

EXPERIMENTAL AND DIAGNOSTIC EQUIPMENT REQUIRED IN 1975/76

Assuming that financial approval is granted early in April 1975, the proposed build up of facilities at the Laser Laboratory enables a prediction to be made of the situations that will exist on 1 April 1976.

The situation is expected to be:

- (i) 100 gigawatt laser operational.
- (ii) Pulse stacker under construction at Imperial College.
- (iii) Experimental chamber and diagnostics for 100 GW laser ready.
- (iv) Experimental chamber and diagnostics for 1.5 TW laser under construction.
- (v) Computer systems for 1.5 TW laser underway.
- (vi) Preparation for installation of 1.5 TW laser in hand.

This list enables the necessary Experimental and Diagnostic equipment to be defined.

Clearly, if the 100 GW laser is to be in use for Physics experiments, all equipment necessary for its operation must be available, some equipment is also needed to allow the other activities to proceed. The following list identifies necessary items of equipment, the residual in the budget of £200K will be used to pre-empt the requirements of the following year allowing 'bargain' purchases at 1975/76 prices to be made.

Proposed Purchases in 1975/76

		£	£
Alignment equipment (HeNe lasers etc)			3,500
Infra-red viewers	2 @	260	520
CW YAG laser for target illumination	1 @	3,800	3,800
Vacuum photo-diodes	5 @	233	1,165
Screened room	1 @	4,600	4,600
Ruby laser for target holography	1 @	6,000	6,000

		£	£
Solid state diodes	5 @	85	425
Streak cameras	2 @	22,000	44,000
Dye laser for camera calibration	1 @	7,000	7,000
Optical mounts			7,998
Real time digitiser	1 @	12,690	12,690
100 GW target chamber and diagnostics		20,000	20,000
Spectrometers 1 x 1 m and 1 x 500 mm			6,000
Beam profile monitors			2,000
Two photon fluorescence cameras			1,000
Near and far field diagnostics			2,000
Calorimeters	2 @	542	1,084
Lenses, mirrors, filters			2,000
Oscilloscopes	3 x 7904)		17,097
	2 x 7603) + necessary accessories		4,212
	2 x 7633)		3,652
			<hr/> 150,743
	+ Contingency 10%		15,000
			<hr/> 165,743

The residual sum of ~ £34,000 will be spent on equipment in preparation for 1.5 TW system, diagnostics and associated data logging system.

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