

Location :	In the Cavern (near the detector)						Cables		In the Counting house					
	L0 front-end		ECS	Regulators for L0 FE		LVPS	Lost in the LV Cables per Repeater board		L1 front-end			LVPS for L1	HVPS	PS
Rich 1 & 2	L0 front-end RICH 1	L0 front-end RICH 2		for Rich 1	for Rich 2				L1 front-end RICH 1 (throttle or included)	L1 front-end RICH 2 (throttle or included)	regulators			PS for other electronics, sub-systems, spare
Power consumption of chip [W]						with 75% efficiency						with 75% efficiency		
Number of chips per board	2 Pixel 2 PINT 2Analog pilot 4 GOL	2 Pixel 2 PINT 2Analog pilot 4 GOL												
Power consumption of board [W]	11	11		8.5	8.5	6.1		120	120			1.4		
Number of boards	98	144		98	144	75%		5	6	already included		75%		
Total power consumption of boards [kW]	1.1	1.6	0.2	0.9	1.3	2.1	1	0.6	0.8		0.5	1	2	
Cooled ?	?	?	?			yes	no	yes	yes		yes	yes	yes	
Inefficiency %	?	?	?			10%	100%	5%	5%		5%	5%	5%	
cavern (detector) / counting house part %							?	?						
heat dissipated to air [kW]	#VALUE!	#VALUE!	#####			0.13	?	?	0.03	0.04		0.025	0.05	0.1
heat removed by the cooling system [kW]	#VALUE!	#VALUE!	#####			1.17	0	0	0.57	0.76		0.475	0.95	1.9
Total power dissipated to air [kW]	?						0.3							
Total power to be cooled with water [kW]	?						4.7							
Total power consumption [kW]	8.2						4.9							

14 kW

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

Total:

For the RICH 1
For the RICH 2

needed in the cavern but
supplied from near the
counting house
3.7 kW
4.6 kW
8.3

needed in the
counting house
2.4 kW
2.6 kW
5

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).