

The logo for CEA (Commissariat à l'énergie atomique et aux énergies alternatives) is displayed in white lowercase letters on a red square background. A thin green horizontal line is positioned below the letters.

DE LA RECHERCHE À L'INDUSTRIE

# LMJ PCM- 2023

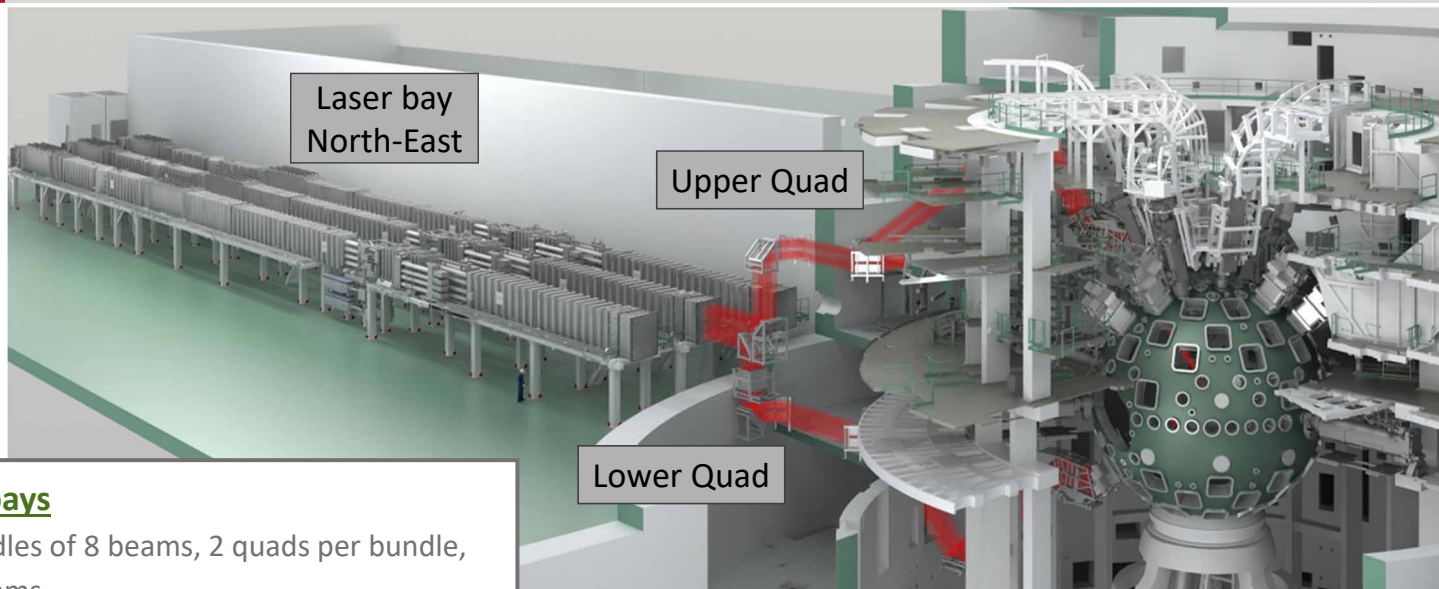
October 10<sup>th</sup> 2023

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# Laser MegaJoule main characteristics

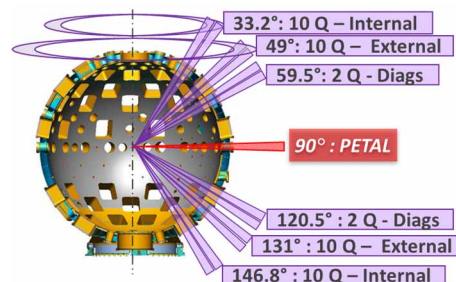


## 4 Laser bays

- 22 bundles of 8 beams, 2 quads per bundle,
- 176 beams,
- 1 specific beam line for PETAL (PW laser).

