

Location :	In the Cavern (near the detector)					Cables		In the Counting house					
	L0 front-end			ECS	LVPS for L0 FE	Vacuum system	Lost in the LV Cables per Repeater board		L1 front-end		PS for L1 FE	HV	PS for other equipment, spares, etc.
VELO	L0 front-end (hybrid)	Repeater board, regulators included	regulators		75% efficiency				L1 front-end	Regulators			
Power consumption of chip [W]	1										75% efficiency		
Number of chips per board	16												
Power consumption per board [W]	16	22		100	4.7			12	100		25%		
Number of boards	88	88	already included	1	25%			88	84	already included	9		
Total power consumption [kW]	1.5	2		0.1	1.2			2.5	1.1		3		1
Cooled ?	?	?		no	yes			?	no	yes	yes	yes	
Inefficiency %	?	?		100%	5%			?	100%	5%	5%	5%	
cavern (detector) / counting house part %								90%	10%				
heat dissipated to air [kW]	#VALUE!	#####		0.1	0.06			#VALUE!	0.99	0.11	0.45	0.15	0.05
heat removed by the cooling system [kW]	#VALUE!	#VALUE!		0	1.14			#VALUE!	0	0	8.55	2.85	0.95
Total power dissipated to air [kW]	#VALUE!					0.76							
Total power to be cooled with water [kW]	#VALUE!					12.35							
Total electrical power consumption [kW]	0					22							

Not sure, to be confirmed
Big dissipation to the air!

needed in the counting house

needed in the cavern but supplied from the counting house

Total: 13 kW

9 kW

Total power needs: 22 kW

What still is missing or has to be confirmed:

Other sub-system that need power....? Pumps, motors, etc...?

To dimension what TS-EL will have to provide to the sub-detectors in terms of electrical power, a 30% safety (or spare) margin should be added (in addition to what is still missing).