



INDIAN INSTITUTE OF TECHNOLOGY BOMBAY
MATERIALS MANAGEMENT DIVISION
 Powai, Mumbai 400076.

Ref. PR No. 1000053644

Rfx. No. 6100002740

Item Description: GC5000 Gama chamber

Item Description	Detailed Technical Specification	Technical Compliance (Yes / No)	Additional Information (if any)
GC5000 Gama chamber	<p>1. Unit specification:</p> <p>1.1 Specification of the Unit:</p> <ul style="list-style-type: none"> · Maximum Co-60 source capacity : 518 TBq (14000 Ci) · Dose rate at maximum capacity : 9.0 kGy/hr. [0.9 MRad/hr] at the centre of sample chamber · Dose rate uniformity : Radial : + 25% or better & Axial : -25% or better · Irradiation volume : 5000 CC · Size of sample chamber : Sample Chamber: 17.2 cm [Ø] x 20.5cm [height] · Shielding material : Lead & stainless steel · Mass of the unit : ≈5600 kg approx. · Size of the unit : ≈125 cm [L] x 106 cm[W] x 150 cm [H] · Power requirement : 220/230V, 50Hz, 15 Amps, Single phase, A.C supply. · Timer range : 6 Sec onward 		
	<p>1.2 Control system:</p> <p>The unit should be operated in three (3) modes of operation as indicated below:</p> <p>AUTO MODE:</p>		

	<p>Auto mode operation should involve PLC based control system which is user friendly & having features of indicating on the panel, Dose, Dose rate, Real time & Date etc. along with pre-set time & automatic termination of irradiation time to facilitate easy operation of unit. The unit should be operated in both Time as well as Dose modes taking in to consideration of automatic cobalt-60 decay corrections.</p> <p>ELECTRICAL MODE: The unit should also be operated electrically, in case of the PLC based system gets isolated. The sample irradiation chamber up & down movement should controlled by using electrical push buttons. It should also have a Timer, which can be pre-set and after irradiation, the sample should come automatically at the pre-set time.</p> <p>MANUAL MODE: The movement of sample chamber should also be done with the help of a hand-crank in case of power failure or whenever required.</p>		
	<p>1.3 Cobalt-60 Source: It should house inside the source container/lead flask of the unit. Sources should be in form of pencils and Type approved by Atomic Energy Regulatory Board (AERB), India. These pencils should be welded, decontaminated, tested for leakage and certified.</p>		
	<p>1.4 Dosimetry: BRIT should provide dose rate profile at extreme points of irradiation chamber along with its central dose rate to assess the maximum & minimum doses given to any sample / product.</p>		
	<p>1.5 Power requirement: The unit needs be operated with single phase, AC supply of 220 / 230 V, 50Hz and 10 amps.</p>		
	<p>1.6 Installation: The installation should be done by BRIT personnel. The cost of installation should be included in the cost of the unit.</p>		

	<p>1.7 Maintenance: BRIT's personnel should familiarise the user's personnel in the operation & maintenance aspects of the unit during the period of installation.</p>		
	<p>1.8 Operation Manual: Two sets of operation manuals in English should be provided to users on free of cost at the time of installation of the unit.</p>		
	<p>2. Warranty: A 12 months warranty should be given for any defective components and against bad workmanship.</p>		
	<p>3. Training of the user personnel: Designated personnel from the user's department should be trained both in operation and maintenance aspects of the unit during installation by our installation team. This training should be sufficient for the safe operation of the instrument.</p>		