## LMJ Laser characteristics

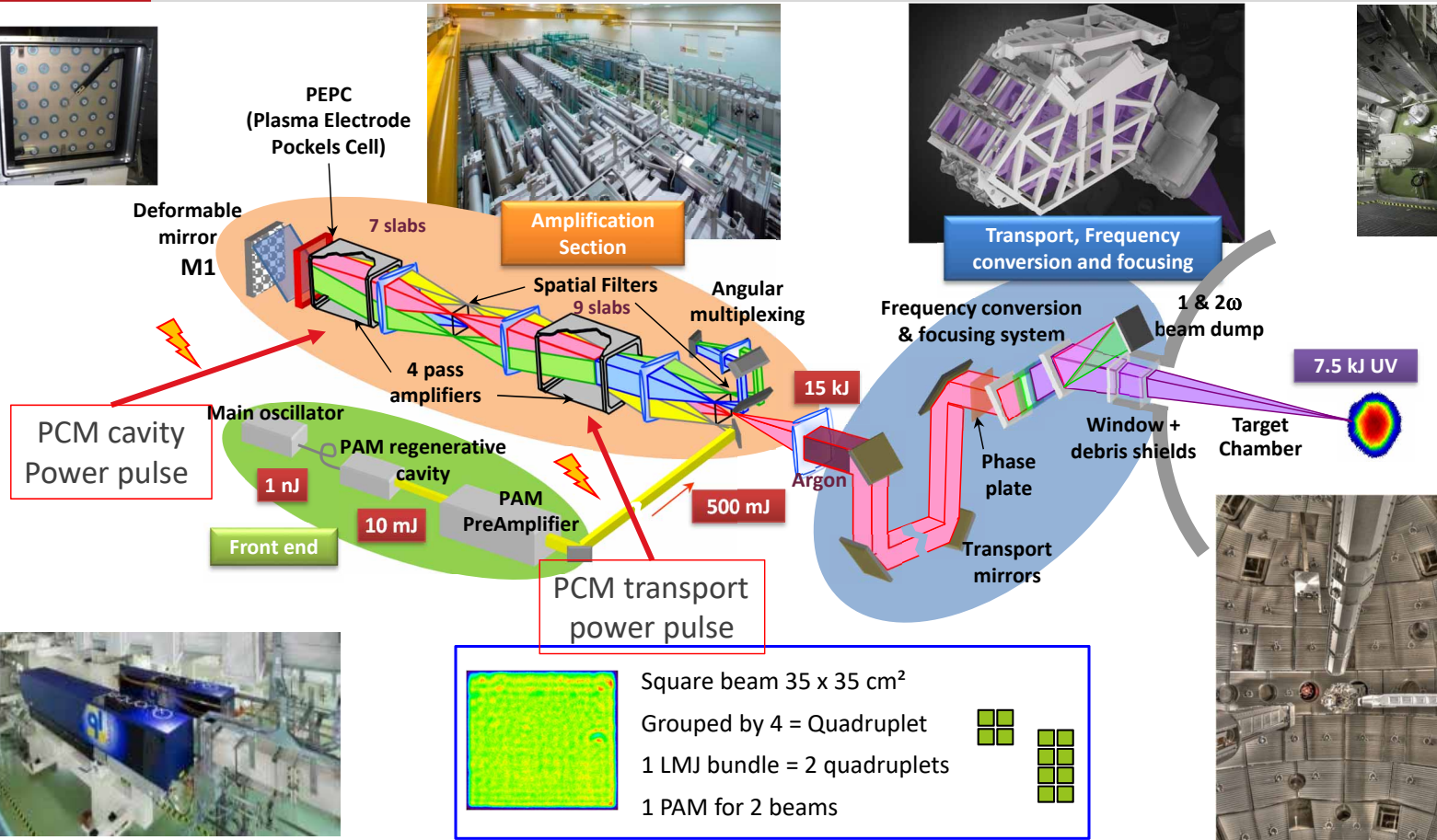
- Glass Neodymium laser,
- Frequency tripled:  $\lambda = 351 \text{ nm}$ ,
- Laser E  $\sim 22 \cdot 60 \text{ kJ}$ , P  $\sim 440 \text{ TW}$  (3ns pulse),
- Pulse duration: from 0.7 to 25 ns.



