

# MEMORIAL DE CÁLCULO DE CARGA TÉRMICA

## PROJETO DE CLIMATIZAÇÃO

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**LOCAL: Instituto Multidisciplinar de Reabilitação e Saúde – CASA 49**

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## 1. OBJETIVO

Esta especificação visa descrever as Condições Gerais para montagem e execução do Este memorial tem como objetivo apresentar o método de cálculo utilizado e os resultados obtidos de carga térmica do Edifício Residencial, localizado na Casa Nº 49, Rua Padre Feijó, Canela, para a execução do projeto do sistema de climatização e ventilação mecânica.

## 2. MÉTODO DE CÁLCULO

O cálculo de carga térmica foi realizado conforme recomenda a ABNT NBR – 16401.1:2008, através do software Hourly Analysis Program (HAP), da Carrier, testado de acordo com os procedimentos da Norma ASHRAE 140-2007, Método Padrão de Teste de Avaliação de Programas de Computação para Análise de Energia Predial.

A localização geográfica e a orientação do recinto a ser condicionado tem influência direta no cálculo de carga térmica. Os principais fatores que interferem nas trocas térmicas são: quantidade de ocupantes, taxa de iluminação, taxa de dissipação de calor dos equipamentos, áreas dos ambientes a serem climatizados e as características das paredes que compõem o envoltório dos mesmos, bem como as esquadrias nelas existentes (Anexo 01).

### 2.1 CONDIÇÕES EXTERNAS

- Temperatura de Bulbo Seco Verão: 32,2 °C
- Temperatura de Bulbo Úmido Verão: 25,6 °C
- Altura considerada: 5,8 M

### 2.2 CONDIÇÕES INTERNAS

- Temperatura de Bulbo Seco Verão: 22,0 a 24,0 °C
- Temperatura de Bulbo Seco Inverno: 18,3 a 21,1 °C
- Umidade Relativa: < 60%

## 2.3 OCUPAÇÃO

A quantidade de ocupantes dos ambientes foi definida a partir da planta de layout disponibilizada pela disciplina de arquitetura.

A vazão de ar externo por pessoa foi definida pelo projetista de acordo com a ABNT NBR – 16401:2008.

A vazão de ar externo por área ocupada é proporcional a ocupação dos ambientes, ou seja, quanto maior a quantidade de pessoas maior será a taxa de renovação de ar externo.

## 2.4 ILUMINAÇÃO

A taxa de iluminação dos ambientes foi definida pelo projetista de acordo com a ABNT NBR – 16401:2008.

## 3. RESULTADOS

Para maiores esclarecimentos a respeito dos resultados do cálculo de carga térmica, verificar planilha de cálculo (out put), gerada pelo software (Anexo 01).

## 4. ANEXO 01 – CARGA TÉRMICA CASA 49

### Design Parameters:

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City Name .....	<b>Salvador</b>
Location .....	<b>Brazil</b>
Latitude .....	<b>-12,9</b> Deg.
Longitude .....	<b>38,3</b> Deg.
Elevation .....	<b>5,8</b> m
Summer Design Dry-Bulb .....	<b>32,2</b> °C
Summer Coincident Wet-Bulb .....	<b>25,6</b> °C

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Summer Daily Range .....	<b>6,0 °K</b>
Winter Design Dry-Bulb .....	<b>20,0 °C</b>
Winter Design Wet-Bulb .....	<b>13,8 °C</b>
Atmospheric Clearness Number .....	<b>1,00</b>
Average Ground Reflectance .....	<b>0,20</b>
Soil Conductivity .....	<b>1,385 W/(m-°K)</b>
Local Time Zone (GMT +/- N hours) .....	<b>3,0 hours</b>
Consider Daylight Savings Time .....	<b>Sim</b>
Daylight Savings Begins .....	<b>March, 15</b>
Daylight Savings Ends .....	<b>October, 31</b>
Simulation Weather Data .....	<b>N/A (IWC)</b>
Current Data is .....	<b>2001 ASHRAE Handbook</b>
Design Cooling Months .....	<b>January to December</b>

**Design Day Maximum Solar Heat Gains**

 (The MSHG values are expressed in W/m<sup>2</sup>)

Month	N	NNE	NE	ENE	E	ESE	SE	SSE	S
January	146,8	148,1	372,8	602,2	736,5	760,6	670,1	479,9	210,1
February	149,6	244,8	496,0	664,7	741,7	713,6	577,6	348,9	143,0
March	250,8	401,2	604,4	710,5	734,1	645,2	457,6	186,0	119,0
April	421,0	534,4	670,3	712,3	671,5	526,6	290,7	101,6	101,6
May	525,5	604,7	697,4	686,5	604,0	428,8	171,2	89,2	89,2
June	558,5	628,7	702,4	678,3	566,8	385,9	130,6	83,0	83,0
July	524,2	604,7	693,8	687,0	586,6	417,5	167,6	85,8	85,8
August	419,6	531,3	666,2	705,1	662,9	516,9	280,3	94,8	94,8
September	236,3	389,9	588,0	716,2	734,4	639,3	444,8	176,8	109,0
October	138,0	238,2	495,2	674,2	751,0	714,0	569,9	328,3	130,5
November	140,2	141,1	380,9	611,2	742,5	763,6	670,3	475,5	201,6
December	143,4	144,1	329,8	578,8	731,3	775,7	703,5	527,3	260,3
Month	SSW	SW	WSW	W	WNW	NW	NNW	HOR	Mult
January	481,4	674,5	766,3	744,3	612,8	382,7	148,2	985,9	1,00
February	338,4	577,7	720,2	756,2	679,1	500,4	245,2	973,5	1,00
March	182,8	448,9	646,0	743,6	727,8	601,6	403,7	928,2	1,00
April	101,6	287,9	526,7	673,8	716,8	668,4	535,8	825,7	1,00
May	89,2	171,7	428,8	603,4	687,2	697,6	604,9	731,5	1,00
June	83,0	124,5	385,9	574,8	672,1	700,4	625,8	686,8	1,00
July	85,8	154,1	417,0	599,8	688,3	688,1	603,0	714,5	1,00
August	94,8	270,6	515,3	667,6	716,2	659,8	534,9	803,8	1,00
September	175,1	450,2	641,2	732,9	711,3	585,6	389,4	904,8	1,00
October	339,6	574,9	715,1	746,4	663,6	486,0	238,9	956,9	1,00
November	476,2	669,4	762,0	739,4	605,6	375,1	141,1	978,3	1,00
December	528,0	704,2	776,3	732,1	579,8	330,7	143,9	981,5	1,00

Mult = User-defined solar multiplier fator.

**Location: Salvador, Brazil**

(Dry and Wet Bulb temperatures are expressed in °C)

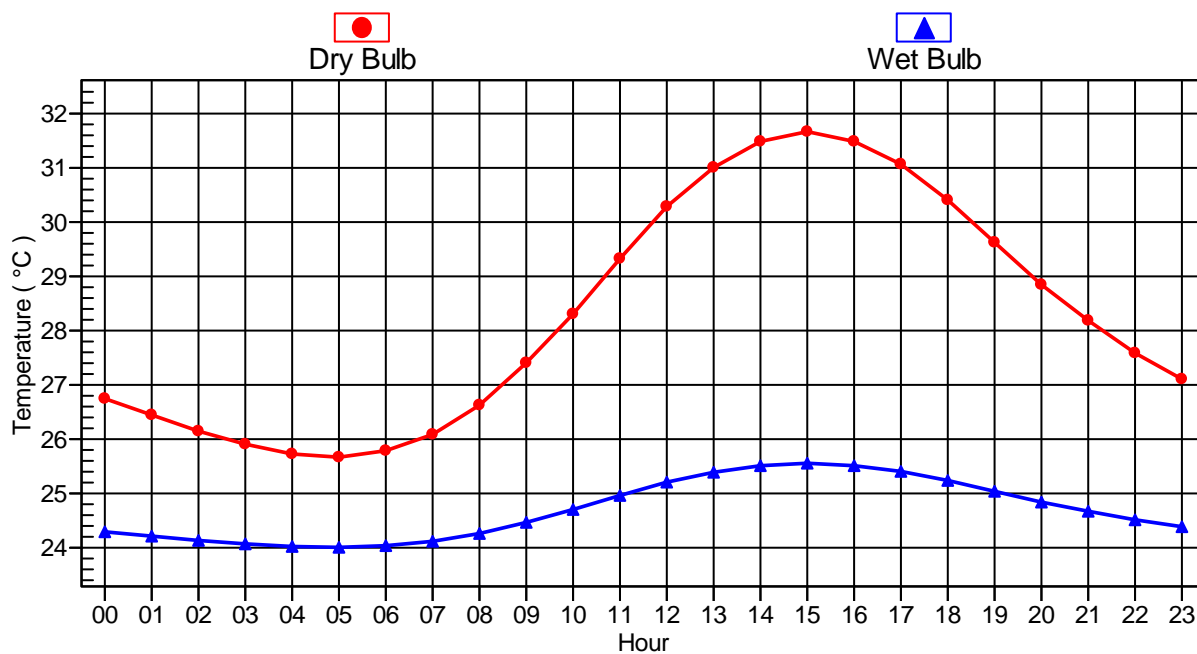
Hr	January		February		March		April		May		June	
	DB	WB	DB	WB	DB	WB	DB	WB	DB	WB	DB	WB
0000	27,3	24,3	27,3	24,3	26,6	23,8	25,4	23,2	23,8	22,5	22,7	21,4
0100	27,0	24,2	27,0	24,2	26,2	23,7	25,1	23,1	23,4	22,4	22,3	21,3
0200	26,7	24,1	26,7	24,1	25,9	23,6	24,8	23,0	23,1	22,3	22,0	21,2
0300	26,5	24,1	26,5	24,1	25,6	23,5	24,5	23,0	22,8	22,2	21,7	21,1
0400	26,3	24,0	26,3	24,0	25,4	23,5	24,2	22,9	22,6	22,1	21,5	21,0
0500	26,2	24,0	26,2	24,0	25,2	23,4	24,1	22,8	22,4	22,1	21,3	21,0
0600	26,3	24,0	26,3	24,0	25,1	23,4	24,0	22,8	22,3	22,1	21,2	20,9
0700	26,6	24,1	26,6	24,1	25,2	23,4	24,1	22,9	22,5	22,1	21,3	21,0
0800	27,2	24,3	27,2	24,3	25,5	23,5	24,4	22,9	22,8	22,2	21,6	21,1
0900	28,0	24,5	28,0	24,5	26,1	23,7	25,0	23,1	23,3	22,4	22,2	21,2
1000	28,9	24,7	28,9	24,7	26,9	23,9	25,7	23,3	24,1	22,6	23,0	21,5
1100	29,9	25,0	29,9	25,0	27,8	24,1	26,6	23,6	25,0	22,9	23,9	21,8
1200	30,8	25,2	30,8	25,2	28,8	24,4	27,7	23,8	26,0	23,2	24,9	22,1
1300	31,6	25,4	31,6	25,4	29,7	24,6	28,6	24,1	27,0	23,5	25,8	22,4
1400	32,0	25,5	32,0	25,5	30,5	24,8	29,3	24,3	27,7	23,7	26,6	22,6
1500	32,2	25,6	32,2	25,6	30,9	25,0	29,8	24,4	28,2	23,8	27,0	22,7
1600	32,0	25,5	32,0	25,5	31,1	25,0	30,0	24,4	28,3	23,9	27,2	22,8
1700	31,6	25,4	31,6	25,4	30,9	25,0	29,8	24,4	28,2	23,8	27,0	22,7
1800	31,0	25,2	31,0	25,2	30,5	24,8	29,4	24,3	27,7	23,7	26,6	22,6
1900	30,2	25,0	30,2	25,0	29,9	24,7	28,7	24,1	27,1	23,5	26,0	22,4
2000	29,4	24,8	29,4	24,8	29,1	24,5	28,0	23,9	26,3	23,3	25,2	22,2
2100	28,7	24,7	28,7	24,7	28,3	24,3	27,2	23,7	25,5	23,0	24,4	21,9
2200	28,1	24,5	28,1	24,5	27,6	24,1	26,5	23,5	24,9	22,8	23,7	21,7
2300	27,7	24,4	27,7	24,4	27,0	23,9	25,9	23,4	24,3	22,7	23,1	21,5

Hr	July		August		September		October		November		December	
	DB	WB	DB	WB	DB	WB	DB	WB	DB	WB	DB	WB
0000	22,1	20,8	23,2	21,5	24,9	22,6	25,4	23,2	25,6	23,7	26,7	24,3
0100	21,7	20,7	22,9	21,4	24,5	22,5	25,1	23,1	25,3	23,6	26,4	24,2
0200	21,4	20,6	22,6	21,3	24,2	22,5	24,8	23,0	25,0	23,5	26,1	24,1
0300	21,1	20,5	22,3	21,2	23,9	22,4	24,5	23,0	24,8	23,5	25,9	24,1
0400	20,9	20,5	22,0	21,1	23,7	22,3	24,2	22,9	24,6	23,4	25,7	24,0
0500	20,7	20,4	21,8	21,1	23,5	22,3	24,1	22,8	24,6	23,4	25,7	24,0
0600	20,7	20,4	21,8	21,1	23,4	22,2	24,0	22,8	24,7	23,5	25,8	24,0
0700	20,8	20,4	21,9	21,1	23,6	22,3	24,1	22,9	25,0	23,5	26,1	24,1
0800	21,1	20,5	22,2	21,2	23,9	22,4	24,4	22,9	25,5	23,7	26,6	24,3
0900	21,6	20,7	22,7	21,3	24,4	22,5	25,0	23,1	26,3	23,9	27,4	24,5
1000	22,4	20,9	23,5	21,6	25,2	22,7	25,7	23,3	27,2	24,1	28,3	24,7
1100	23,3	21,2	24,4	21,8	26,1	23,0	26,6	23,6	28,2	24,4	29,3	25,0
1200	24,3	21,5	25,4	22,1	27,1	23,3	27,7	23,8	29,2	24,6	30,3	25,2
1300	25,3	21,8	26,4	22,4	28,1	23,5	28,6	24,1	29,9	24,8	31,0	25,4
1400	26,0	22,0	27,1	22,6	28,8	23,7	29,3	24,3	30,4	25,0	31,5	25,5
1500	26,5	22,2	27,6	22,7	29,3	23,8	29,8	24,4	30,6	25,0	31,7	25,6
1600	26,7	22,2	27,8	22,8	29,4	23,9	30,0	24,4	30,4	25,0	31,5	25,5
1700	26,5	22,2	27,6	22,7	29,3	23,8	29,8	24,4	30,0	24,8	31,1	25,4
1800	26,1	22,1	27,2	22,6	28,8	23,7	29,4	24,3	29,3	24,7	30,4	25,2
1900	25,4	21,9	26,5	22,4	28,2	23,5	28,7	24,1	28,5	24,5	29,6	25,0
2000	24,6	21,6	25,7	22,2	27,4	23,3	28,0	23,9	27,7	24,3	28,8	24,8
2100	23,8	21,4	25,0	22,0	26,6	23,1	27,2	23,7	27,1	24,1	28,2	24,7
2200	23,2	21,2	24,3	21,8	26,0	22,9	26,5	23,5	26,5	23,9	27,6	24,5
2300	22,6	21,0	23,7	21,6	25,4	22,8	25,9	23,4	26,0	23,8	27,1	24,4

