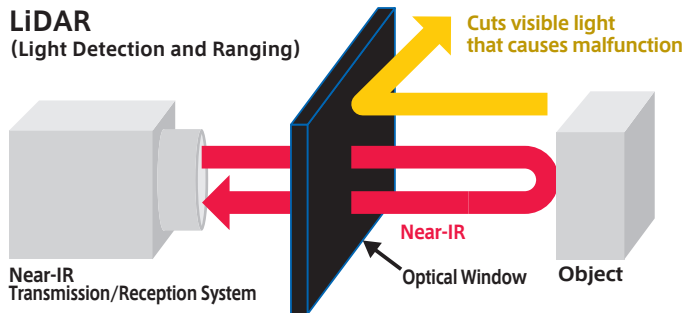
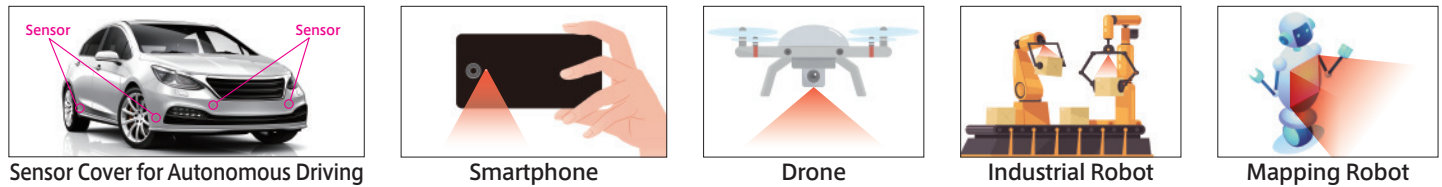
1. Features, Merits & Benefits

	Features		Merits	Benefits
①Optical Properties	Near-IR Transmission Visible Light Cut Low Retardation	90% transmission of 950nm and 1550nm 100% cuts visible light <4nm	Improve sensitivity & reliability Adaptable to indirect TOF and direct TOF systems	Smaller size & Higher performance
②Durability	High Heat Resistance Chemical Resistance High Hardness	High elastic modulus even over 200°C High chemical resistance to oils or solvents Pencil hardness >4H	Capable harsh conditions like inside hood and outside of car	Many choices for installation locations & total design of car
③Workability	Machinability Electrification	Easy to cut using NC router or laser cutter Patternable of conductive materials at high temperature	No need special & expensive machine for cutting Coatable & Printable using ITO or Ag inks/pastes	Reducing cost for assembling

Structure of ARONIX Sheet (Reasons for High Resistance)



2. Applications

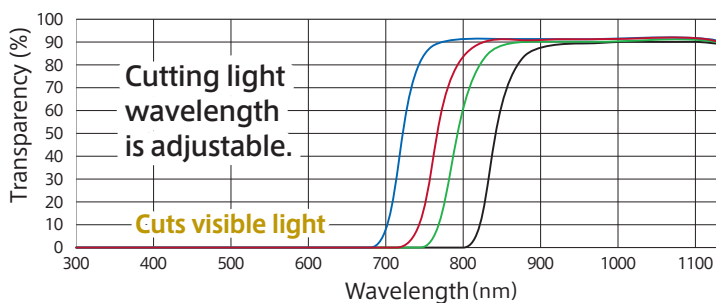


Comparison of Composition With Glass

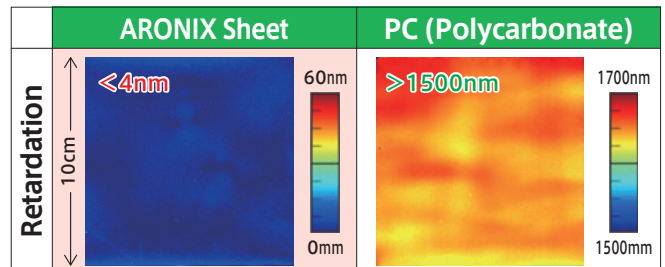
	ARONIX Sheet	Glass
Composition	Cuts visible light by thick sheet itself (Excellent Vis-light shielding & durability)	Paint Cuts visible light by thin dyes layer. (Poor accuracy & durability)
Specific gravity	1.2(Light)	2.5(Heavy)

