Electricity/Heat dissipation in the UX cavern — 27-03-2003

all numbers are given in kW

cooled by

Counting house

Item	D1	D2	A/B (D3)	Sum	power cooled by water	heat dissipated to air inside the barrack (cooled by the air cond)	heat dissipation to air	Mixed water	Chilled water	Deminerilized
Electronics in Racks (5% inefficiency)		203	236	439	439	21.95	0	x	x	
Electronics not in racks (PCs and others, during comissioning for example)	2	2	2	6		6	0	x		
Light	1	1	1	3		3	0	x		
People (100 W / person if 10 --> 1kW)				1		1	0			
General Service				?		0	0	x		
Farm (5% inefficiency)	574	280		854	854	42.7	0	x	x	
Total in the counting houses						74.65				

Counting House area

Item	Gas plat 86	Gas plat 84	DELPHI Barrel	Head wall	Sum	power cooled by water	heat dissipated...	heat dissipation to air	Mixed water	Chilled water	Deminerilized
Gas system	2	2			4		0	4			
Cooling system	2	2			4		0	4			
Air conditioning 18 kW consumption max per unit (estimate of kW dissipated)	?						0	?			
Exhibition (DELPHI)	2				2		0	2			
Magnet (MSS &MCS)				1.5	1.5		0	1.5			
Electronics close to PZ				?			0	?			
SUM					1314.5	*1293*	74.65	**11.5**			

We don't know what power is dissipated from the air conditionner units

Detector area

Item	VELO + VETO	IT + TT	RICH 1 + 2	Magnet	OT	ECAL/HCALPS/SPD			Others	Muon	Sum	power cooled by water	heat dissipated...	heat dissipation to air	Mixed water	Chilled water	Demin.
Electronics in Racks (cooled, 5% inefficiency)	1.6					17.3				11.5	30.4	38			x		
On-detector elec. (cooled, 15% inefficiency)		3			8.5						11.5	12			x	x	
Service boxes (20% inefficiency)											0	0			x		
On-detector electronics (s-box, cables...) not cooled so far	12	7.23	2		8	2.7				10.5				42.43			
pumps, lights …									5		5			5			
Magnet				8.5							8.5			8.5			
Others											0			?			
SUM	13.6	10.23	2	8.5	16.5	20	0	0		22	55.4	*50*		**55.93**			

TOTAL to be cooled by mixed water	1343
Left cooling capacity by mixed water	157 — 1500 - the total power cooled by mixed water

Not sure, to be confirmed

Big dissipation to the air !

For the RICH it might be doubled !?