**Location: Salvador, Brazil**



## Design Temperature Profiles for December



**Location: Salvador, Brazil**

Hour	N	NNE	NE	ENE	E	ESE	SE	SSE	
0000	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	
0100	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	
0200	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	
0300	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	
0400	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	
0500	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	
0600	45,7	171,6	352,5	489,6	559,1	548,7	460,2	309,3	
0700	94,2	312,0	571,7	762,1	850,3	820,7	678,5	448,7	
0800	129,1	368,1	611,3	783,3	854,9	813,6	666,6	439,0	
0900	155,0	368,3	553,3	678,5	723,2	679,8	555,6	371,3	
1000	195,8	323,5	428,7	494,9	511,2	475,2	392,6	276,7	
1100	215,4	242,4	259,6	264,3	255,8	235,3	206,1	177,4	
1200	210,1	173,8	170,7	168,5	167,5	167,5	168,7	170,9	
1300	180,6	158,3	153,3	153,3	153,3	153,3	153,3	157,1	
1400	145,2	134,6	134,6	134,6	134,6	134,6	134,6	134,6	
1500	115,7	107,8	107,8	107,8	107,8	107,8	107,8	107,8	
1600	76,2	71,5	71,5	71,5	71,5	71,5	71,5	71,5	
1700	17,4	16,5	16,5	16,5	16,5	16,5	16,5	16,5	
1800	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	
1900	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	
2000	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	
2100	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	
2200	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	
2300	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	
Hour	S	SSW	SW	WSW	W	WNW	NW	NNW	HOR
0000	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
0100	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
0200	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
0300	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
0400	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
0500	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
0600	122,0	43,1	43,1	43,1	43,1	43,1	43,1	43,1	165,2
0700	170,1	88,1	88,1	88,1	88,1	88,1	88,1	88,1	452,1
0800	168,7	120,0	120,0	120,0	120,0	120,0	120,0	120,0	707,2
0900	156,7	143,4	143,4	143,4	143,4	143,4	143,4	143,4	910,4
1000	169,4	163,8	158,7	158,7	158,7	158,7	158,7	165,7	1047,9
1100	175,8	174,5	173,7	173,5	173,9	174,8	176,2	182,6	1110,4
1200	174,1	216,6	285,8	338,5	366,3	365,0	334,7	280,3	1093,7
1300	164,4	318,4	465,4	567,3	607,5	579,4	487,7	347,2	998,9
1400	162,0	404,3	610,6	747,0	790,8	734,3	587,2	374,2	832,4
1500	171,7	453,0	687,8	836,8	874,4	793,8	609,2	352,2	605,4
1600	160,7	419,0	630,0	757,9	780,1	692,6	510,9	266,6	333,8

Hour	N	NNE	NE	ENE	E	ESE	SE	SSE	
1700	55,9	138,0	203,2	240,5	243,1	210,6	148,8	68,3	49,6
1800	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
1900	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
2000	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
2100	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
2200	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
2300	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0

## Design Beam Solar Heat Gains for February

(Values for each exposure are expressed in W/m²)

Hour	N	NNE	NE	ENE	E	ESE	SE	SSE	
0000	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	
0100	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	
0200	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	
0300	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	
0400	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	
0500	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	
0600	0,0	63,7	237,0	357,6	415,3	407,4	331,9	196,9	
0700	0,0	117,6	368,2	536,4	613,2	587,6	463,3	250,9	
0800	0,0	126,9	363,1	519,2	581,8	545,7	414,8	194,1	
0900	0,0	101,2	276,4	398,2	439,8	399,4	278,7	103,7	
1000	1,5	54,1	137,6	199,8	215,8	180,9	106,2	27,1	
1100	3,5	10,3	16,3	18,2	14,8	8,1	2,0	0,0	
1200	2,9	0,0	0,0	0,0	0,0	0,0	0,0	0,0	
1300	0,6	0,0	0,0	0,0	0,0	0,0	0,0	0,0	
1400	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	
1500	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	
1600	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	
1700	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	
1800	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	
1900	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	
2000	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	
2100	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	
2200	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	
2300	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	
Hour	S	SSW	SW	WSW	W	WNW	NW	NNW	HOR
0000	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
0100	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
0200	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
0300	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
0400	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
0500	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
0600	25,1	0,0	0,0	0,0	0,0	0,0	0,0	0,0	55,0
0700	16,1	0,0	0,0	0,0	0,0	0,0	0,0	0,0	281,3
0800	3,8	0,0	0,0	0,0	0,0	0,0	0,0	0,0	512,5

1100	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	875,0
1200	0,0	4,1	28,9	60,4	80,5	79,5	57,9	26,2	862,2
1300	0,0	54,9	177,8	277,9	317,7	289,9	199,3	75,3	780,8
1400	0,6	142,6	343,9	471,3	510,3	459,8	321,1	115,6	626,7
1500	8,1	225,1	448,5	579,3	612,2	541,7	376,8	127,7	420,4
1600	22,1	249,6	441,5	552,7	571,1	496,2	336,1	101,1	177,4
Hour	N	NNE	NE	ENE	E	ESE	SE	SSE	
1700	14,5	91,1	149,1	180,3	182,1	155,5	101,1	24,3	7,2
1800	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
1900	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
2000	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
2100	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
2200	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
2300	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Hour	N	NNE	NE	ENE	E	ESE	SE	SSE	
1700	17,2	22,1	27,1	30,4	30,6	27,7	22,9	17,8	20,8
1800	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
1900	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
2000	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
2100	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
2200	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
2300	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0

Location: Salvador, Brazil

### Design Total Solar Heat Gains for February

(Values for each exposure are expressed in W/m<sup>2</sup>)

Hour	N	NNE	NE	ENE	E	ESE	SE	SSE	
0000	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	
0100	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	
0200	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	
0300	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	
0400	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	
0500	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	
0600	37,2	109,4	294,2	425,7	489,5	480,6	397,5	251,1	
0700	76,7	207,4	474,5	657,4	741,7	713,6	577,6	348,9	
0800	105,0	244,8	496,0	664,7	732,9	693,5	551,5	316,0	
0900	126,1	237,4	423,2	553,2	598,0	554,5	425,7	240,1	
1000	141,4	199,9	288,9	354,8	371,8	334,8	255,5	170,7	
1100	149,6	157,6	164,4	166,5	162,7	155,1	147,7	144,3	
1200	147,3	141,4	138,8	137,1	136,2	136,3	137,2	139,0	
1300	135,5	128,7	124,7	124,7	124,7	124,7	124,7	127,8	
1400	118,1	109,5	109,5	109,5	109,5	109,5	109,5	109,5	
1500	94,1	87,7	87,7	87,7	87,7	87,7	87,7	87,7	
1600	62,0	58,2	58,2	58,2	58,2	58,2	58,2	58,2	

1600	62,0	58,2	58,2	58,2	58,2	58,2	58,2	58,2	
1700	14,2	13,4	13,4	13,4	13,4	13,4	13,4	13,4	
1800	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	
1900	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	
2000	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	
2100	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	
2200	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	
2300	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	
Hour	S	SSW	SW	WSW	W	WNW	NW	NNW	HOR
0000	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
0100	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
0200	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
0300	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
0400	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
0500	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
0600	68,3	35,1	35,1	35,1	35,1	35,1	35,1	35,1	103,1
0700	98,7	71,7	71,7	71,7	71,7	71,7	71,7	71,7	358,9
0800	112,0	97,6	97,6	97,6	97,6	97,6	97,6	97,6	601,6
0900	126,2	116,7	116,7	116,7	116,7	116,7	116,7	116,7	793,8
1000	137,8	133,2	129,1	129,1	129,1	129,1	129,1	134,8	921,9
1100	143,0	142,0	141,3	141,2	141,5	142,2	143,4	144,8	973,5
1200	141,6	148,8	176,8	210,8	232,3	231,3	208,1	173,8	960,5
1300	133,7	196,2	327,0	433,1	475,5	445,9	349,7	218,0	877,4
1400	120,0	273,8	487,7	624,7	666,9	612,2	463,4	245,2	719,5
1500	106,6	338,4	577,7	720,2	756,2	679,1	500,4	235,2	505,7
1600	90,7	332,9	540,1	662,2	682,6	600,0	425,7	175,2	246,3
Hour	N	NNE	NE	ENE	E	ESE	SE	SSE	
1700	31,7	113,3	176,2	210,7	212,8	183,3	124,0	42,1	28,0
1800	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
1900	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
2000	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
2100	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
2200	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
2300	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0

## SUB1-COORD. COLEG 01

### 1. General Details:

Floor Area ..... 9,5 m<sup>2</sup>  
 Avg. Ceiling Height ..... 2,8 m  
 Building Weight ..... 341,8 kg/m<sup>2</sup>

### 1.1. OA Ventilation Requirements:

Space Usage ..... User-Defined  
 OA Requirement 1 ..... 3,8 L/s/person  
 OA Requirement 2 ..... 0,50 L/(s-m<sup>2</sup>)  
 Space Usage Defaults ASHRAE Std 62.1-2007

### 2. Internals:

#### 2.1. Overhead Lighting:

Fixture Type ..... Recessed (Unvented)  
 Wattage ..... 16,00 W/m<sup>2</sup>  
 Ballast Multiplier ..... 1,00  
 Schedule ..... CASA 49

#### 2.4. People:

Occupancy ..... 3,0 People  
 Activity Level ..... Office Work  
 Sensible ..... 71,8  
 ..... W/person  
 Latent ..... 60,1  
 ..... W/person  
 Schedule ..... CASA 49

#### 2.2. Task Lighting:

Wattage ..... 0,00 W/m<sup>2</sup>  
 Schedule ..... CASA 49

#### 2.5. Miscellaneous Loads:

Sensible ..... 0 W  
 Schedule ..... CASA 49  
 Latent ..... 0 W  
 Schedule ..... CASA 49

#### 2.3. Electrical Equipment:

Wattage ..... 450,0 Watts  
 Schedule ..... CASA 49

### 3. Walls, Windows, Doors:

Exp.	Wall Gross Area (m <sup>2</sup> )	Window 1 Qty.	Window 2 Qty.	Door 1 Qty.
E	6,9	1	0	0
S	9,0	1	0	0

#### 3.1. Construction Types for Exposure E

Wall Type Parede bloco cerâmico rebocada - 13 cm  
 1st Window Type JANELA PADRÃO 1,00X1,00M2

#### 3.2. Construction Types for Exposure S

Wall Type Parede bloco cerâmico rebocada - 13 cm  
 1st Window Type JANELA PADRÃO 1,00X1,00M2

### 4. Roofs, Skylights:

(No Roof or Skylight data).

#### 5. Infiltration:

Design Cooling ..... 0,00 ACH  
 Design Heating ..... 0,00 L/s  
 Energy Analysis ..... 0,00 L/s  
 Infiltration occurs at all hours.

#### 6. Floors:

Type .. Floor Above Conditioned Space  
 (No additional input required for this floor type).

#### 7. Partitions:

##### 7.1. 1st Partition Details:

Partition Type ..... Wall Partition  
 Area ..... 18,8 m<sup>2</sup>  
 U-Value ..... 1,600 W/(m<sup>2</sup>-  
 °K)  
 Uncondit. Space Max Temp ..... 31,0 °C  
 Ambient at Space Max Temp ..... 31,0 °C  
 Uncondit. Space Min Temp ..... 22,0 °C  
 Ambient at Space Min Temp ..... 22,0 °C

##### 7.2. 2nd Partition Details: (No partition data).

#### SUB1-COORD. COLEG 02

##### 1. General Details:

Floor Area ..... 9,2 m<sup>2</sup>  
 Avg. Ceiling Height ..... 2,8 m  
 Building Weight ..... 341,8 kg/m<sup>2</sup>

##### 1.1. OA Ventilation Requirements:

Space Usage ..... User-Defined  
 OA Requirement 1 ..... 3,8 L/s/person  
 OA Requirement 2 ..... 0,50 L/(s-m<sup>2</sup>)  
 Space Usage Defaults ASHRAE Std 62.1-2007

##### 2. Internals:

##### 2.1. Overhead Lighting:

Fixture Type ..... Recessed (Unvented)  
 Wattage ..... 16,00 W/m<sup>2</sup>  
 Ballast Multiplier ..... 1,00  
 Schedule ..... CASA 49

##### 2.2. Task Lighting:

Wattage ..... 0,00 W/m<sup>2</sup>  
 Schedule ..... CASA 49

##### 2.4. People:

Occupancy ..... 3,0 People  
 Activity Level ..... Office Work  
 Sensible ..... 71,8  
 ..... W/person  
 Latent ..... 60,1  
 ..... W/person  
 Schedule ..... CASA 49

##### 2.5. Miscellaneous Loads:

Sensible ..... 0 W  
 Schedule ..... CASA 49  
 Latent ..... 0 W  
 Schedule ..... CASA 49

### 2.3. Electrical Equipment:

Wattage ..... 450,0 Watts  
Schedule ..... CASA 49

### 3. Walls, Windows, Doors:

Exp.	Wall Gross Area (m <sup>2</sup> )	Window 1 Qty.	Window 2 Qty.	Door 1 Qty.
W	8,4	0	0	0

#### 3.1. Construction Types for Exposure W

Wall Type Parede bloco cerâmico rebocada - 13 cm

### 4. Roofs, Skylights:

(No Roof or Skylight data).

### 5. Infiltration:

Design Cooling ..... 0,00 ACH  
Design Heating ..... 0,00 L/s  
Energy Analysis ..... 0,00 L/s

Infiltration occurs at all hours.

### 6. Floors:

Type .. Floor Above Conditioned Space

(No additional input required for this floor type).

### 7. Partitions:

#### 7.1. 1st Partition Details:

Partition Type ..... Wall Partition

Area ..... 25,8 m<sup>2</sup>

U-Value ..... 1,600 W/(m<sup>2</sup>-°K)

Uncondit. Space Max Temp ..... 31,0 °C

Ambient at Space Max Temp ..... 31,0 °C

Uncondit. Space Min Temp ..... 22,0 °C

Ambient at Space Min Temp ..... 22,0 °C

#### 7.2. 2nd Partition Details:

(No partition data).



