Specification for Laser Edge Isolation System for crystalline silicon Solar Cell Applications

Functional requirement: To scribe a continuous groove along four sides of mono and multi crystalline silicon solar cells (size; 156 mm x 156mm) to achieve electrical edge isolation.

Specifications:

Sl.No.	Item		Specifications
1	Laser	Type	Diode pumped $Nd:YVO_4$
		Wavelength	532 nm
		Average Power	12 W @ 50 kHz
		Pulse Frequency	10 - 100 kHz
		Pulse width	25 ns @ 50 kHz
		Peak Power	10kW @50 kHz
		Beam roundness	>85%
		Laser Power meter	To be provided as an integral part
2	X-Y Galvo Scanner	Marking field size	Minimum 180mm x 180mm
		Scanner accuracy	±50 microns
		Scan speed	>1500 mm/s
		Beam Diameter	< 50 µm
		Red pointing pilot laser beam	To be provided
3	Fume extraction system	Extraction of fumes and airborne particles	To be provided
4	Controller for process parameters	Software control for Laser parameters	Laser power, Q switch frequency, scan speed etc.
		Graphic software	Software provision to design required patterns for marking.
5	Loading & Unloading	**Manual**	Suitable jig with vacuum holding mechanism to be provided with suitable pump
6	Services	Electricity	220 VAC ±10V, Single phase, 50 Hz
7	Installation & commissioning		At BHEL-ASSCP, Gurgaon, Haryana (Near Delhi)
8	Warranty		One year
9	Training of BHEL Personnel		At BHEL-ASSCP, Gurgaon
10	O & M manual		1 set

For Technical Clarifications please contact ;

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