SPECIFICATIONS OF BOX TYPE SOLAR COOKER

The box type solar cooker-

Should be as per BIS (IS 13429:2000), with size $550mmx550mmx170 \ mm \pm 20 \ mm$
With four matt black coated cooking pots (with lid)(made of stainless steel IS 4536 Part-I, II/ IS 5522)
Solar cooker must have thermal performance (F1) not less than 0.12 (ie, Grade A)
The cover plate should be double glazed made of toughened glass with over all transmittance of not less than 65% .
The body of the solar cooker should be 1.00 mm thick UV resistant FRP.
The gaskets must be made of neoprene/EPDM on minimum 2 mm thickness
Mirror reflectivity should not be less than 75%.
Each solar cooker must be provided with four castor wheels as per BIS 13429
All parts of the cooker must be made of rust/ corrosion free materials .
The solar cooker must carry a label indicating manufacturers name, complete address, telephone numbers and HAREDA 2009 Supply mark.
BIS <u>certificate</u> / Test report from MNRE approved test centers must be enclosed for conformity of the product with above specifications.
In case of Solar cooker with electrical back up, the cooker should be with thermostatically controlled electrical backup of min.200 W to 400 watt (+ 10%) with arrangement for low and high setting and on/off switch and min. 6' cord with all necessary safety controls.
Specifications not included here shall be as per IS 13429:2000.

SPECIFICATIONS OF DISH TYPE SOLAR COOKER

Reflecting Bowl		
Parabolic dish made of single/multiple reflectors fixed firmly to a rigid frame@" . The size and shape of the reflectors will be such that when joined/fixed they automatically form a perfect parabolic dish which when exposed to the Sun in the normal direction a point focus is formed.		
☐ Dish diameter : 1.4 m minimum		
☐ Reflector Material : Bright anodized aluminium sheets of thickness 0.4 mm.		
☐ Reflectivity : >80% with a maximum degradation of 10% in 5 years		
☐ Useful life : 5 years minimum		
☐ Tying cords : the reflector fins should be tied with the supporting rings with a metallic cord so that it does not wear out over a span of time		
☐ Focal spot :It will be of a size such that all the reflected rays are exactly focused at the bottom of the vessel (5 litre pressure cooker for		
1.4 m dia. Dish.)		
☐ Thermal/ optical efficiency : min 40%		
Bowl supporting frame		
The outer frame of the dish should be made of powder coated aluminum channel. The supporting frame for the reflecting bowl will be made of a grid of at least three MS rings supported by MS strips or FRP material/thick MS wire-mesh structure. It will be rigid enough to avoid any deformation of the bowl shape during manual handling or under wind pressure. The MS structure will have epoxy/anti-rust coating.		
Bowl stand		
☐ Of mild steel, epoxy/power coated		
☐ With arrangement to hold cooking vessels of different sizes (pot holder).		
☐ With suitable provision for securing the cooker to the ground		
Tracking Mechanism		
☐ Manual or automatic		
☐ Designed to enable unrestricted 360 degree rotation of parabolic dish around its horizontal axis passing through its focal point and center of gravity and also around its vertical axis, for adjustment of the cooker in the direction of the sun.		
\square With simple locking arrangement to hold/fix the bowl at a particular position.		
☐ With vertical pointer arrangement to facilitate users positioning of the bowl exactly in the direction of the Sun.		
Cooking vessel		

bottom.		
Other requirements		
	The entire structure should be able to withstand wind speed of 60 kmph without any damage .	
	All parts/components should be of weather resistant design specifications to withstand natural weathering outdoors under local climatic conditions for a minimum period of 15 years (except for reflecting mirrors which may require replacement every 5 years).	
	The cooker will be supplied with accessories like cap, hand gloves, goggles, manual for its installation and proper use and took kit for installation.	
	The supplier will give two year guarantee/warranty of the cooker wherein he will provide free services for repair/replacement of parts. The reflectors should be guaranteed for a period of five years. A guarantee card duly signed by the supplier with seal and date of supply shall be provided by the supplier.	

Note:

- 1. Any minor equipment and material may not be specifically mentioned in these specifications but the bidders are required to make the system complete in a every respect in accordance with technical specification and the same shall be deemed to have been covered under the scope of these specifications and shall be provided by the tenderer/supplier within the quoted price.
- 2. Any variation in the specification must be clearly indicated and it will be acceptable by HARED only if it is superior to the DNIT specifications. However, no extra cost on this account would be chargeable.