## SUB1-RECEPÇÃO E ESPERA

### 1. General Details:

Floor Area ..... 19,0 m<sup>2</sup>  
 Avg. Ceiling Height ..... 2,8 m  
 Building Weight ..... 341,8 kg/m<sup>2</sup>

### 1.1. OA Ventilation Requirements:

Space Usage ..... User-Defined  
 OA Requirement 1 ..... 3,8 L/s/person  
 OA Requirement 2 ..... 0,50 L/(s·m<sup>2</sup>)  
 Space Usage Defaults ASHRAE Std 62.1-2007

### 2. Internals:

#### 2.1. Overhead Lighting:

Fixture Type ..... Recessed (Unvented)  
 Wattage ..... 16,00 W/m<sup>2</sup>  
 Ballast Multiplier ..... 1,00  
 Schedule ..... CASA 49

#### 2.4. People:

Occupancy ..... 2,0 People  
 Activity Level ..... Office Work  
 Sensible ..... 71,8  
 ..... W/person  
 Latent ..... 60,1  
 ..... W/person  
 Schedule ..... CASA 49

#### 2.2. Task Lighting:

Wattage ..... 0,00 W/m<sup>2</sup>  
 Schedule ..... CASA 49

#### 2.5. Miscellaneous Loads:

Sensible ..... 0 W  
 Schedule ..... CASA 49  
 Latent ..... 0 W  
 Schedule ..... CASA 49

#### 2.3. Electrical Equipment:

Wattage ..... 450,0 Watts  
 Schedule ..... CASA 49

### 3. Walls, Windows, Doors:

(No Wall, Window, Door data).

### 4. Roofs, Skylights:

(No Roof or Skylight data).

### 5. Infiltration:

Design Cooling ..... 0,00 ACH  
 Design Heating ..... 0,00 L/s  
 Energy Analysis ..... 0,00 L/s  
 Infiltration occurs at all hours.

## 6. Floors:

Type .. Floor Above Conditioned Space  
(No additional input required for this floor type).

## 7. Partitions:

### 7.1. 1st Partition Details:

Partition Type ..... Wall Partition  
Area ..... 44,8 m<sup>2</sup>  
U-Value ..... 1,600 W/(m<sup>2</sup>-  
°K)  
Uncondit. Space Max Temp ..... 31,0 °C  
Ambient at Space Max Temp ..... 31,0 °C  
Uncondit. Space Min Temp ..... 22,0 °C  
Ambient at Space Min Temp ..... 22,0 °C

### 7.2. 2nd Partition Details:

Partition Type ..... Ceiling Partition  
Area ..... 1,0 m<sup>2</sup>  
U-Value ..... 0,900 W/(m<sup>2</sup>-  
°K)  
Uncondit. Space Max Temp ..... 31,0 °C  
Ambient at Space Max Temp ..... 31,0 °C  
Uncondit. Space Min Temp ..... 22,0 °C  
Ambient at Space Min Temp ..... 22,0 °C

## SUB1-SALA OBS. PRONTUARIO

### 1. General Details:

Floor Area ..... 12,2 m<sup>2</sup>  
Avg. Ceiling Height ..... 2,8 m  
Building Weight ..... 341,8 kg/m<sup>2</sup>

### 1.1. OA Ventilation Requirements:

Space Usage ..... User-Defined  
OA Requirement 1 ..... 3,8 L/s/person  
OA Requirement 2 ..... 0,50 L/(s-m<sup>2</sup>)  
Space Usage Defaults ASHRAE Std 62.1-2007

### 2. Internals:

#### 2.1. Overhead Lighting:

Fixture Type ..... Recessed (Unvented)  
Wattage ..... 16,00 W/m<sup>2</sup>  
Ballast Multiplier ..... 1,00  
Schedule ..... CASA 49

#### 2.4. People:

Occupancy ..... 2,0 People  
Activity Level ..... Office Work  
Sensible ..... 71,8  
..... W/person  
Latent ..... 60,1  
..... W/person  
Schedule ..... CASA 49

#### 2.2. Task Lighting:

Wattage ..... 0,00 W/m<sup>2</sup>  
Schedule ..... CASA 49

#### 2.5. Miscellaneous Loads:

Sensible ..... 0 W  
Schedule ..... CASA 49  
Latent ..... 0 W  
Schedule ..... CASA 49

#### 2.3. Electrical Equipment:

Wattage ..... 450,0 Watts  
Schedule ..... CASA 49

### 2.3. Electrical Equipment:

Wattage ..... 450,0 Watts  
Schedule ..... CASA 49

### 3. Walls, Windows, Doors:

Exp.	Wall Gross Area (m <sup>2</sup> )	Window 1 Qty.	Window 2 Qty.	Door 1 Qty.
E	4,8	1	0	0

#### 3.1. Construction Types for Exposure E

Wall Type Parede bloco cerâmico rebocada - 13 cm  
1st Window Type JANELA PADRÃO 1,00X1,00M2

### 4. Roofs, Skylights:

(No Roof or Skylight data).

### 5. Infiltration:

Design Cooling ..... 0,00 ACH  
Design Heating ..... 0,00 L/s

Energy Analysis ..... 0,00 L/s  
Infiltration occurs at all hours.

### 6. Floors:

Type .. Floor Above Conditioned Space  
(No additional input required for this floor type).

### 7. Partitions:

#### 7.1. 1st Partition Details:

Partition Type ..... Wall Partition  
Area ..... 40,9 m<sup>2</sup>  
U-Value ..... 1,600 W/(m<sup>2</sup>-°K)  
Uncondit. Space Max Temp ..... 31,0 °C  
Ambient at Space Max Temp ..... 31,0 °C  
Uncondit. Space Min Temp ..... 22,0 °C  
Ambient at Space Min Temp ..... 22,0 °C

#### 7.2. 2nd Partition Details:

Partition Type ..... Ceiling Partition  
Area ..... 1,0 m<sup>2</sup>  
U-Value ..... 0,900 W/(m<sup>2</sup>-°K)  
Uncondit. Space Max Temp ..... 31,0 °C  
Ambient at Space Max Temp ..... 31,0 °C  
Uncondit. Space Min Temp ..... 22,0 °C  
Ambient at Space Min Temp ..... 22,0 °C

## SUB1-RECEPÇÃO E ESPERA

### 1. General Details:

Floor Area ..... 19,0 m<sup>2</sup>  
 Avg. Ceiling Height ..... 2,8 m  
 Building Weight ..... 341,8 kg/m<sup>2</sup>

#### 1.1. OA Ventilation Requirements:

Space Usage ..... User-Defined  
 OA Requirement 1 ..... 3,8 L/s/person  
 OA Requirement 2 ..... 0,50 L/(s-m<sup>2</sup>)  
 Space Usage Defaults ASHRAE Std 62.1-2007

### 2. Internals:

#### 2.1. Overhead Lighting:

Fixture Type ..... Recessed (Unvented)  
 Wattage ..... 16,00 W/m<sup>2</sup>  
 Ballast Multiplier ..... 1,00  
 Schedule ..... CASA 49

#### 2.4. People:

Occupancy ..... 2,0 People  
 Activity Level ..... Office Work  
 Sensible ..... 71,8  
 ..... W/person  
 Latent ..... 60,1  
 ..... W/person  
 Schedule ..... CASA 49

#### 2.2. Task Lighting:

Wattage ..... 0,00 W/m<sup>2</sup>  
 Schedule ..... CASA 49

#### 2.5. Miscellaneous Loads:

Sensible ..... 0 W  
 Schedule ..... CASA 49  
 Latent ..... 0 W  
 Schedule ..... CASA 49

#### 2.3. Electrical Equipment:

Wattage ..... 450,0 Watts  
 Schedule ..... CASA 49

### 3. Walls, Windows, Doors:

(No Wall, Window, Door data).

### 4. Roofs, Skylights:

(No Roof or Skylight data).

### 5. Infiltration:

Design Cooling ..... 0,00 ACH  
 Design Heating ..... 0,00 L/s  
 Energy Analysis ..... 0,00 L/s  
 Infiltration occurs at all hours.

## 6. Floors:

Type .. Floor Above Conditioned Space

(No additional input required for this floor type).

## 7. Partitions:

### 7.1. 1st Partition Details:

Partition Type ..... Wall Partition

Area ..... 44,8 m<sup>2</sup>

U-Value ..... 1,600 W/(m<sup>2</sup>-°K)

Uncondit. Space Max Temp ..... 31,0 °C

Ambient at Space Max Temp ..... 31,0 °C

Uncondit. Space Min Temp ..... 22,0 °C

Ambient at Space Min Temp ..... 22,0 °C

### 7.2. 2nd Partition Details:

Partition Type ..... Ceiling Partition

Area ..... 1,0 m<sup>2</sup>

U-Value ..... 0,900 W/(m<sup>2</sup>-°K)

Uncondit. Space Max Temp ..... 31,0 °C

Ambient at Space Max Temp ..... 31,0 °C

Uncondit. Space Min Temp ..... 22,0 °C

Ambient at Space Min Temp ..... 22,0 °C

## SUB1-SEC.ACAD. E COLEG.

### 1. General Details:

Floor Area ..... 31,2 m<sup>2</sup>

Avg. Ceiling Height ..... 2,5 m

Building Weight ..... 341,8 kg/m<sup>2</sup>

### 1.1. OA Ventilation Requirements:

Space Usage ..... User-Defined

OA Requirement 1 ..... 3,8 L/s/person

OA Requirement 2 ..... 0,50 L/(s-m<sup>2</sup>)

Space Usage Defaults ASHRAE Std 62.1-2007

### 2. Internals:

#### 2.1. Overhead Lighting:

Fixture Type ..... Recessed (Unvented)

Wattage ..... 16,00 W/m<sup>2</sup>

Ballast Multiplier ..... 1,00

Schedule ..... CASA 49

#### 2.2. Task Lighting:

Wattage ..... 0,00 W/m<sup>2</sup>

Schedule ..... CASA 49

#### 2.3. Electrical Equipment:

Wattage ..... 450,0 Watts

Schedule ..... CASA 49

#### 2.4. People:

Occupancy ..... 3,0 People

Activity Level ..... Office Work

Sensible ..... 71,8

..... W/person

Latent ..... 60,1

..... W/person

Schedule ..... CASA 49

#### 2.5. Miscellaneous Loads:

Sensible ..... 0 W

Schedule ..... CASA 49

Latent ..... 0 W

Schedule ..... CASA 49

### 3. Walls, Windows, Doors:

Exp.	Wall Gross Area (m <sup>2</sup> )	Window 1 Qty.	Window 2 Qty.	Door 1 Qty.
E	11,5	1	0	0
W	13,1	0	0	0

#### 3.1. Construction Types for Exposure E

Wall Type Parede bloco cerâmico rebocada - 13 cm

1st Window Type JANELA PADRÃO 1,00X1,00M2

#### 3.2. Construction Types for Exposure W

Wall Type Parede bloco cerâmico rebocada - 13 cm

### 4. Roofs, Skylights:

(No Roof or Skylight data).

### 5. Infiltration:

Design Cooling ..... 0,00 ACH

Design Heating ..... 0,00 L/s

Energy Analysis ..... 0,00 L/s

Infiltration occurs at all hours.

### 6. Floors:

Type .. Floor Above Conditioned Space

(No additional input required for this floor type).

### 7. Partitions:

#### 7.1. 1st Partition Details:

Partition Type ..... Wall Partition

Area ..... 35,0 m<sup>2</sup>

U-Value ..... 1,600 W/(m<sup>2</sup>-

°K)

Uncondit. Space Max Temp ..... 31,0 °C

Ambient at Space Max Temp ..... 31,0 °C

Uncondit. Space Min Temp ..... 22,0 °C

Ambient at Space Min Temp ..... 22,0 °C

#### 7.2. 2nd Partition Details:

(No partition data).

## SUB1-TERAPIA 04

### 1. General Details:

Floor Area ..... 9,3 m<sup>2</sup>  
 Avg. Ceiling Height ..... 2,8 m  
 Building Weight ..... 341,8 kg/m<sup>2</sup>

### 1.1. OA Ventilation Requirements:

Space Usage ..... User-Defined  
 OA Requirement 1 ..... 3,8 L/s/person  
 OA Requirement 2 ..... 0,50 L/(s·m<sup>2</sup>)  
 Space Usage Defaults ASHRAE Std 62.1-2007

### 2. Internals:

#### 2.1. Overhead Lighting:

Fixture Type ..... Recessed (Unvented)  
 Wattage ..... 16,00 W/m<sup>2</sup>  
 Ballast Multiplier ..... 1,00  
 Schedule ..... CASA 49

#### 2.4. People:

Occupancy ..... 2,0 People  
 Activity Level ..... Office Work  
 Sensible ..... 71,8  
 ..... W/person  
 Latent ..... 60,1  
 ..... W/person  
 Schedule ..... CASA 49

#### 2.2. Task Lighting:

Wattage ..... 0,00 W/m<sup>2</sup>  
 Schedule ..... CASA 49

#### 2.5. Miscellaneous Loads:

Sensible ..... 0 W  
 Schedule ..... CASA 49  
 Latent ..... 0 W  
 Schedule ..... CASA 49

#### 2.3. Electrical Equipment:

Wattage ..... 400,0 Watts  
 Schedule ..... CASA 49

### 3. Walls, Windows, Doors:

Exp.	Wall Gross Area (m <sup>2</sup> )	Window 1 Qty.	Window 2 Qty.	Door 1 Qty.
N	10,1	3	0	0

#### 3.1. Construction Types for Exposure N

Wall Type Parede bloco cerâmico rebocada - 13 cm  
 1st Window Type JANELA PADRÃO 1,00X1,00M2

### 4. Roofs, Skylights:

(No Roof or Skylight data).

### 5. Infiltration:

Design Cooling ..... 0,00 ACH  
 Design Heating ..... 0,00 L/s

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Energy Analysis ..... 0,00 L/s  
Infiltration occurs at all hours.

## 6. Floors:

Type ... Floor Above Conditioned Space  
(No additional input required for this floor type).

## 7. Partitions:

### 7.1. 1st Partition Details:

Partition Type ..... Wall Partition  
Area ..... 24,6 m<sup>2</sup>  
U-Value ..... 1,600 W/(m<sup>2</sup>·°K)  
Uncondit. Space Max Temp ..... 31,0 °C  
Ambient at Space Max Temp ..... 31,0 °C  
Uncondit. Space Min Temp ..... 22,0 °C  
Ambient at Space Min Temp ..... 22,0 °C

### 7.2. 2nd Partition Details:

Partition Type ..... Ceiling Partition  
Area ..... 1,0 m<sup>2</sup>  
U-Value ..... 0,900 W/(m<sup>2</sup>·°K)  
Uncondit. Space Max Temp ..... 31,0 °C  
Ambient at Space Max Temp ..... 31,0 °C  
Uncondit. Space Min Temp ..... 22,0 °C  
Ambient at Space Min Temp ..... 22,0 °C

## SUB1-TERAPIA 05

### 1. General Details:

Floor Area ..... 7,5 m<sup>2</sup>  
Avg. Ceiling Height ..... 2,8 m  
Building Weight ..... 341,8 kg/m<sup>2</sup>

#### 1.1. OA Ventilation Requirements:

Space Usage ..... User-Defined  
OA Requirement 1 ..... 3,8 L/s/person  
OA Requirement 2 ..... 0,50 L/(s·m<sup>2</sup>)  
Space Usage Defaults ASHRAE Std 62.1-2007

### 2. Internals:

#### 2.1. Overhead Lighting:

Fixture Type ..... Recessed (Unvented)  
Wattage ..... 16,00 W/m<sup>2</sup>  
Ballast Multiplier ..... 1,00  
Schedule ..... CASA 49

#### 2.4. People:

Occupancy ..... 2,0 People  
Activity Level ..... Office Work  
Sensible ..... 71,8  
..... W/person  
Latent ..... 60,1  
..... W/person  
Schedule ..... CASA 49

#### 2.2. Task Lighting:

Wattage ..... 0,00 W/m<sup>2</sup>  
Schedule ..... CASA 49

#### 2.5. Miscellaneous Loads:

Sensible ..... 0 W  
Schedule ..... CASA 49  
Latent ..... 0 W  
Schedule ..... CASA 49

#### 2.3. Electrical Equipment:

Wattage ..... 450,0 Watts  
Schedule ..... CASA 49



### 3. Walls, Windows, Doors:

Exp.	Wall Gross Area (m <sup>2</sup> )	Window 1 Qty.	Window 2 Qty.	Door 1 Qty.
N	5,6	0	0	0

#### 3.1. Construction Types for Exposure N

Wall Type Parede bloco cerâmico rebocada - 13 cm

### 4. Roofs, Skylights:

(No Roof or Skylight data).

