

Modulators CD 0.4 Configuration

The CD 1 (Lehman) Model for modulators was based upon a conventional design, in which high voltage charges a pulse forming network (PFN) which is then discharged through a thyatron switch to drive a pair of klystron loads through a step-up transformer. This 2-Pack model's known deficiencies were addressed through an R&D program to develop an all-solid-state Induction type modulator, which now defines the new CD 0.4 technical and cost baseline.

Main Linacs: A single solid state Induction driver for eight klystrons (8-Pack).

Injection Linacs: Induction variant hybrid (2-Pack). Induction stack plus conventional low turns ratio step-up transformer to match loads. A 4-Pack may be feasible. Other hybrid designs being developed by industry may prove feasible.

AREA	MODEL	Klystrons	Kv Peak	Amps Peak	Width Rf usec	PRF Hz	AC kW/Mod @34.5kV	DC kW @ 2.2 kV	Pulse Pwr Out kW	ModEffy %	Total Modulators	AC kW per Sector	AC kW All	
<i>Main Linacs</i>														
	X Band	8-Pack Induction	8-75 MW 60%E	490	2120	3.0	120	553	526	415	75	207	4980	114540
<i>Injection Linacs</i>														
	L Band	2-Pack Induction	2-75 MW 60%E	388	774	6.0	120	257	244	180	70	15		3857
	S Band	2-Pack Induction	2-65 MW 45%E	350	746	5	120	247	235	173	70	9		2224
	C Band	2-Pack Induction	2-75 MW 60%E	388	774	4	120	171	163	120	70	47		8057
	X Band Comp.	2-Pack Induction	4-75MW 60%E	490	1060	1.5	120	120	114	90	75	2		240
TOTALS													128919	

AREA	MODEL	Total Modulators	H2O gpm	H2O gpm per sector	H2O gpm All	Footprint L ft-in W ft-in		H ft-in	Wt lbs Mod	Wt lbs/ Kly 2 Pk	Wt lbs Mod+2Pks	Notes
<i>Main Linacs</i>												
	X Band	8-Pack Induction	207			15"-2"	4"-2"	8"-6"	6000	6000	30000	Tank ~4 ft below floor
<i>Injection Linacs</i>												
	L Band	2-Pack Induction	15									
	S Band	2-Pack Induction	9									
	C Band	2-Pack Induction	47									
	X Band Comp.	2-Pack Induction	2									
TOTALS			280									

REFERENCES
Configuration http://www...