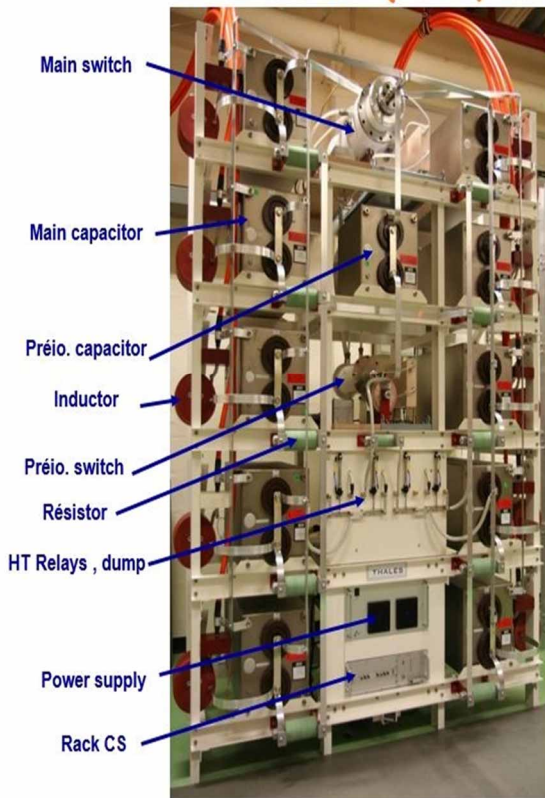
## 1 Target bay

- Target chamber  $\varnothing 10 \text{ m}$ ,
- 200 ports,
- 2 x 2 irradiation cones,
- 10 quads/cone,
- 4 quads for Diagnostics.

# LMJ Beamline Architecture



## LMJ module (24kV, 835kJ)



The PCM poster present :

- The PCM Hardware,
- CS software,
- 2023 CS evolution,
- And the next CS evolution for 2024.

The 2023 evolution has corrected a conception problem from the initial CS.

The 2024 evolution will increase the PCM reliability by adding a new validation sequence before the LMJ power shot.

SME Perdues	Symbole Synchro	Timeout Dump	Etat de Charge / Rechargement	Type Tir	SME Utilisées	Mode_Meier	JC/UT	SME Opé	Mode_Meier	SSP	HINE
						ATTENTE	JC	14	ATTENTE	29	
			5 kV	Puissance 7	EnCharge	JC	16	EnCharge	28		
			5 kV	Puissance 9	EnCharge	UT			27		
							JC				
		3s	22 kV	Puissance 7	CHARGE	JC	16	CHARGE	26		
		4s	22 kV	Puissance 9	CHARGE	UT					
0	●		145mm16s	Puissance 7	EnRechargement	JC	16	EnRechargement	25		
0	●		145mm16s	Puissance 9	EnRechargement	UT					
0	●		0h38mm10s	Puissance 7	EnRechargement	JC	16	EnRechargement	24		
0	●		0h28mm10s	Puissance 9	EnRechargement	UT					
						Autotest	JC	16	Autotest	23	
						Autotest	UT				
						ATTENTE	JC	15	ATTENTE	22	
						ATTENTE	UT				
			18 kV	SELF 3	EnCharge	JC	16	EnCharge	21		
			18 kV	SELF 5	EnCharge	UT					
		7s	22 kV	SELF 7	CHARGE	JC	16	CHARGE	20		
		8s	22 kV	SELF 9	CHARGE	UT					
							JC				
							UT				
1	●			SELF 3	ProductionResults	JC	16	ProductionResults	18		
0	●			SELF 5	ProductionResults	UT					
0	●		0h18mm10s	SELF 3	EnRechargement	JC	16	ATTENTE	17		
1	●		0h18mm10s	SELF 5	EnRechargement	UT					
SME Perdues	Symbole Synchro	Timeout Dump	Etat de Charge	Type Tir	SME Utilisées	Mode_Meier	JC/UT	SME Opé	Mode_Meier	SSP	HISE
										16	



Thank you for your  
attention !