### 5. Infiltration:

Design Cooling ..... 0,00 ACH  
Design Heating ..... 0,00 L/s  
Energy Analysis ..... 0,00 L/s

Infiltration occurs at all hours.

### 6. Floors:

Type .. Floor Above Conditioned Space

(No additional input required for this floor type).

### 7. Partitions:

#### 7.1. 1st Partition Details:

Partition Type ..... Wall Partition  
Area ..... 28,8 m<sup>2</sup>  
U-Value ..... 1,600 W/(m<sup>2</sup>-°K)  
Uncondit. Space Max Temp ..... 31,0 °C  
Ambient at Space Max Temp ..... 31,0 °C  
Uncondit. Space Min Temp ..... 22,0 °C  
Ambient at Space Min Temp ..... 22,0 °C

#### 7.2. 2nd Partition Details:

Partition Type ..... Ceiling Partition  
Area ..... 1,0 m<sup>2</sup>  
U-Value ..... 0,900 W/(m<sup>2</sup>-°K)  
Uncondit. Space Max Temp ..... 31,0 °C  
Ambient at Space Max Temp ..... 31,0 °C  
Uncondit. Space Min Temp ..... 22,0 °C  
Ambient at Space Min Temp ..... 22,0 °C

### SUB1-TERAPIA 06

#### 1. General Details:

Floor Area ..... 10,0 m<sup>2</sup>  
Avg. Ceiling Height ..... 2,8 m  
Building Weight ..... 341,8 kg/m<sup>2</sup>

#### 1.1. OA Ventilation Requirements:

Space Usage ..... User-Defined  
OA Requirement 1 ..... 3,8 L/s/person  
OA Requirement 2 ..... 0,50 L/(s-m<sup>2</sup>)  
Space Usage Defaults ASHRAE Std 62.1-2007

#### 2. Internals:

##### 2.1. Overhead Lighting:

Fixture Type ..... Recessed (Unvented)  
Wattage ..... 16,00 W/m<sup>2</sup>  
Ballast Multiplier ..... 1,00  
Schedule ..... CASA 49

##### 2.4. People:

Occupancy ..... 2,0 People  
Activity Level ..... Office Work  
Sensible ..... 71,8 W/person  
Latent ..... 60,1 W/person  
Schedule ..... CASA 49

## 2.2. Task Lighting:

Wattage ..... 0,00 W/m<sup>2</sup>  
Schedule ..... CASA 49

## 2.5. Miscellaneous Loads:

Sensible ..... 0 W  
Schedule ..... CASA 49  
Latent ..... 0 W  
Schedule ..... CASA 49

## 2.3. Electrical Equipment:

Wattage ..... 250,0 Watts  
Schedule ..... CASA 49

## 3. Walls, Windows, Doors:

Exp.	Wall Gross Area (m <sup>2</sup> )	Window 1 Qty.	Window 2 Qty.	Door 1 Qty.
N	5,6	0	0	0
E	13,2	3	0	0

### 3.1. Construction Types for Exposure N

Wall Type Parede bloco cerâmico rebocada - 13 cm

### 3.2. Construction Types for Exposure E

Wall Type Parede bloco cerâmico rebocada - 13 cm  
1st Window Type JANELA PADRÃO 1,00X1,00M2

## 4. Roofs, Skylights:

(No Roof or Skylight data).

## 5. Infiltration:

Design Cooling ..... 0,00 ACH  
Design Heating ..... 0,00 L/s  
Energy Analysis ..... 0,00 L/s  
Infiltration occurs at all hours.

## 6. Floors:

Type .. Floor Above Conditioned Space  
(No additional input required for this floor type).

## 7. Partitions:

### 7.1. 1st Partition Details:

Partition Type ..... Wall Partition  
Area ..... 19,3 m<sup>2</sup>  
U-Value ..... 1,600 W/(m<sup>2</sup>-°K)  
Uncondit. Space Max Temp ..... 31,0 °C  
Ambient at Space Max Temp ..... 31,0 °C  
Uncondit. Space Min Temp ..... 22,0 °C  
Ambient at Space Min Temp ..... 22,0 °C

### 7.2. 2nd Partition Details:

Partition Type ..... Ceiling Partition  
Area ..... 1,0 m<sup>2</sup>  
U-Value ..... 0,900 W/(m<sup>2</sup>-°K)  
Uncondit. Space Max Temp ..... 31,0 °C  
Ambient at Space Max Temp ..... 31,0 °C  
Uncondit. Space Min Temp ..... 22,0 °C  
Ambient at Space Min Temp ..... 22,0 °C

## SUB1-TERAPIA 07

### 1. General Details:

Floor Area ..... 10,3 m<sup>2</sup>  
 Avg. Ceiling Height ..... 2,8 m  
 Building Weight ..... 341,8 kg/m<sup>2</sup>

### 1.1. OA Ventilation Requirements:

Space Usage ..... User-Defined  
 OA Requirement 1 ..... 3,8 L/s/person  
 OA Requirement 2 ..... 0,50 L/(s-m<sup>2</sup>)  
 Space Usage Defaults ASHRAE Std 62.1-2007

### 2. Internals:

#### 2.1. Overhead Lighting:

Fixture Type ..... Recessed (Unvented)  
 Wattage ..... 16,00 W/m<sup>2</sup>  
 Ballast Multiplier ..... 1,00  
 Schedule ..... CASA 49

#### 2.4. People:

Occupancy ..... 2,0 People  
 Activity Level ..... Office Work  
 Sensible ..... 71,8 W/person  
 Latent ..... 60,1 W/person  
 Schedule ..... CASA 49

#### 2.2. Task Lighting:

Wattage ..... 0,00 W/m<sup>2</sup>  
 Schedule ..... CASA 49

#### 2.5. Miscellaneous Loads:

Sensible ..... 0 W  
 Schedule ..... CASA 49  
 Latent ..... 0 W  
 Schedule ..... CASA 49

### 2.3. Electrical Equipment:

Wattage ..... 450,0 Watts  
 Schedule ..... CASA 49

### 3. Walls, Windows, Doors:

Exp.	Wall Gross Area (m <sup>2</sup> )	Window 1 Qty.	Window 2 Qty.	Door 1 Qty.
S	11,5	2	0	0

#### 3.1. Construction Types for Exposure S

Wall Type Parede bloco cerâmico rebocada - 13 cm  
 1st Window Type JANELA PADRÃO 1,00X1,00M2(1)

### 4. Roofs, Skylights:

(No Roof or Skylight data).

### 5. Infiltration:

Design Cooling ..... 0,00 ACH  
 Design Heating ..... 0,00 L/s

Energy Analysis ..... 0,00 L/s  
Infiltration occurs at all hours.

#### 6. Floors:

Type .. Floor Above Conditioned Space  
(No additional input required for this floor type).

#### 7. Partitions:

##### 7.1. 1st Partition Details:

Partition Type ..... Wall Partition  
Area ..... 25,8 m<sup>2</sup>  
U-Value ..... 1,600 W/(m<sup>2</sup>-°K)  
Uncondit. Space Max Temp ..... 31,0 °C  
Ambient at Space Max Temp ..... 31,0 °C  
Uncondit. Space Min Temp ..... 22,0 °C  
Ambient at Space Min Temp ..... 22,0 °C

##### 7.2. 2nd Partition Details:

Partition Type ..... Ceiling Partition  
Area ..... 1,0 m<sup>2</sup>  
U-Value ..... 0,900 W/(m<sup>2</sup>-°K)  
Uncondit. Space Max Temp ..... 31,0 °C  
Ambient at Space Max Temp ..... 31,0 °C  
Uncondit. Space Min Temp ..... 22,0 °C  
Ambient at Space Min Temp ..... 22,0 °C

#### SUB2-COORD. DEPARTAM. 02

##### 1. General Details:

Floor Area ..... 8,8 m<sup>2</sup>  
Avg. Ceiling Height ..... 2,5 m  
Building Weight ..... 341,8 kg/m<sup>2</sup>

##### 1.1. OA Ventilation Requirements:

Space Usage ..... User-Defined  
OA Requirement 1 ..... 3,8 L/s/person  
OA Requirement 2 ..... 0,50 L/(s-m<sup>2</sup>)  
Space Usage Defaults ASHRAE Std 62.1-2007

##### 2. Internals:

##### 2.1. Overhead Lighting:

Fixture Type ..... Recessed (Unvented)  
Wattage ..... 16,00 W/m<sup>2</sup>  
Ballast Multiplier ..... 1,00  
Schedule ..... CASA 49

##### 2.2. Task Lighting:

Wattage ..... 0,00 W/m<sup>2</sup>  
Schedule ..... CASA 49

##### 2.3. Electrical Equipment:

Wattage ..... 450,0 Watts  
Schedule ..... CASA 49

##### 2.4. People:

Occupancy ..... 2,0 People  
Activity Level ..... Office Work  
Sensible ..... 71,8  
..... W/person  
Latent ..... 60,1  
..... W/person  
Schedule ..... CASA 49

##### 2.5. Miscellaneous Loads:

Sensible ..... 0 W  
Schedule ..... CASA 49  
Latent ..... 0 W  
Schedule ..... CASA 49

### 3. Walls, Windows, Doors:

Exp.	Wall Gross Area (m <sup>2</sup> )	Window 1 Qty.	Window 2 Qty.	Door 1 Qty.
S	7,0	1	0	0
W	8,0	0	0	0

#### 3.1. Construction Types for Exposure S

Wall Type Parede bloco cerâmico rebocada - 13 cm

1st Window Type JANELA PADRÃO 1,00X1,00M2(1)

#### 3.2. Construction Types for Exposure W

Wall Type Parede bloco cerâmico rebocada - 13 cm

### 4. Roofs, Skylights:

(No Roof or Skylight data).

### 5. Infiltration:

Design Cooling ..... 0,00 ACH

Design Heating ..... 0,00 L/s

Energy Analysis ..... 0,00 L/s

Infiltration occurs at all hours.

### 6. Floors:

Type .. Floor Above Conditioned Space

(No additional input required for this floor type).

### 7. Partitions:

#### 7.1. 1st Partition Details:

Partition Type ..... Wall Partition

Area ..... 14,8 m<sup>2</sup>

U-Value ..... 1,600 W/(m<sup>2</sup>-°K)

Uncondit. Space Max Temp ..... 31,0 °C

Ambient at Space Max Temp ..... 31,0 °C

Uncondit. Space Min Temp ..... 22,0 °C

Ambient at Space Min Temp ..... 22,0 °C

#### 7.2. 2nd Partition Details:

(No partition data).

## SUB2-COORD. DEPARTAM.01

### 1. General Details:

Floor Area ..... 8,6 m<sup>2</sup>  
 Avg. Ceiling Height ..... 2,5 m  
 Building Weight ..... 341,8 kg/m<sup>2</sup>

### 1.1. OA Ventilation Requirements:

Space Usage ..... User-Defined  
 OA Requirement 1 ..... 3,8 L/s/person  
 OA Requirement 2 ..... 0,50 L/(s-m<sup>2</sup>)  
 Space Usage Defaults ASHRAE Std 62.1-2007

### 2. Internals:

#### 2.1. Overhead Lighting:

Fixture Type ..... Recessed (Unvented)  
 Wattage ..... 16,00 W/m<sup>2</sup>  
 Ballast Multiplier ..... 1,00  
 Schedule ..... CASA 49

#### 2.4. People:

Occupancy ..... 2,0 People  
 Activity Level ..... Office Work  
 Sensible ..... 71,8  
 ..... W/person  
 Latent ..... 60,1  
 ..... W/person  
 Schedule ..... CASA 49

#### 2.2. Task Lighting:

Wattage ..... 0,00 W/m<sup>2</sup>  
 Schedule ..... CASA 49

#### 2.5. Miscellaneous Loads:

Sensible ..... 0 W  
 Schedule ..... CASA 49  
 Latent ..... 0 W  
 Schedule ..... CASA 49

#### 2.3. Electrical Equipment:

Wattage ..... 450,0 Watts  
 Schedule ..... CASA 49

### 3. Walls, Windows, Doors:

Exp.	Wall Gross Area (m <sup>2</sup> )	Window 1 Qty.	Window 2 Qty.	Door 1 Qty.
S	7,0	1	0	0
E	8,0	0	0	0

#### 3.1. Construction Types for Exposure S

Wall Type Parede bloco cerâmico rebocada - 13 cm  
 1st Window Type JANELA PADRÃO 1,00X1,00M2(1)

#### 3.2. Construction Types for Exposure E

Wall Type Parede bloco cerâmico rebocada - 13 cm

#### 4. Roofs, Skylights:

(No Roof or Skylight data).

**5. Infiltration:**

Design Cooling ..... 0,00 ACH

Design Heating ..... 0,00 L/s

Energy Analysis ..... 0,00 L/s

Infiltration occurs at all hours.

**6. Floors:**

Type .. Floor Above Conditioned Space

(No additional input required for this floor type).

**7. Partitions:****7.1. 1st Partition Details:**

Partition Type ..... Wall Partition

Area ..... 14,8 m<sup>2</sup>U-Value ..... 1,600 W/(m<sup>2</sup>-

°K)

Uncondit. Space Max Temp ..... 31,0 °C

Ambient at Space Max Temp ..... 31,0 °C

Uncondit. Space Min Temp ..... 22,0 °C

Ambient at Space Min Temp ..... 22,0 °C

**7.2. 2nd Partition Details:**

(No partition data).

