

ICELS

a new low-cost LSC system for ^{14}C dating

Weight 30 kg - Table space 30x30 cm

1 week normal counting time of young sample gives ± 15 ^{14}C years standard deviation



Counting system

- Single-phototube detector
- 7 ml vial, 3 ml typical benzene volume
- ^{14}C counting efficiency 72
- Background 2.8 cpm (3 ml benzene)

Electronic unit, McaEln

- Microprocessorized, low power
- HV, amplifier and multi-channel analyzer
- Serial connector to computer

Operation

- Two reflective teflon tape layers wrapped around vial
- Vial set on top of phototube
- HV adjustment settings puts 59.5 keV ^{241}Am peak in pulse height spectrum channel to balance point for the sample. This maximizes stability and minimizes quench correction
- Counting information sent from computer to McaEln
- At end of counting, results are read by computer

