

Alpha Spectra, Inc. 20D16DSS Detector Data Sheet

Grand Junction, Colorado

Alpha Spectra, Inc. manufactures many different type scintillation detectors. Integral style NaI(Tl) scintillators have been reliable detectors over many decades. The advantage of the integral type detector over a demountable style is that the light coupling from the crystal to the PMT photocathode is optimized. This configuration provides the best energy resolution.

ASI detectors have been used in numerous applications including: hand held survey instruments, density and level gauges in industry, security, x-ray detection in medical diagnostics, medical radioimmunoassay, health physics, academic research, educational labs, nuclear power plant monitoring and low background counting applications.

ASI offers several different integral configurations including: standard, thin integral, side well, and end well types. ASI has built many unusual designs that have met interesting requirements. Each type of detector can be configured with a voltage divider and a preamp. Be sure to give us a call if you have a special configuration in mind.

Typical integral type detectors have from 1" to 5" diameters, but other sizes are also available upon request. Our model 20D16SS/5 is shown here in Figure 1. Some applications require

reduced background across the energy spectrum. The whole body counting application, for example, requires minimal background contribution. For this reason, we offer stainless steel housings. For further improvement in reducing background we also offer copper housings.

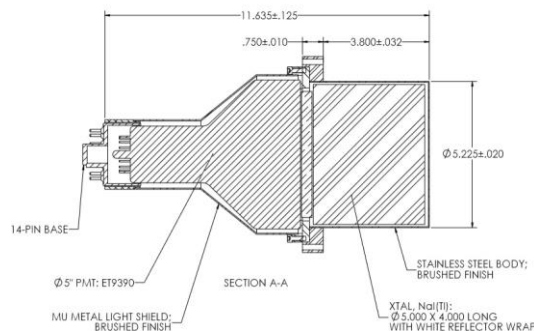


Figure 1. Model 20D16SS/5.

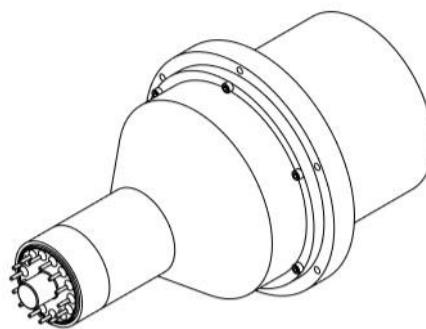


Figure 2. Model 20D16SS/5.

Alpha Spectra, Inc. NaI(Tl) Specifications

Detector Style:	Integral
Crystal Material:	NaI(Tl), Sodium Iodide Thallium doped
Density:	3.67 g/cc
Effective Atomic Number:	51
Hygroscopic:	Yes
Wavelength of Maximum Emission:	415 nm
Principle Decay:	0.23 μ sec (at room temperature)
Index of Refraction:	1.85
Energy Resolution at 662 KeV:	7.0% or better (typical) depends on design configuration. 6.5% or better premium material.
Dimensions:	As required by customer design
Crystal Housings:	Aluminum, stainless steel, copper
Electronics:	14 pin, voltage divider or preamp configuration.
Other Crystal Materials Offered:	CsI(Na), CsI(Tl), BGO, CeBr ₃ and others. See our materials data sheet. Call for details.

Please contact Alpha Spectra, Inc. so that our design team may help you design a custom detector configuration for your measurement application.