## SUB2-SALA SUPERVISÃO

### 1. General Details:

Floor Area ..... 16,2 m<sup>2</sup>  
 Avg. Ceiling Height ..... 2,7 m  
 Building Weight ..... 341,8 kg/m<sup>2</sup>

### 1.1. OA Ventilation Requirements:

Space Usage ..... User-Defined  
 OA Requirement 1 ..... 3,8 L/s/person  
 OA Requirement 2 ..... 0,50 L/(s-m<sup>2</sup>)  
 Space Usage Defaults ASHRAE Std 62.1-2007

### 2. Internals:

#### 2.1. Overhead Lighting:

Fixture Type ..... Recessed (Unvented)  
 Wattage ..... 16,00 W/m<sup>2</sup>  
 Ballast Multiplier ..... 1,00  
 Schedule ..... CASA 49

#### 2.4. People:

Occupancy ..... 2,0 People  
 Activity Level ..... Office Work  
 Sensible ..... 71,8  
 ..... W/person  
 Latent ..... 60,1  
 ..... W/person  
 Schedule ..... CASA 49

#### 2.2. Task Lighting:

Wattage ..... 0,00 W/m<sup>2</sup>  
 Schedule ..... CASA 49

#### 2.5. Miscellaneous Loads:

Sensible ..... 0 W  
 Schedule ..... CASA 49  
 Latent ..... 0 W  
 Schedule ..... CASA 49

#### 2.3. Electrical Equipment:

Wattage ..... 450,0 Watts  
 Schedule ..... CASA 49

### 3. Walls, Windows, Doors:

Exp.	Wall Gross Area (m <sup>2</sup> )	Window 1 Qty.	Window 2 Qty.	Door 1 Qty.
S	11,8	2	0	0

#### 3.1. Construction Types for Exposure S

Wall Type Parede bloco cerâmico rebocada - 13 cm  
 1st Window Type JANELA PADRÃO 1,00X1,00M2

### 4. Roofs, Skylights:

(No Roof or Skylight data).

### 5. Infiltration:

Design Cooling ..... 0,00 ACH  
 Design Heating ..... 0,00 L/s



Energy Analysis ..... 0,00 L/s  
Infiltration occurs at all hours.

#### 6. Floors:

Type .. Floor Above Conditioned Space  
(No additional input required for this floor type).

#### 7. Partitions:

##### 7.1. 1st Partition Details:

Partition Type ..... Wall Partition  
Area ..... 31,3 m<sup>2</sup>  
U-Value ..... 1,600 W/(m<sup>2</sup>-  
°K)  
Uncondit. Space Max Temp ..... 31,0 °C  
Ambient at Space Max Temp ..... 31,0 °C  
Uncondit. Space Min Temp ..... 22,0 °C  
Ambient at Space Min Temp ..... 22,0 °C

##### 7.2. 2nd Partition Details:

Partition Type ..... Ceiling Partition  
Area ..... 1,0 m<sup>2</sup>  
U-Value ..... 0,900 W/(m<sup>2</sup>-  
°K)  
Uncondit. Space Max Temp ..... 31,0 °C  
Ambient at Space Max Temp ..... 31,0 °C  
Uncondit. Space Min Temp ..... 22,0 °C  
Ambient at Space Min Temp ..... 22,0 °C

## SUB2-SECRETARIA DEPARTAM

### 1. General Details:

Floor Area ..... 18,1 m<sup>2</sup>  
 Avg. Ceiling Height ..... 2,5 m  
 Building Weight ..... 341,8 kg/m<sup>2</sup>

### 1.1. OA Ventilation Requirements:

Space Usage ..... User-Defined  
 OA Requirement 1 ..... 3,8 L/s/person  
 OA Requirement 2 ..... 0,50 L/(s-m<sup>2</sup>)  
 Space Usage Defaults ASHRAE Std 62.1-2007

### 2. Internals:

#### 2.1. Overhead Lighting:

Fixture Type ..... Recessed (Unvented)  
 Wattage ..... 16,00 W/m<sup>2</sup>  
 Ballast Multiplier ..... 1,00  
 Schedule ..... CASA 49

#### 2.4. People:

Occupancy ..... 2,0 People  
 Activity Level ..... Office Work  
 Sensible ..... 71,8  
 ..... W/person  
 Latent ..... 60,1  
 ..... W/person  
 Schedule ..... CASA 49

#### 2.2. Task Lighting:

Wattage ..... 0,00 W/m<sup>2</sup>  
 Schedule ..... CASA 49

#### 2.5. Miscellaneous Loads:

Sensible ..... 0 W  
 Schedule ..... CASA 49  
 Latent ..... 0 W  
 Schedule ..... CASA 49

#### 2.3. Electrical Equipment:

Wattage ..... 450,0 Watts  
 Schedule ..... CASA 49

### 3. Walls, Windows, Doors:

Exp.	Wall Gross Area (m <sup>2</sup> )	Window 1 Qty.	Window 2 Qty.	Door 1 Qty.
W	7,5	0	0	0

#### 3.1. Construction Types for Exposure W

Wall Type Parede bloco cerâmico rebocada - 13 cm

### 4. Roofs, Skylights:

(No Roof or Skylight data).

### 5. Infiltration:

Design Cooling ..... 0,00 ACH  
 Design Heating ..... 0,00 L/s  
 Energy Analysis ..... 0,00 L/s

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Infiltration occurs at all hours.

#### 6. Floors:

Type .. Floor Above Conditioned Space  
(No additional input required for this floor type).

#### 7. Partitions:

##### 7.1. 1st Partition Details:

Partition Type ..... Wall Partition  
Area ..... 38,0 m<sup>2</sup>  
U-Value ..... 1,600 W/(m<sup>2</sup>-  
°K)  
Uncondit. Space Max Temp ..... 31,0 °C  
Ambient at Space Max Temp ..... 31,0 °C  
Uncondit. Space Min Temp ..... 22,0 °C  
Ambient at Space Min Temp ..... 22,0 °C

##### 7.2. 2nd Partition Details:

Partition Type ..... Ceiling Partition  
Area ..... 1,0 m<sup>2</sup>  
U-Value ..... 0,900 W/(m<sup>2</sup>-  
°K)  
Uncondit. Space Max Temp ..... 31,0 °C  
Ambient at Space Max Temp ..... 31,0 °C  
Uncondit. Space Min Temp ..... 22,0 °C  
Ambient at Space Min Temp ..... 22,0 °C

## TE-RECEPÇÃO

### 1. General Details:

Floor Area ..... 12,8 m<sup>2</sup>  
 Avg. Ceiling Height ..... 3,3 m  
 Building Weight ..... 341,8 kg/m<sup>2</sup>

### 1.1. OA Ventilation Requirements:

Space Usage ..... User-Defined  
 OA Requirement 1 ..... 3,8 L/s/person  
 OA Requirement 2 ..... 0,50 L/(s-m<sup>2</sup>)  
 Space Usage Defaults ASHRAE Std 62.1-2007

### 2. Internals:

#### 2.1. Overhead Lighting:

Fixture Type ..... Recessed (Unvented)  
 Wattage ..... 16,00 W/m<sup>2</sup>  
 Ballast Multiplier ..... 1,00  
 Schedule ..... CASA 49

#### 2.4. People:

Occupancy ..... 5,0 People  
 Activity Level ..... Office Work  
 Sensible ..... 71,8  
 ..... W/person  
 Latent ..... 60,1  
 ..... W/person  
 Schedule ..... CASA 49

#### 2.2. Task Lighting:

Wattage ..... 0,00 W/m<sup>2</sup>  
 Schedule ..... CASA 49

#### 2.5. Miscellaneous Loads:

Sensible ..... 0 W  
 Schedule ..... CASA 49  
 Latent ..... 0 W  
 Schedule ..... CASA 49

#### 2.3. Electrical Equipment:

Wattage ..... 450,0 Watts  
 Schedule ..... CASA 49

### 3. Walls, Windows, Doors:

Exp.	Wall Gross Area (m <sup>2</sup> )	Window 1 Qty.	Window 2 Qty.	Door 1 Qty.
N	11,2	3	0	0
E	8,6	1	0	0

#### 3.1. Construction Types for Exposure N

Wall Type Parede bloco cerâmico rebocada - 13 cm  
 1st Window Type JANELA PADRÃO 1,00X1,00M2

#### 3.2. Construction Types for Exposure E

Wall Type Parede bloco cerâmico rebocada - 13 cm  
 1st Window Type JANELA PADRÃO 1,00X1,00M2

### 4. Roofs, Skylights:

(No Roof or Skylight data).

**5. Infiltration:**

Design Cooling ..... 0,00 ACH  
Design Heating ..... 0,00 L/s  
Energy Analysis ..... 0,00 L/s  
Infiltration occurs at all hours.

**6. Floors:**

Type **Floor Above Unconditioned Space**  
Floor Area ..... 12,8 m<sup>2</sup>  
Total Floor U-Value ..... 1,600 W/(m<sup>2</sup>·°K)  
Unconditioned Space Max Temp. . 31,0 °C  
Ambient at Space Max Temp. .... 31,0 °C  
Unconditioned Space Min Temp. . 22,0 °C  
Ambient at Space Min Temp. .... 22,0 °C

**7. Partitions:****7.1. 1st Partition Details:**

Partition Type ..... **Wall Partition**  
Area ..... 23,1 m<sup>2</sup>  
U-Value ..... 1,600 W/(m<sup>2</sup>·°K)  
Uncondit. Space Max Temp ..... 31,0 °C  
Ambient at Space Max Temp ..... 31,0 °C  
Uncondit. Space Min Temp ..... 22,0 °C  
Ambient at Space Min Temp ..... 22,0 °C

**7.2. 2nd Partition Details:**

(No partition data).

## TE-S.DE EX. AUDIOME. 01

### 1. General Details:

Floor Area ..... 16,0 m<sup>2</sup>  
 Avg. Ceiling Height ..... 2,5 m  
 Building Weight ..... 341,8 kg/m<sup>2</sup>

### 1.1. OA Ventilation Requirements:

Space Usage ..... User-Defined  
 OA Requirement 1 ..... 3,8 L/s/person  
 OA Requirement 2 ..... 0,50 L/(s·m<sup>2</sup>)  
 Space Usage Defaults ASHRAE Std 62.1-2007

### 2. Internals:

#### 2.1. Overhead Lighting:

Fixture Type ..... Recessed (Unvented)  
 Wattage ..... 16,00 W/m<sup>2</sup>  
 Ballast Multiplier ..... 1,00  
 Schedule ..... CASA 49

#### 2.4. People:

Occupancy ..... 2,0 People  
 Activity Level ..... Office Work  
 Sensible ..... 71,8  
 ..... W/person  
 Latent ..... 60,1  
 ..... W/person  
 Schedule ..... CASA 49

#### 2.2. Task Lighting:

Wattage ..... 0,00 W/m<sup>2</sup>  
 Schedule ..... CASA 49

#### 2.5. Miscellaneous Loads:

Sensible ..... 0 W  
 Schedule ..... CASA 49  
 Latent ..... 0 W  
 Schedule ..... CASA 49

#### 2.3. Electrical Equipment:

Wattage ..... 450,0 Watts  
 Schedule ..... CASA 49

### 3. Walls, Windows, Doors:

Exp.	Wall Gross Area (m <sup>2</sup> )	Window 1 Qty.	Window 2 Qty.	Door 1 Qty.
E	7,4	1	0	0

#### 3.1. Construction Types for Exposure E

Wall Type Parede bloco cerâmico rebocada - 13 cm  
 1st Window Type JANELA PADRÃO 1,00X1,00M2

### 4. Roofs, Skylights:

(No Roof or Skylight data).

### 5. Infiltration:

Design Cooling ..... 0,00 ACH

Design Heating ..... 0,00 L/s  
Energy Analysis ..... 0,00 L/s  
Infiltration occurs at all hours.

**6. Floors:**

Type **Floor Above Unconditioned Space**

Floor Area ..... 16,0 m<sup>2</sup>

Total Floor U-Value ..... 1,600 W/(m<sup>2</sup>·°K)

Unconditioned Space Max Temp. . 31,0 °C

Ambient at Space Max Temp. .... 31,0 °C

Unconditioned Space Min Temp. .. 22,0 °C

Ambient at Space Min Temp. .... 22,0 °C

**7. Partitions:****7.1. 1st Partition Details:**

Partition Type ..... **Wall Partition**

Area ..... 34,4 m<sup>2</sup>

U-Value ..... 1,600 W/(m<sup>2</sup>·°K)

Uncondit. Space Max Temp ..... 31,0 °C

Ambient at Space Max Temp ..... 31,0 °C

Uncondit. Space Min Temp ..... 22,0 °C

Ambient at Space Min Temp ..... 22,0 °C

**7.2. 2nd Partition Details:**

(No partition data).

## TE-S.DE EX. AUDIOME. 02

### 1. General Details:

Floor Area ..... 8,3 m<sup>2</sup>  
 Avg. Ceiling Height ..... 2,5 m  
 Building Weight ..... 341,8 kg/m<sup>2</sup>

### 1.1. OA Ventilation Requirements:

Space Usage ..... User-Defined  
 OA Requirement 1 ..... 3,8 L/s/person  
 OA Requirement 2 ..... 0,50 L/(s-m<sup>2</sup>)  
 Space Usage Defaults ASHRAE Std 62.1-2007

### 2. Internals:

#### 2.1. Overhead Lighting:

Fixture Type ..... Recessed (Unvented)  
 Wattage ..... 16,00 W/m<sup>2</sup>  
 Ballast Multiplier ..... 1,00  
 Schedule ..... CASA 49

#### 2.4. People:

Occupancy ..... 2,0 People  
 Activity Level ..... Office Work  
 Sensible ..... 71,8  
 ..... W/person  
 Latent ..... 60,1  
 ..... W/person  
 Schedule ..... CASA 49

#### 2.2. Task Lighting:

Wattage ..... 0,00 W/m<sup>2</sup>  
 Schedule ..... CASA 49

#### 2.5. Miscellaneous Loads:

Sensible ..... 0 W  
 Schedule ..... CASA 49  
 Latent ..... 0 W  
 Schedule ..... CASA 49

### 2.3. Electrical Equipment:

Wattage ..... 450,0 Watts  
 Schedule ..... CASA 49

### 3. Walls, Windows, Doors:

Exp.	Wall Gross Area (m <sup>2</sup> )	Window 1 Qty.	Window 2 Qty.	Door 1 Qty.
E	6,0	0	0	0

#### 3.1. Construction Types for Exposure E

Wall Type Parede bloco cerâmico rebocada - 13 cm

### 4. Roofs, Skylights:

(No Roof or Skylight data).

### 5. Infiltration:

Design Cooling ..... 0,00 ACH  
 Design Heating ..... 0,00 L/s  
 Energy Analysis ..... 0,00 L/s



Infiltration occurs at all hours.

#### 6. Floors:

Type **Floor Above Unconditioned Space**

Floor Area ..... **8,3** m<sup>2</sup>

Total Floor U-Value ..... **1,600** W/(m<sup>2</sup>-°K)

Unconditioned Space Max Temp. . **31,0** °C

Ambient at Space Max Temp. .... **31,0** °C

Unconditioned Space Min Temp. .. **22,0** °C

Ambient at Space Min Temp. .... **22,0** °C

#### 7. Partitions:

##### 7.1. 1st Partition Details:

Partition Type ..... **Wall Partition**

Area ..... **24,0** m<sup>2</sup>

U-Value ..... **1,600** W/(m<sup>2</sup>-°K)

Uncondit. Space Max Temp ..... **31,0** °C

Ambient at Space Max Temp ..... **31,0** °C

Uncondit. Space Min Temp ..... **22,0** °C

Ambient at Space Min Temp ..... **22,0** °C

##### 7.2. 2nd Partition Details:

(No partition data).

