

AHU SYSTEM CALCULATION NOTE

UTA-001

Project: Vectores Virales
Client: LEITAT
System: HVC
Doc. Code: 021LEI01- CAL - HVC - N01
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CLIENT APPROVAL:

Name		Signature:	
Date			

Version	Object	Written by	Reviewed by	Date
A	Ingeniería	ACR	CSR	10/11/2021

Renovations				
Room classification:				
Classification	ren/h			
A	0			
B	55			
C	35			
D	20			
ISO 4.8	0			
ISO 5	40			
ISO 7	25			
ISO 8	20			
NC	6			
Internal air quality according RITE:				
Category	Per Person		Per m ²	
	l/s	m3/h	l/s	m3/h
IDA 1	20,00	72,00	0,00	0,00
IDA 2	12,50	45,00	0,83	2,99
IDA 3	8,00	28,80	0,55	1,98
IDA 4	5,00	18,00	0,28	1,01
Min fresh air:				
Min fresh air	%	10%		

Internal and external charges						
Personnel:						
Activity intensity			Sensible		Latent	
			W/p		W/p	
At rest			72,91		29,42	
Light intensity movement			78,72		52,67	
Medium intensity movement			81,40		65,12	
High intenisty movement			126,74		166,28	
Very high intensity movement			168,60		255,81	
"U" Values:						
for WALLS		for FLOORS	for CEILING	for WINDOW	Insol.	SHGC
W/m²K		W/m²K	W/m²K	W/m²K	W/m²	-
0,73		0,41	0,50	3,30	200,00	0,41
Zone reference			C2			
Illumination						
Illumination			W/m2	20,00		

External conditions			
		SUMMER	WINTER
Dry temeperature	°C	32,00	0,00
Wet temperature	°C		
Relative humidity	%	68,00	80,00
Absolut humidity	g/kg	20,49	3,01
Enthalpy	kJ/kg	84,65	7,54

Cooling / Heating conditions			
		INLET	OUTLET
Cooling coil	°C	7,00	12,00
Heating coil	°C	50,00	40,00

Overdesign factor			
	Loads	Fans	Coils
Overdesign factor	100%	100%	110%

Notes	

Room data

[illegible]

Notes

[illegible]

Air leakage

[illegible]

Notes

Loads

[illegible]

Notes

[illegible]

Conditions						
			Return T	Fresh air T	Mix T	Supply T
SUMMER	Dry temperature	°C	20.00	32.00	21.20	14.00
	Relative humidity	%	50.00	68.00	56.32	74.86
	Absolut humidity	g/kg	7.26	20.49	8.76	7.26
	Dew point	°C	9.21	25.32	12.11	9.59
	Enthalpy	kJ/kg	38.53	84.65	43.11	32.41
WINTER	Dry temperature	°C	20.00	0.00	18.00	23.00
	Relative humidity	%	50.00	80.00	54.55	42.60
	Absolut humidity	g/kg	7.26	3.91	6.83	7.26
	Dew point	°C	9.21	-3.03	8.66	9.54
	Enthalpy	kJ/kg	38.53	7.54	35.41	41.58

[illegible][illegible]

Flowrate summary:						
Supply	m ³ /h	4.520	Room exhaust	m ³ /h	0	
Return	m ³ /h	4.280	Min fresh air (ventilation or design OAI)	m ³ /h	452	
Leakages	m ³ /h	-240	Exhaust	m ³ /h	-212	

Coils						
Cooling (Water Coil)	Dehumidifying	Sensible heat	Latent heat	Fan heat load	Cooling Power	Chilled water flow
	kg/h	kW	kW	kW	kW	m ³ /h
	7.18	12.35	4.99	2.10	21.38	3.68
Heating (Water Coil)	Heating Power (Summer)	Heating Power (Winter)			Max Heating Power	Heating water flow
	kW	kW			kW	m ³ /h
	66	8.29			8.29	0.71

Humidification		
Nominal capacity	Total Capacity	Power (aprox)
kg/h	kg/h	kW
2	3	2

Power
kW
5

Supply	Return	Exhaust
kg/h	kg/h	kW
2.10	1.98	0.09