

## EJ-228 and EJ-230 PLASTIC SCINTILLATORS

Both of these plastic scintillator are intended for very fast timing applications or when very high pulse pair resolution is required. For the best timing results, EJ-228 in small sizes should be used to minimize photon scattering effects. EJ-230 is a variant on the optimized EJ-228 formula for applications where a detector dimension must exceed 10 cm. The use of light guides is also best avoided.

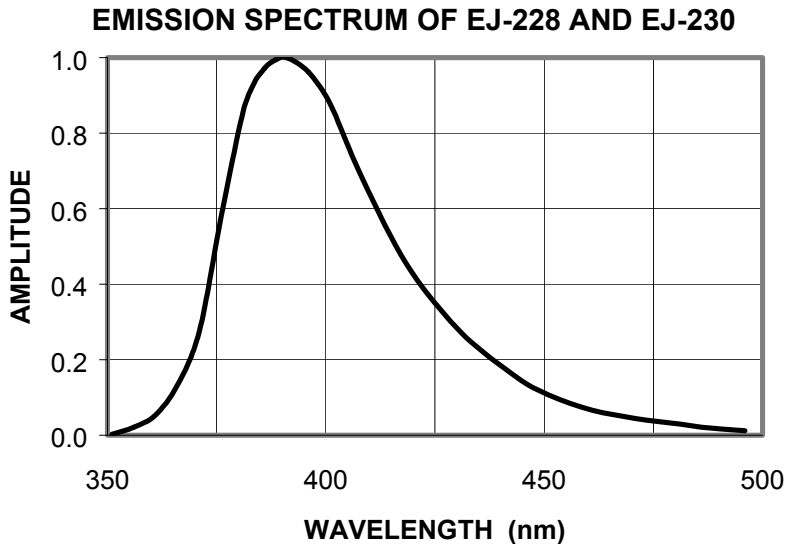
The mean free path of the scintillation emission spectrum, with maximum at 391nm, is typically 100 cm, hence, scintillators up to 50 cm can be employed with good timing and light collection results. These scintillators are particularly useful where very high count rates are present.

<b>Physical and Scintillation Constants:</b>	<b>EJ-228</b>	<b>EJ-230</b>
Light Output, % Anthracene .....	67 .....	64
Scintillation Efficiency, photons/1 MeV e <sup>-1</sup> .....	10,200 .....	9,700
Wavelength of Max. Emission, nm .....	391 .....	391
Rise Time, ns .....	0.5 .....	0.5
Decay Time, ns .....	1.4 .....	1.5
Pulse Width, FWHM, ns .....	1.2 .....	1.3
No. of H Atoms per cm <sup>3</sup> , x 10 <sup>22</sup> .....	5.15 .....	5.15
No. of C Atoms per cm <sup>3</sup> , x 10 <sup>22</sup> .....	4.69 .....	4.69
No. of Electrons per cm <sup>3</sup> , x 10 <sup>23</sup> .....	3.33 .....	3.33
Density, g/cc:.....	1.023 .....	1.023

**Polymer Base:** ..... Polyvinyltoluene  
**Refractive Index:** .....1.58  
**Vapor Pressure:** ..... Is vacuum-compatible  
**Coefficient of Linear Expansion:** ..... 7.8 x 10<sup>-5</sup> below +67°C

**Light Output vs. Temperature:**  
 At +60°C, L.O. = 95% of that at +20°C  
 No change from +20°C to -60°C

**Chemical Compatibility:** Is attacked by aromatic solvents, chlorinated solvents, ketones, solvent bonding cements, etc. It is stable in water, dilute acids and alkalis, lower alcohols and silicone greases. It is safe to use most epoxies with EJ-228 and EJ-230.



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