## TE-S.DE EX. AUDIOME. 03

### 1. General Details:

Floor Area ..... 9,7 m<sup>2</sup>  
 Avg. Ceiling Height ..... 2,5 m  
 Building Weight ..... 341,8 kg/m<sup>2</sup>

### 1.1. OA Ventilation Requirements:

Space Usage ..... User-Defined  
 OA Requirement 1 ..... 3,8 L/s/person  
 OA Requirement 2 ..... 0,50 L/(s-m<sup>2</sup>)  
 Space Usage Defaults ASHRAE Std 62.1-2007

### 2. Internals:

#### 2.1. Overhead Lighting:

Fixture Type ..... Recessed (Unvented)  
 Wattage ..... 16,00 W/m<sup>2</sup>  
 Ballast Multiplier ..... 1,00  
 Schedule ..... CASA 49

#### 2.4. People:

Occupancy ..... 2,0 People  
 Activity Level ..... Office Work  
 Sensible ..... 71,8  
 ..... W/person  
 Latent ..... 60,1  
 ..... W/person  
 Schedule ..... CASA 49

#### 2.2. Task Lighting:

Wattage ..... 0,00 W/m<sup>2</sup>  
 Schedule ..... CASA 49

#### 2.5. Miscellaneous Loads:

Sensible ..... 0 W  
 Schedule ..... CASA 49  
 Latent ..... 0 W  
 Schedule ..... CASA 49

#### 2.3. Electrical Equipment:

Wattage ..... 450,0 Watts  
 Schedule ..... CASA 49

### 3. Walls, Windows, Doors:

Exp.	Wall Gross Area (m <sup>2</sup> )	Window 1 Qty.	Window 2 Qty.	Door 1 Qty.
E	6,8	0	0	0

#### 3.1. Construction Types for Exposure E

Wall Type Parede bloco cerâmico rebocada - 13 cm

#### 4. Roofs, Skylights:

(No Roof or Skylight data).

#### 5. Infiltration:

Design Cooling ..... 0,00 ACH  
 Design Heating ..... 0,00 L/s  
 Energy Analysis ..... 0,00 L/s

22

Infiltration occurs at all hours.

#### 6. Floors:

Type **Floor Above Unconditioned Space**

Floor Area ..... 9,7 m<sup>2</sup>

Total Floor U-Value ..... 1,600 W/(m<sup>2</sup>-°K)

Unconditioned Space Max Temp. . 31,0 °C

Ambient at Space Max Temp. .... 31,0 °C

Unconditioned Space Min Temp. . 22,0 °C

Ambient at Space Min Temp. .... 22,0 °C

#### 7. Partitions:

##### 7.1. 1st Partition Details:

Partition Type ..... **Wall Partition**

Area ..... 24,8 m<sup>2</sup>

U-Value ..... 1,600 W/(m<sup>2</sup>-°K)

Uncondit. Space Max Temp ..... 31,0 °C

Ambient at Space Max Temp ..... 31,0 °C

Uncondit. Space Min Temp ..... 22,0 °C

Ambient at Space Min Temp ..... 22,0 °C

##### 7.2. 2nd Partition Details:

(No partition data).

## TE-SALA DE ESPERA

### 1. General Details:

Floor Area ..... 20,0 m<sup>2</sup>  
Avg. Ceiling Height ..... 2,5 m  
Building Weight ..... 341,8 kg/m<sup>2</sup>

#### 1.1. OA Ventilation Requirements:

Space Usage ..... User-Defined  
OA Requirement 1 ..... 3,8 L/s/person  
OA Requirement 2 ..... 0,50 L/(s-m<sup>2</sup>)  
Space Usage Defaults **ASHRAE Std 62.1-2007**

### 2. Internals:

#### 2.1. Overhead Lighting:

Fixture Type ..... Recessed (Unvented)  
Wattage ..... 16,00 W/m<sup>2</sup>  
Ballast Multiplier ..... 1,00  
Schedule ..... CASA 49

#### 2.4. People:

Occupancy ..... 5,0 People  
Activity Level ..... Office Work  
Sensible ..... 71,8  
..... W/person  
Latent ..... 60,1  
..... W/person  
Schedule ..... CASA 49

#### 2.2. Task Lighting:

Wattage ..... 0,00 W/m<sup>2</sup>  
Schedule ..... CASA 49

#### 2.5. Miscellaneous Loads:

Sensible ..... 0 W  
Schedule ..... CASA 49  
Latent ..... 0 W  
Schedule ..... CASA 49

#### 2.3. Electrical Equipment:

Wattage ..... 450,0 Watts  
Schedule ..... CASA 49

### 3. Walls, Windows, Doors:

Exp.	Wall Gross Area (m <sup>2</sup> )	Window 1 Qty.	Window 2 Qty.	Door 1 Qty.
E	7,4	1	0	0
W	16,3	0	0	0

#### 3.1. Construction Types for Exposure E

Wall Type Parede bloco cerâmico rebocada - 13 cm  
1st Window Type JANELA PADRÃO 1,00X1,00M2

#### 3.2. Construction Types for Exposure W

Wall Type Parede bloco cerâmico rebocada - 13 cm

### 4. Roofs, Skylights:

(No Roof or Skylight data).

**5. Infiltration:**

Design Cooling ..... 0,00 ACH  
Design Heating ..... 0,00 L/s  
Energy Analysis ..... 0,00 L/s  
Infiltration occurs at all hours.

**6. Floors:**

Type **Floor Above Unconditioned Space**  
Floor Area ..... 20,0 m<sup>2</sup>  
Total Floor U-Value ..... 1,600 W/(m<sup>2</sup>·°K)  
Unconditioned Space Max Temp. ... 31,0 °C  
Ambient at Space Max Temp. .... 31,0 °C  
Unconditioned Space Min Temp. ... 22,0 °C  
Ambient at Space Min Temp. .... 22,0 °C

**7. Partitions:****7.1. 1st Partition Details:**

Partition Type ..... **Wall Partition**  
Area ..... 29,7 m<sup>2</sup>  
U-Value ..... 1,600 W/(m<sup>2</sup>·°K)  
Uncondit. Space Max Temp ..... 31,0 °C  
Ambient at Space Max Temp ..... 31,0 °C  
Uncondit. Space Min Temp ..... 22,0 °C  
Ambient at Space Min Temp ..... 22,0 °C

**7.2. 2nd Partition Details:  
(No partition data).**

## TE-SALA EXAME PEATE

### 1. General Details:

Floor Area ..... 9,0 m<sup>2</sup>  
 Avg. Ceiling Height ..... 2,5 m  
 Building Weight ..... 341,8 kg/m<sup>2</sup>

### 1.1. OA Ventilation Requirements:

Space Usage ..... User-Defined  
 OA Requirement 1 ..... 3,8 L/s/person  
 OA Requirement 2 ..... 0,50 L/(s-m<sup>2</sup>)  
 Space Usage Defaults ASHRAE Std 62.1-2007

### 2. Internals:

#### 2.1. Overhead Lighting:

Fixture Type ..... Recessed (Unvented)  
 Wattage ..... 16,00 W/m<sup>2</sup>  
 Ballast Multiplier ..... 1,00  
 Schedule ..... CASA 49

#### 2.4. People:

Occupancy ..... 2,0 People  
 Activity Level ..... Office Work  
 Sensible ..... 71,8  
 ..... W/person  
 Latent ..... 60,1  
 ..... W/person  
 Schedule ..... CASA 49

#### 2.2. Task Lighting:

Wattage ..... 0,00 W/m<sup>2</sup>  
 Schedule ..... CASA 49

#### 2.5. Miscellaneous Loads:

Sensible ..... 0 W  
 Schedule ..... CASA 49  
 Latent ..... 0 W  
 Schedule ..... CASA 49

#### 2.3. Electrical Equipment:

Wattage ..... 450,0 Watts  
 Schedule ..... CASA 49

### 3. Walls, Windows, Doors:

Exp.	Wall Gross Area (m <sup>2</sup> )	Window 1 Qty.	Window 2 Qty.	Door 1 Qty.
E	5,8	1	0	0
S	8,1	1	0	0

#### 3.1. Construction Types for Exposure E

Wall Type Parede bloco cerâmico rebocada - 13 cm  
 1st Window Type JANELA PADRÃO 1,00X1,00M2

#### 3.2. Construction Types for Exposure S

Wall Type Parede bloco cerâmico rebocada - 13 cm  
 1st Window Type JANELA PADRÃO 1,00X1,00M2

### 4. Roofs, Skylights:

(No Roof or Skylight data).

**5. Infiltration:**

Design Cooling ..... 0,00 ACH

Design Heating ..... 0,00 L/s

Energy Analysis ..... 0,00 L/s

Infiltration occurs at all hours.

**6. Floors:**

Type **Floor Above Unconditioned Space**

Floor Area ..... 9,0 m<sup>2</sup>

Total Floor U-Value ..... 1,600 W/(m<sup>2</sup>-°K)

Unconditioned Space Max Temp. . 31,0 °C

Ambient at Space Max Temp. .... 31,0 °C

Unconditioned Space Min Temp. .. 22,0 °C

Ambient at Space Min Temp. .... 22,0 °C

**7. Partitions:****7.1. 1st Partition Details:**

Partition Type ..... **Wall Partition**

Area ..... 16,8 m<sup>2</sup>

U-Value ..... 1,600 W/(m<sup>2</sup>-°K)

Uncondit. Space Max Temp ..... 31,0 °C

Ambient at Space Max Temp ..... 31,0 °C

Uncondit. Space Min Temp ..... 22,0 °C

Ambient at Space Min Temp ..... 22,0 °C

**7.2. 2nd Partition Details:**

(No partition data).

## TE-TERAPIA 01

### 1. General Details:

Floor Area ..... 8,7 m<sup>2</sup>  
 Avg. Ceiling Height ..... 3,3 m  
 Building Weight ..... 341,8 kg/m<sup>2</sup>

#### 1.1. OA Ventilation Requirements:

Space Usage ..... User-Defined  
 OA Requirement 1 ..... 3,8 L/s/person  
 OA Requirement 2 ..... 0,50 L/(s-m<sup>2</sup>)  
 Space Usage Defaults ASHRAE Std 62.1-2007

### 2. Internals:

#### 2.1. Overhead Lighting:

Fixture Type ..... Recessed (Unvented)  
 Wattage ..... 16,00 W/m<sup>2</sup>  
 Ballast Multiplier ..... 1,00  
 Schedule ..... CASA 49

#### 2.4. People:

Occupancy ..... 2,0 People  
 Activity Level ..... Office Work  
 Sensible ..... 71,8  
 ..... W/person  
 Latent ..... 60,1  
 ..... W/person  
 Schedule ..... CASA 49

#### 2.2. Task Lighting:

Wattage ..... 0,00 W/m<sup>2</sup>  
 Schedule ..... CASA 49

#### 2.5. Miscellaneous Loads:

Sensible ..... 0 W  
 Schedule ..... CASA 49  
 Latent ..... 0 W  
 Schedule ..... CASA 49

#### 2.3. Electrical Equipment:

Wattage ..... 450,0 Watts  
 Schedule ..... CASA 49

### 3. Walls, Windows, Doors:

Exp.	Wall Gross Area (m <sup>2</sup> )	Window 1 Qty.	Window 2 Qty.	Door 1 Qty.
E	6,6	1	0	0

#### 3.1. Construction Types for Exposure E

Wall Type Parede bloco cerâmico rebocada - 13 cm  
 1st Window Type JANELA PADRÃO 1,00X1,00M2

### 4. Roofs, Skylights:

(No Roof or Skylight data).

### 5. Infiltration:

Design Cooling ..... 0,00 ACH



Design Heating ..... 0,00 L/s  
 Energy Analysis ..... 0,00 L/s  
 Infiltration occurs at all hours.

#### 6. Floors:

Type **Floor Above Unconditioned Space**  
 Floor Area ..... 8,7 m<sup>2</sup>  
 Total Floor U-Value ..... 1,600 W/(m<sup>2</sup>·°K)  
 Unconditioned Space Max Temp. . 31,0 °C  
 Ambient at Space Max Temp. .... 31,0 °C  
 Unconditioned Space Min Temp. . 22,0 °C  
 Ambient at Space Min Temp. .... 22,0 °C

#### 7. Partitions:

##### 7.1. 1st Partition Details:

Partition Type ..... **Wall Partition**  
 Area ..... 34,3 m<sup>2</sup>  
 U-Value ..... 1,600 W/(m<sup>2</sup>·°K)

Uncondit. Space Max Temp ..... 31,0 °C  
 Ambient at Space Max Temp ..... 31,0 °C  
 Uncondit. Space Min Temp ..... 22,0 °C  
 Ambient at Space Min Temp ..... 22,0 °C

##### 7.2. 2nd Partition Details: (No partition data).

## TE-TERAPIA 02

### 1. General Details:

Floor Area ..... 8,9 m<sup>2</sup>  
 Avg. Ceiling Height ..... 3,3 m  
 Building Weight ..... 341,8 kg/m<sup>2</sup>

### 1.1. OA Ventilation Requirements:

Space Usage ..... User-Defined  
 OA Requirement 1 ..... 3,8 L/s/person  
 OA Requirement 2 ..... 0,50 L/(s-m<sup>2</sup>)  
 Space Usage Defaults ASHRAE Std 62.1-2007

### 2. Internals:

#### 2.1. Overhead Lighting:

Fixture Type ..... Recessed (Unvented)  
 Wattage ..... 16,00 W/m<sup>2</sup>  
 Ballast Multiplier ..... 1,00  
 Schedule ..... CASA 49

#### 2.4. People:

Occupancy ..... 2,0 People  
 Activity Level ..... Office Work  
 Sensible ..... 71,8  
 ..... W/person  
 Latent ..... 60,1  
 ..... W/person  
 Schedule ..... CASA 49

#### 2.2. Task Lighting:

Wattage ..... 0,00 W/m<sup>2</sup>  
 Schedule ..... CASA 49

#### 2.5. Miscellaneous Loads:

Sensible ..... 0 W  
 Schedule ..... CASA 49  
 Latent ..... 0 W  
 Schedule ..... CASA 49

#### 2.3. Electrical Equipment:

Wattage ..... 450,0 Watts  
 Schedule ..... CASA 49

### 3. Walls, Windows, Doors:

Exp.	Wall Gross Area (m <sup>2</sup> )	Window 1 Qty.	Window 2 Qty.	Door 1 Qty.
E	6,6	1	0	0

#### 3.1. Construction Types for Exposure E

Wall Type Parede bloco cerâmico rebocada - 13 cm  
 1st Window Type JANELA PADRÃO 1,00X1,00M2

### 4. Roofs, Skylights:

(No Roof or Skylight data).

### 5. Infiltration:

Design Cooling ..... 0,00 ACH  
 Design Heating ..... 0,00 L/s

Energy Analysis ..... 0,00 L/s  
Infiltration occurs at all hours.