3. Optical Properties

1) Excellent Visible Light Shielding and High Near-IR transparency





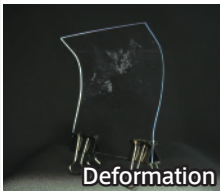
2) Low Retardation (<4nm)

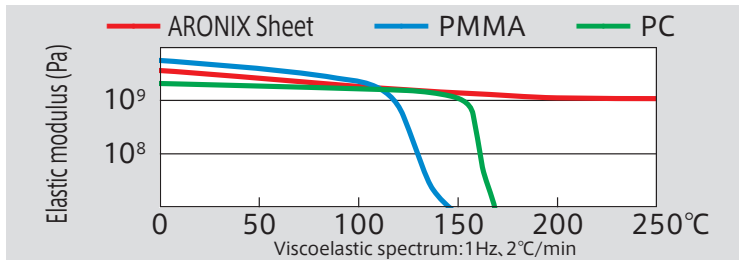


Measured by "KAMAKIRI" (PHOTORON Limited), thickness: 1mm

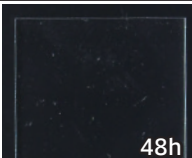
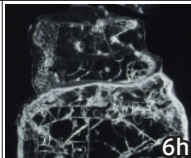

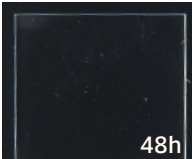
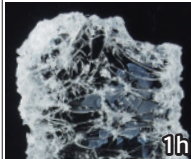

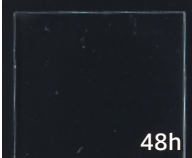

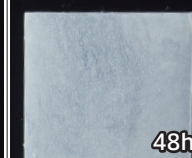
4. Durability

1) High Heat Resistance

	ARONIX Sheet	PMMA(Acrylic plate)	PC(Polycarbonate)
After heating	200°C×30min 	150°C×5min  Deformation	180°C×5min  Deformation



2) Chemical Resistance

	ARONIX Sheet	PMMA(Acrylic plate)	PC(Polycarbonate)
Acetic acid	 48h	 6h	 6h
Acetone	 48h	 1h	 1h
Brake fluid	 48h	 48h Cracks around	 48h

Test method: Immerse the test piece in each chemical

3) High Hardness

	ARONIX Sheet	ARONIX Sheet HC	PMMA(Acrylic plate)	PC(Polycarbonate)
Pencil Hardness(750g)	4H	6H	H	HB
Steel Wool Test #0000,1Kg/4cm ² 20cycle	○	○(500cycle)	×	×

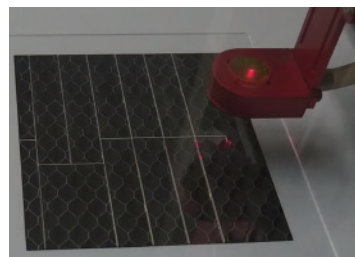
5. Workability

1) Machinability

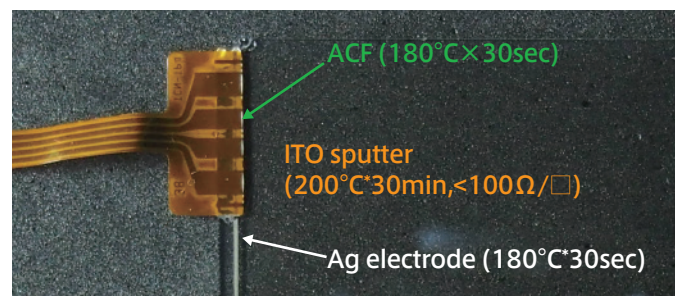
NC Router



Laser Cutter



2) Electrification (Processing Example at 180-200°C)



6. Grade

	Pencil Hardness	Sheet Size	Thickness	Rising Wavelength
Normal	4H	550×400mm (Can be cut to the desired size)	1.0~2.0mm (Adjustable in 0.1 mm)	680nm, 720nm 750nm(Standard), 800nm
Double-sided Hard Coat	6H			

This leaflet is designed to serve as an introduction to the use of our products. Information about physical and chemical characteristics, hazardousness and toxicity stated herein is based on materials and data available at the time of preparing this leaflet, and does not represent a guarantee. To ensure safety when storing, using and disposing of any products featured in this leaflet, Please consult your TOAGOSEI representative. TOAGOSEI assumes no liability for the evaluation or patents regarding any final products containing any of its products.

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