

PLASTIC SCINTILLATORS & SCREENS

SP121 Plastic Scintillator

Product Brochure & Technical Reference

A ZnS(Ag)-coated SP102 structure for alpha and beta measurement applications. The coating and plastic substrate have distinct detection roles and should be specified separately.



Reference product image. Shown geometry is illustrative.

Material reference properties / options

Property	SP102 Substrate	ZnS(Ag) Coating
Material	SP102, polystyrene-based plastic scintillator	ZnS(Ag)
Density	1.023 g/cm ³	4.1 g/cm ³
Refractive index	1.58	Not specified
Light output relative to anthracene	64%	280%
Maximum emission wavelength	423 nm	450 nm
Scintillation decay time	2.4 ns	200 ns
Operating temperature	-40 to 55 C	-40 to 55 C
Coating thickness	Not applicable	4.5 mg/cm ²

Reference values and options for selection. Confirm the material grade, geometry, test conditions and acceptance criteria for the quoted configuration.

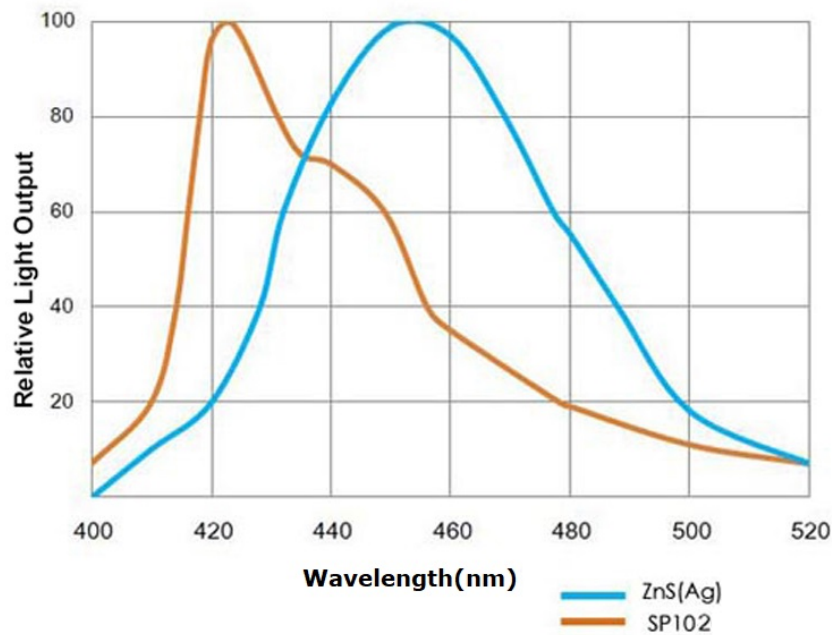
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Configuration & quotation

Define the component around your application

Application examples: Alpha/beta surface contamination detectors; Portable radiation survey instruments; Radiological protection and contamination monitoring

Component emission spectra



Reading the reference

Reference spectra of the ZnS(Ag) coating and SP102 plastic component, shown separately. The finished screen response depends on coating, substrate, light collection and readout.

Material reference for selection. Confirm final performance and test conditions for the quoted configuration.

SP121 Structure and Detection Function

Layer / Item	Function	Design Notes
ZnS(Ag) coating	Alpha-sensitive scintillating layer	Standard coating surface density is 4.5 mg/cm ² . The coated surface should face the alpha source unless the detector design specifies otherwise.
SP102 substrate	Beta-sensitive plastic scintillator base	SP102 supports beta-particle detection and provides mechanical backing for the coated screen.
Coated side	Defines alpha response direction	Alpha particles are easily stopped by thin materials, so any window, film or protective layer must be reviewed.
Optical readout	PMT, SiPM, photodiode or optical module	The sensor should match emission around 423 nm from SP102 and 450 nm from ZnS(Ag).
Signal handling	Instrument-level alpha/beta measurement	Electronics, threshold settings and calibration determine how alpha and beta signals are interpreted.
Panel format	Custom plate, screen or detector panel	Active area, total size, substrate thickness, mounting holes and edge margin should be defined in the drawing.

Properties of SP121 Plastic Scintillators

Property	SP102 Substrate	ZnS(Ag) Coating
Detection role	Beta-particle detection	Alpha-particle detection

Prepare your quotation

RFQ Item	Information to Provide
Application	Surface contamination detector, alpha/beta survey instrument, laboratory counter or custom detector assembly.
Radiation target	Alpha source, beta source, energy range, threshold requirement and measurement geometry.
Panel geometry	Total size, active area, substrate thickness, shape, edge margin, mounting holes and drawing.
Material structure	SP102 substrate requirement, ZnS(Ag) coating thickness, coated side and coating area.
Optical readout	PMT, SiPM, photodiode, light guide, reflector, optical grease or coupling requirement.
Inspection requirement	Coating uniformity, visual inspection, alpha/beta response uniformity, reference source and report format if required.
Order information	Prototype quantity, batch quantity, packaging requirement and delivery schedule.

Reference values and options for selection. Confirm the material grade, geometry, test conditions and acceptance criteria for the quoted configuration.

Send drawings for engineering review

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