#### 6. Floors:

Type **Floor Above Unconditioned Space**  
Floor Area ..... 8,9 m<sup>2</sup>  
Total Floor U-Value ..... 1,600 W/(m<sup>2</sup>·°K)  
Unconditioned Space Max Temp. . 31,0 °C  
Ambient at Space Max Temp. .... 31,0 °C  
Unconditioned Space Min Temp. .. 22,0 °C  
Ambient at Space Min Temp. .... 22,0 °C

#### 7. Partitions:

##### 7.1. 1st Partition Details:

Partition Type ..... Wall Partition  
Area ..... 34,3 m<sup>2</sup>  
U-Value ..... 1,600 W/(m<sup>2</sup>·°K)  
Uncondit. Space Max Temp ..... 31,0 °C  
Ambient at Space Max Temp ..... 31,0 °C  
Uncondit. Space Min Temp ..... 22,0 °C  
Ambient at Space Min Temp ..... 22,0 °C

##### 7.2. 2nd Partition Details:

(No partition data).

## TE-TERAPIA 03

### 1. General Details:

Floor Area ..... 8,9 m<sup>2</sup>  
 Avg. Ceiling Height ..... 3,3 m  
 Building Weight ..... 341,8 kg/m<sup>2</sup>

#### 1.1. OA Ventilation Requirements:

Space Usage ..... User-Defined  
 OA Requirement 1 ..... 3,8 L/s/person  
 OA Requirement 2 ..... 0,50 L/(s-m<sup>2</sup>)  
 Space Usage Defaults ASHRAE Std 62.1-2007

### 2. Internals:

#### 2.1. Overhead Lighting:

Fixture Type ..... Recessed (Unvented)  
 Wattage ..... 16,00 W/m<sup>2</sup>  
 Ballast Multiplier ..... 1,00  
 Schedule ..... CASA 49

#### 2.4. People:

Occupancy ..... 2,0 People  
 Activity Level ..... Office Work  
 Sensible ..... 71,8  
 ..... W/person  
 Latent ..... 60,1  
 ..... W/person  
 Schedule ..... CASA 49

#### 2.2. Task Lighting:

Wattage ..... 0,00 W/m<sup>2</sup>  
 Schedule ..... CASA 49

#### 2.5. Miscellaneous Loads:

Sensible ..... 0 W  
 Schedule ..... CASA 49  
 Latent ..... 0 W  
 Schedule ..... CASA 49

#### 2.3. Electrical Equipment:

Wattage ..... 450,0 Watts  
 Schedule ..... CASA 49

### 3. Walls, Windows, Doors:

Exp.	Wall Gross Area (m <sup>2</sup> )	Window 1 Qty.	Window 2 Qty.	Door 1 Qty.
E	6,6	1	0	0

#### 3.1. Construction Types for Exposure E

Wall Type Parede bloco cerâmico rebocada - 13 cm  
 1st Window Type JANELA PADRÃO 1,00X1,00M2

### 4. Roofs, Skylights:

(No Roof or Skylight data).

### 5. Infiltration:

Design Cooling ..... 0,00 ACH  
 Design Heating ..... 0,00 L/s

Energy Analysis ..... 0,00 L/s  
Infiltration occurs at all hours.

#### 6. Floors:

Type **Floor Above Unconditioned Space**  
Floor Area ..... 8,9 m<sup>2</sup>  
Total Floor U-Value ..... 1,600 W/(m<sup>2</sup>·°K)  
Unconditioned Space Max Temp. . 31,0 °C  
Ambient at Space Max Temp. .... 31,0 °C  
Unconditioned Space Min Temp. .. 22,0 °C  
Ambient at Space Min Temp. .... 22,0 °C

#### 7. Partitions:

##### 7.1. 1st Partition Details:

Partition Type ..... **Wall Partition**  
Area ..... 34,3 m<sup>2</sup>  
U-Value ..... 1,600 W/(m<sup>2</sup>·°K)  
Uncondit. Space Max Temp ..... 31,0 °C  
Ambient at Space Max Temp ..... 31,0 °C  
Uncondit. Space Min Temp ..... 22,0 °C  
Ambient at Space Min Temp ..... 22,0 °C

##### 7.2. 2nd Partition Details:

(No partition data)

#### Air System Information

Air System Name ..... **SUBSOLO 01**  
Equipment Class ..... **TERM**  
Air System Type ..... **SPLT-FC**

Number of zones ..... **1**  
Floor Area ..... **124,5 m<sup>2</sup>**  
Location ..... **Salvador, Brazil**

#### Sizing Calculation Information

##### Zone and Space Sizing Method:

Zone L/s ..... **Sum of space airflow rates**  
Space L/s . **Individual peak space loads**

Calculation Months ..... **Jan to Dec**  
Sizing Data ..... **Calculated**

#### Air System Information

Air System Name ..... **SUBSOLO 01**  
Equipment Class ..... **TERM**  
Air System Type ..... **SPLT-FC**

Number of zones ..... **1**  
Floor Area ..... **124,5 m<sup>2</sup>**  
Location ..... **Salvador, Brazil**

#### Sizing Calculation Information

##### Zone and Space Sizing Method:

Zone L/s ..... **Sum of space airflow rates**  
Space L/s . **Individual peak space loads**

Calculation Months ..... **Jan to Dec**  
Sizing Data ..... **Calculated**

### Zone Sizing Data

Zone Name	Maximum Cooling Sensible (kW)	Design Air Flow (L/s)	Minimum Air Flow (L/s)	Time of Peak Load	Maximum Heating Load (kW)	Zone Floor Area (m²)	Zone L/(s-m²)
Zone 1	15,5	1340	1340	Jan 1700	0,3	124,5	10,76

### Terminal Unit Sizing Data - Cooling

Zone Name	Total Coil Load (kW)	Sens Coil Load (kW)	Coil Entering DB / WB (°C)	Coil Leaving DB / WB (°C)	Water Flow @ 5,6 °K (L/s)	Time of Peak Load
Zone 1	25,0	19,4	24,0 / 17,3	12,0 / 11,4	-	Jan 1400

### Terminal Unit Sizing Data - Heating, Fan, Ventilation

Zone Name	Heating Coil Load (kW)	Heating Coil Ent/Lvg DB (°C)	Htg Coil Water Flow @ 11,1 °K (L/s)	Fan Design AirFlow (L/s)	Fan Motor (BHP)	Fan Motor (kW)	OA Vent Design AirFlow (L/s)
Zone 1	0,0	-18,3 / -18,3	0,00	1340	0,000	0,000	150

### Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (kW)	Time of Load	Air Flow (L/s)	Heating Load (kW)	Floor Area (m²)	Space L/(s-m²)
<b>Zone 1</b>							
SUB1-ADM CEDAF	1	1,0	Jan 1800	84	0,0	6,3	13,35
SUB1-COORD. COLEG 01	1	1,8	Dec 1600	149	0,1	9,5	15,64
SUB1-COORD. COLEG 02	1	1,4	Jan 1800	113	0,0	9,2	12,28
SUB1-RECEPÇÃO E ESPERA	1	1,4	Jan 1800	116	0,0	19,0	6,12
SUB1-SALA OBS. PRONTUARI	1	1,6	Jan 1500	131	0,0	12,2	10,74
SUB1-SEC.ACAD. E COLEG.	1	2,5	Jan 1800	204	0,1	31,2	6,53
SUB1-TERAPIA 04	1	1,9	May 1500	156	0,0	9,3	16,73
SUB1-TERAPIA 05	1	1,2	Feb 1800	97	0,0	7,5	12,88
SUB1-TERAPIA 06	1	1,9	Jan 1400	155	0,1	10,0	15,51
SUB1-TERAPIA 07	1	1,6	Dec 1600	136	0,0	10,3	13,22

## 1. Summary

Ventilation Sizing Method .... Sum of Space OA Airflows

## 2. Space Ventilation Analysis Table

Zone Name / Space Name	Mult.	Floor Area (m²)	Maximum Occupants	Maximum Supply Air (L/s)	Required Outdoor Air (L/s/person)	Required Outdoor Air (L/(s-m²))	Required Outdoor Air (L/s)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (L/s)
<b>Zone 1</b>									
SUB1-ADM CEDAF	1	6,3	2,0	84,1	5,00		0,0	0,0	10,0
SUB1-COORD. COLEG	1	9,5	3,0	148,6	5,00		0,0	0,0	15,0
SUB1-COORD. COLEG	1	9,2	3,0	113,0	5,00		0,0	0,0	15,0
SUB1-RECEPÇÃO E ESPERA	1	19,0	2,0	116,3	5,00		0,0	0,0	10,0
SUB1-SALA OBS. PRONTUARI	1	12,2	2,0	131,0	5,00		0,0	0,0	10,0
SUB1-SEC.ACAD. E COLEG.	1	31,2	3,0	203,7	5,00		0,0	0,0	15,0
SUB1-TERAPIA 04	1	9,3	2,0	155,6	5,00		0,0	0,0	10,0
SUB1-TERAPIA 05	1	7,5	2,0	96,6	5,00		0,0	0,0	10,0
SUB1-TERAPIA 06	1	10,0	2,0	155,1	5,00		0,0	0,0	10,0
SUB1-TERAPIA 07	1	10,3	2,0	136,2	5,00		0,0	0,0	10,0
<b>Totals (incl. Space Multipliers)</b>				<b>1340,2</b>					<b>115,0</b>

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jan 1400 COOLING OA DB / WB 32,0 °C / 25,5 °C			HEATING DATA AT DES HTG HEATING OA DB / WB 20,0 °C / 13,8 °C		
ZONE LOADS	Details	Sensible (W)	Latent (W)	Details	Sensible (W)	Latent (W)
Window & Skylight Solar Loads	12 m²	1719	-	12 m²	-	-
Wall Transmission	88 m²	2197	-	88 m²	234	-
Roof Transmission	0 m²	0	-	0 m²	0	-
Window Transmission	12 m²	613	-	12 m²	76	-
Skylight Transmission	0 m²	0	-	0 m²	0	-
Door Loads	0 m²	0	-	0 m²	0	-
Floor Transmission	0 m²	0	-	0 m²	0	-
Partitions	293 m²	3840	-	293 m²	0	-
Ceiling	7 m²	52	-	7 m²	0	-
Overhead Lighting	1992 W	1602	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	4250 W	3878	-	0	0	-
People	23	1247	1382	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	-	15148	1382	-	311	0
Zone Conditioning	-	17786	1382	-	-82	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Exhaust Fan Load	0 L/s	0	-	0 L/s	0	-
Ventilation Load	115 L/s	1632	4168	115 L/s	114	0
Ventilation Fan Load	0 L/s	0	-	0 L/s	0	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	-	19418	5551	-	33	0
Terminal Unit Cooling	-	19418	5560	-	0	0
Terminal Unit Heating	-	0	-	-	0	-
>> Total Conditioning	-	19418	5560	-	0	0
Key:	Positive values are clg loads Negative values are htg loads			Positive values are htg loads Negative values are clg loads		



Zone 1	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jan 1700 COOLING OA DB / WB 31,6 °C / 25,4 °C			HEATING DATA AT DES HTG HEATING OA DB / WB 20,0 °C / 13,8 °C		
	OCCUPIED T-STAT 22,0 °C			OCCUPIED T-STAT 21,1 °C		
ZONE LOADS	Details	Sensible (W)	Latent (W)	Details	Sensible (W)	Latent (W)
Window & Skylight Solar Loads	12 m²	1410	-	12 m²	-	-
Wall Transmission	88 m²	2544	-	88 m²	234	-
Roof Transmission	0 m²	0	-	0 m²	0	-
Window Transmission	12 m²	608	-	12 m²	76	-
Skylight Transmission	0 m²	0	-	0 m²	0	-
Door Loads	0 m²	0	-	0 m²	0	-
Floor Transmission	0 m²	0	-	0 m²	0	-
Partitions	293 m²	3909	-	293 m²	0	-
Ceiling	7 m²	53	-	7 m²	0	-
Overhead Lighting	1992 W	1674	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	4250 W	3947	-	0	0	-
People	23	1322	1382	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	-	15465	1382	-	311	0

TABLE 1.1.A. COMPONENT LOADS FOR SPACE " SUB1-ADM CEDAF " IN ZONE " Zone 1 "	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jan 1800 COOLING OA DB / WB 31,0 °C / 25,2 °C			HEATING DATA AT DES HTG HEATING OA DB / WB 20,0 °C / 13,8 °C		
	OCCUPIED T-STAT 22,0 °C			OCCUPIED T-STAT 21,1 °C		
SPACE LOADS	Details	Sensible (W)	Latent (W)	Details	Sensible (W)	Latent (W)
Window & Skylight Solar Loads	0 m²	0	-	0 m²	-	-
Wall Transmission	0 m²	0	-	0 m²	0	-
Roof Transmission	0 m²	0	-	0 m²	0	-
Window Transmission	0 m²	0	-	0 m²	0	-
Skylight Transmission	0 m²	0	-	0 m²	0	-
Door Loads	0 m²	0	-	0 m²	0	-
Floor Transmission	0 m²	0	-	0 m²	0	-
Partitions	29 m²	384	-	29 m²	0	-
Ceiling	1 m²	8	-	1 m²	0	-
Overhead Lighting	101 W	86	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	450 W	420	-	0	0	-
People	2	117	120	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	-	1014	120	-	0	0

TABLE 1.1.B. ENVELOPE LOADS FOR SPACE " SUB1-ADM CEDAF " IN ZONE " Zone 1 "						
				COOLING	COOLING	HEATING
	Area	U-Value	Shade	TRANS	SOLAR	TRANS
	(m²)	(W/(m²·°K))	Coeff.	(W)	(W)	(W)

TABLE 1.2.A. COMPONENT LOADS FOR SPACE " SUB1-COORD. COLEG 01 " IN ZONE " Zone 1 "						
	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Dec 1600 COOLING OA DB / WB 31,5 °C / 25,5 °C OCCUPIED T-STAT 22,0 °C			HEATING DATA AT DES HTG HEATING OA DB / WB 20,0 °C / 13,8 °C OCCUPIED T-STAT 21,1 °C		
		Sensible	Latent		Sensible	Latent
SPACE LOADS	Details	(W)	(W)	Details	(W)	(W)
Window & Skylight Solar Loads	2 m²	337	-	2 m²	-	-
Wall Transmission	14 m²	398	-	14 m²	37	-
Roof Transmission	0 m²	0	-	0 m²	0	-
Window Transmission	2 m²	100	-	2 m²	13	-
Skylight Transmission	0 m²	0	-	0 m²	0	-
Door Loads	0 m²	0	-	0 m²	0	-
Floor Transmission	0 m²	0	-	0 m²	0	-
Partitions	19 m²	246	-	19 m²	0	-
Ceiling	0 m²	0	-	0 m²	0	-
Overhead Lighting	152 W	126	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	450 W	416	-	0	0	-
People	3	169	180	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	-	1792	180	-	50	0

TABLE 1.2.B. ENVELOPE LOADS FOR SPACE " SUB1-COORD. COLEG 01 " IN ZONE " Zone 1 "						
				COOLING	COOLING	HEATING
	Area	U-Value	Shade	TRANS	SOLAR	TRANS
	(m²)	(W/(m²·°K))	Coeff.	(W)	(W)	(W)
E EXPOSURE						
WALL	6	2,405	-	170	-	16
WINDOW 1	1	5,870	1,000	50	163	7
S EXPOSURE						
WALL	8	2,405	-	228	-	21
WINDOW 1	1	5,870	1,000	50	174	7

