

**High  
Luminosity  
LHC**

**HL-LHC  
Cooling and  
Ventilation  
users' requirements  
for P1**

**WP 17.3  
(status 16.12.15)**



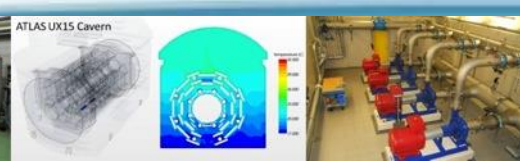
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# Heat loads summary



Location	WP	Equipment	Users requirements on 19. 10. 2015				Users requirements on 16. 11. 2015			
			Water cooling		Air cooling		Water cooling		Air cooling	
			Heat load [kW]	Water type	Heat load on chillers [kW]	Free cooling [kW]	Heat load [kW]	Water type	Heat load on chillers [kW]	Free cooling [kW]
UR15	WP17.2	DC (cooled) cables	1860	demi	194	-	1304	demi	94	-
	WP6	Power converters	624	demi	96	-	524	demi	96	-
	WP7	Dumps S+R	328	demi	46	-	328	demi	46	-
	WP17.2	AC (warm) cables	-	-	20	-	-	-	20	-
	WP17.2	Transfos	-	-	33	-	-	-	33	-
	WP17.2	TGBT, UPS, etc.	-	-	8	-	-	-	8	-
	?	racks utilisateurs	-	-	-	-	-	-	34	-
	?	racks utilisateurs	-	-	-	-	-	-	34	-
		Tunnel walls							-100	
		primary air supply at 20 C							-30	
	<i>Sub-total</i>				397			234		
UR15 Faraday Cage	WP4	RF racks	-	-	15	-	-	-	15	-
UA13	WP4	RF amplis	800	demi	50	-	800	demi	80	-
UA17	WP4	RF amplis	800	demi	50	-	800	demi	80	-
US17	WP9	QURCG	350	Secondary raw	20	-	350	Secondary raw	20	-
	WP17.2	Transfos	-	-	17	-	-	-	17	-
	WP17.2	TGBT, UPS, etc.	-	-	5	-	-	-	5	-
US17 safe room	WP17.2	TGBT, UPS, etc.	-	-	7	-	-	-	7	-
US17 Faraday Cage	WP4	RF racks	-	-	15	-	-	-	15	-
UW17	WP17.3	CV pumps	-	-	50	-	-	-	60	-
SR17	WP6	HV power supply	100	demi	50	-	200	demi	360	-
SHM17	WP9	QSCG	5000	Primary	200	-	5000	Primary	-	200
SDH17	WP9	QSRG cold box	930	Primary	-	10	930	Primary	-	10
SU17	WP17.3	Chillers	1506	Primary	0	-	1463	Primary	0	-
	WP17.3	CV pumps	-	-	100	-	-	-	100	-
	WP17.3	Primary ventilation	-	-	230	-	-	-	315	-
	WP17.3	Safe areas pressurization	-	-	100	-	-	-	100	-
SD17	-	-	-	-	-	-	-	-	-	
SE17	WP17.2	LV room	-	-	0	-	-	-	0	-
	WP17.2	HV room	-	-	-	11	-	-	-	11
All surface buildings	-	Heat gains estimation	-	-	200	-	-	-	25	-
<b>TOTAL</b>			<b>12298</b>		<b>1506</b>	<b>21</b>	<b>11699</b>		<b>1463</b>	<b>221</b>

UR15:  
 234 kW=  
 6 x 12000 =  
 72000 m3/h



ATLAS UX15 Cavern