TABLE 1.3.A. COMPONENT LOADS FOR SPACE " SUB1-COORD. COLEG 02 " IN ZONE " Zone 1 "						
	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jan 1800 COOLING OA DB / WB 31,0 °C / 25,2 °C OCCUPIED T-STAT 22,0 °C			HEATING DATA AT DES HTG HEATING OA DB / WB 20,0 °C / 13,8 °C OCCUPIED T-STAT 21,1 °C		
		Sensible	Latent		Sensible	Latent
	Details	(W)	(W)	Details	(W)	(W)
SPACE LOADS						
Window & Skylight Solar Loads	0 m²	0	-	0 m²	-	-
Wall Transmission	8 m²	297	-	8 m²	22	-
Roof Transmission	0 m²	0	-	0 m²	0	-
Window Transmission	0 m²	0	-	0 m²	0	-
Skylight Transmission	0 m²	0	-	0 m²	0	-
Door Loads	0 m²	0	-	0 m²	0	-
Floor Transmission	0 m²	0	-	0 m²	0	-
Partitions	26 m²	345	-	26 m²	0	-
Ceiling	0 m²	0	-	0 m²	0	-
Overhead Lighting	147 W	125	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	450 W	420	-	0	0	-
People	3	175	180	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	-	1363	180	-	22	0

TABLE 1.3.B. ENVELOPE LOADS FOR SPACE " SUB1-COORD. COLEG 02 " IN ZONE " Zone 1 "						
				COOLING	COOLING	HEATING
	Area	U-Value	Shade	TRANS	SOLAR	TRANS
	(m²)	(W/(m²·°K))	Coeff.	(W)	(W)	(W)
W EXPOSURE						
WALL	8	2,405	-	297	-	22

TABLE 1.4.A. COMPONENT LOADS FOR SPACE " SUB1-RECEPÇÃO E ESPERA " IN ZONE " Zone 1 "						
	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jan 1800 COOLING OA DB / WB 31,0 °C / 25,2 °C OCCUPIED T-STAT 22,0 °C			HEATING DATA AT DES HTG HEATING OA DB / WB 20,0 °C / 13,8 °C OCCUPIED T-STAT 21,1 °C		
		Sensible	Latent		Sensible	Latent
SPACE LOADS	Details	(W)	(W)	Details	(W)	(W)
Window & Skylight Solar Loads	0 m²	0	-	0 m²	-	-
Wall Transmission	0 m²	0	-	0 m²	0	-
Roof Transmission	0 m²	0	-	0 m²	0	-
Window Transmission	0 m²	0	-	0 m²	0	-
Skylight Transmission	0 m²	0	-	0 m²	0	-
Door Loads	0 m²	0	-	0 m²	0	-
Floor Transmission	0 m²	0	-	0 m²	0	-
Partitions	45 m²	600	-	45 m²	0	-
Ceiling	1 m²	8	-	1 m²	0	-
Overhead Lighting	304 W	259	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	450 W	420	-	0	0	-
People	2	117	120	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	-	1403	120	-	0	0

TABLE 1.4.B. ENVELOPE LOADS FOR SPACE " SUB1-RECEPÇÃO E ESPERA " IN ZONE " Zone 1 "						
				COOLING	COOLING	HEATING
	Area	U-Value	Shade	TRANS	SOLAR	TRANS
	(m²)	(W/(m²·°K))	Coeff.	(W)	(W)	(W)

TABLE 1.5.A. COMPONENT LOADS FOR SPACE " SUB1-SALA OBS. PRONTUARI " IN ZONE "						
Zone 1 "						
	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jan 1500 COOLING OA DB / WB 32,2 °C / 25,6 °C OCCUPIED T-STAT 22,0 °C			HEATING DATA AT DES HTG HEATING OA DB / WB 20,0 °C / 13,8 °C OCCUPIED T-STAT 21,1 °C		
		Sensible (W)	Latent (W)		Sensible (W)	Latent (W)
SPACE LOADS	Details			Details		
Window & Skylight Solar Loads	1 m²	179	-	1 m²	-	-
Wall Transmission	4 m²	117	-	4 m²	10	-
Roof Transmission	0 m²	0	-	0 m²	0	-
Window Transmission	1 m²	54	-	1 m²	7	-
Skylight Transmission	0 m²	0	-	0 m²	0	-
Door Loads	0 m²	0	-	0 m²	0	-
Floor Transmission	0 m²	0	-	0 m²	0	-
Partitions	41 m²	540	-	41 m²	0	-
Ceiling	1 m²	7	-	1 m²	0	-
Overhead Lighting	195 W	159	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	450 W	413	-	0	0	-
People	2	111	120	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	-	1581	120	-	17	0

TABLE 1.5.B. ENVELOPE LOADS FOR SPACE " SUB1-SALA OBS. PRONTUARI " IN ZONE "						
Zone 1 "						
				COOLING	COOLING	HEATING
	Area	U-Value	Shade	TRANS	SOLAR	TRANS
	(m²)	(W/(m²·°K))	Coeff.	(W)	(W)	(W)
E EXPOSURE						
WALL	4	2,405	-	117	-	10
WINDOW 1	1	5,870	1,000	54	179	7

TABLE 1.6.A. COMPONENT LOADS FOR SPACE " SUB1-SEC.ACAD. E COLEG. " IN ZONE " Zone 1 "						
	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jan 1800 COOLING OA DB / WB 31,0 °C / 25,2 °C OCCUPIED T-STAT 22,0 °C			HEATING DATA AT DES HTG HEATING OA DB / WB 20,0 °C / 13,8 °C OCCUPIED T-STAT 21,1 °C		
		Sensible	Latent		Sensible	Latent
SPACE LOADS	Details	(W)	(W)	Details	(W)	(W)
Window & Skylight Solar Loads	1 m²	139	-	1 m²	-	-
Wall Transmission	24 m²	780	-	24 m²	63	-
Roof Transmission	0 m²	0	-	0 m²	0	-
Window Transmission	1 m²	50	-	1 m²	7	-
Skylight Transmission	0 m²	0	-	0 m²	0	-
Door Loads	0 m²	0	-	0 m²	0	-
Floor Transmission	0 m²	0	-	0 m²	0	-
Partitions	35 m²	469	-	35 m²	0	-
Ceiling	0 m²	0	-	0 m²	0	-
Overhead Lighting	499 W	425	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	450 W	420	-	0	0	-
People	3	175	180	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	-	2457	180	-	70	0

TABLE 1.6.B. ENVELOPE LOADS FOR SPACE " SUB1-SEC.ACAD. E COLEG. " IN ZONE " Zone 1 "						
				COOLING	COOLING	HEATING
	Area	U-Value	Shade	TRANS	SOLAR	TRANS
	(m²)	(W/(m²·°K))	Coeff.	(W)	(W)	(W)
E EXPOSURE						
WALL	11	2,405	-	316	-	28
WINDOW 1	1	5,870	1,000	50	139	7
W EXPOSURE						
WALL	13	2,405	-	464	-	35

TABLE 1.7.A. COMPONENT LOADS FOR SPACE " SUB1-TERAPIA 04 " IN ZONE " Zone 1 "						
	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT May 1500 COOLING OA DB / WB 28,2 °C / 23,8 °C OCCUPIED T-STAT 22,0 °C			HEATING DATA AT DES HTG HEATING OA DB / WB 20,0 °C / 13,8 °C OCCUPIED T-STAT 21,1 °C		
		Sensible	Latent		Sensible	Latent
SPACE LOADS	Details	(W)	(W)	Details	(W)	(W)
Window & Skylight Solar Loads	3 m²	832	-	3 m²	-	-
Wall Transmission	7 m²	153	-	7 m²	19	-
Roof Transmission	0 m²	0	-	0 m²	0	-
Window Transmission	3 m²	89	-	3 m²	20	-
Skylight Transmission	0 m²	0	-	0 m²	0	-
Door Loads	0 m²	0	-	0 m²	0	-
Floor Transmission	0 m²	0	-	0 m²	0	-
Partitions	25 m²	199	-	25 m²	0	-
Ceiling	1 m²	5	-	1 m²	0	-
Overhead Lighting	149 W	122	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	400 W	367	-	0	0	-
People	2	111	120	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	-	1877	120	-	39	0

TABLE 1.7.B. ENVELOPE LOADS FOR SPACE " SUB1-TERAPIA 04 " IN ZONE " Zone 1 "						
				COOLING	COOLING	HEATING
	Area	U-Value	Shade	TRANS	SOLAR	TRANS
	(m²)	(W/(m²·°K))	Coeff.	(W)	(W)	(W)
N EXPOSURE						
WALL	7	2,405	-	153	-	19
WINDOW 1	3	5,870	1,000	89	832	20

TABLE 1.8.A. COMPONENT LOADS FOR SPACE " SUB1-TERAPIA 05 " IN ZONE " Zone 1 "						
	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Feb 1800			HEATING DATA AT DES HTG		
	COOLING OA DB / WB 31,0 °C / 25,2 °C			HEATING OA DB / WB 20,0 °C / 13,8 °C		
	OCCUPIED T-STAT 22,0 °C			OCCUPIED T-STAT 21,1 °C		
		Sensible	Latent		Sensible	Latent
SPACE LOADS	Details	(W)	(W)	Details	(W)	(W)
Window & Skylight Solar Loads	0 m²	0	-	0 m²	-	-
Wall Transmission	6 m²	133	-	6 m²	15	-
Roof Transmission	0 m²	0	-	0 m²	0	-
Window Transmission	0 m²	0	-	0 m²	0	-
Skylight Transmission	0 m²	0	-	0 m²	0	-
Door Loads	0 m²	0	-	0 m²	0	-
Floor Transmission	0 m²	0	-	0 m²	0	-
Partitions	29 m²	386	-	29 m²	0	-
Ceiling	1 m²	8	-	1 m²	0	-
Overhead Lighting	120 W	102	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	450 W	420	-	0	0	-
People	2	117	120	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	-	1165	120	-	15	0

TABLE 1.8.B. ENVELOPE LOADS FOR SPACE " SUB1-TERAPIA 05 " IN ZONE " Zone 1 "						
	Area (m²)	U-Value (W/(m²·°K))	Shade Coeff.	COOLING	COOLING	HEATING
				TRANS	SOLAR	TRANS
				(W)	(W)	(W)
N EXPOSURE						
WALL	6	2,405	-	133	-	15



TABLE 1.9.A. COMPONENT LOADS FOR SPACE " SUB1-TERAPIA 06 " IN ZONE " Zone 1 "						
	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jan 1400 COOLING OA DB / WB 32,0 °C / 25,5 °C OCCUPIED T-STAT 22,0 °C			HEATING DATA AT DES HTG HEATING OA DB / WB 20,0 °C / 13,8 °C OCCUPIED T-STAT 21,1 °C		
		Sensible	Latent		Sensible	Latent
SPACE LOADS	Details	(W)	(W)	Details	(W)	(W)
Window & Skylight Solar Loads	3 m²	565	-	3 m²	-	-
Wall Transmission	16 m²	423	-	16 m²	42	-
Roof Transmission	0 m²	0	-	0 m²	0	-
Window Transmission	3 m²	158	-	3 m²	20	-
Skylight Transmission	0 m²	0	-	0 m²	0	-
Door Loads	0 m²	0	-	0 m²	0	-
Floor Transmission	0 m²	0	-	0 m²	0	-
Partitions	19 m²	253	-	19 m²	0	-
Ceiling	1 m²	7	-	1 m²	0	-
Overhead Lighting	160 W	129	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	250 W	228	-	0	0	-
People	2	108	120	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	-	1872	120	-	62	0

TABLE 1.9.B. ENVELOPE LOADS FOR SPACE " SUB1-TERAPIA 06 " IN ZONE " Zone 1 "						
	Area	U-Value	Shade	COOLING	COOLING	HEATING
	(m²)	(W/(m²·°K))	Coeff.	TRANS	SOLAR	TRANS
				(W)	(W)	(W)
N EXPOSURE						
WALL	6	2,405	-	109	-	15
E EXPOSURE						
WALL	10	2,405	-	314	-	27
WINDOW 1	3	5,870	1,000	158	565	20

TABLE 1.10.A. COMPONENT LOADS FOR SPACE " SUB1-TERAPIA 07 " IN ZONE " Zone 1 "						
	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Dec 1600			HEATING DATA AT DES HTG		
	COOLING OA DB / WB 31,5 °C / 25,5 °C			HEATING OA DB / WB 20,0 °C / 13,8 °C		
	OCCUPIED T-STAT 22,0 °C			OCCUPIED T-STAT 21,1 °C		
		Sensible	Latent		Sensible	Latent
SPACE LOADS	Details	(W)	(W)	Details	(W)	(W)
Window & Skylight Solar Loads	2 m²	279	-	2 m²	-	-
Wall Transmission	10 m²	270	-	10 m²	25	-
Roof Transmission	0 m²	0	-	0 m²	0	-
Window Transmission	2 m²	84	-	2 m²	11	-
Skylight Transmission	0 m²	0	-	0 m²	0	-
Door Loads	0 m²	0	-	0 m²	0	-
Floor Transmission	0 m²	0	-	0 m²	0	-
Partitions	26 m²	338	-	26 m²	0	-
Ceiling	1 m²	7	-	1 m²	0	-
Overhead Lighting	165 W	137	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	450 W	416	-	0	0	-
People	2	113	120	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	-	1643	120	-	36	0

TABLE 1.10.B. ENVELOPE LOADS FOR SPACE " SUB1-TERAPIA 07 " IN ZONE " Zone 1 "						
	Area (m²)	U-Value (W/(m²·°K))	Shade Coeff.	COOLING	COOLING	HEATING
				TRANS	SOLAR	TRANS
				(W)	(W)	(W)
S EXPOSURE						
WALL	10	2,405	-	270	-	25
WINDOW 1	2	4,900	0,800	84	279	11

ZONE: Zone 1									
DESIGN MONTH: DECEMBER									
Hour	OA TEMP (°C)	ZONE TEMP (°C)	RH (%)	ZONE AIRFLOW (L/s)	ZONE SENSIBLE LOAD (W)	ZONE COND (W)	TERMINAL COOLING COIL (W)	TERMINAL HEATING COIL (W)	ZONE HEATING UNIT (W)
0000	26,7	28,4	-	0,0	7429,2	0,0	0,0	0,0	0,0
0100	26,4	28,2	-	0,0	7025,7	0,0	0,0	0,0	0,0
0200	26,1	28,1	-	0,0	6635,3	0,0	0,0	0,0	0,0
0300	25,9	28,0	-	0,0	6280,8	0,0	0,0	0,0	0,0
0400	25,7	27,9	-	0,0	5962,7	0,0	0,0	0,0	0,0
0500	25,7	27,9	-	0,0	5841,1	0,0	0,0	0,0	0,0
0600	25,8	28,3	-	0,0	6465,0	0,0	0,0	0,0	0,0
0700	26,1	28,5	-	0,0	6823,8	0,0	0,0	0,0	0,0
0800	26,6	23,0	50	1340,2	12370,5	17091,0	23260,5	0,0	0,0
0900	27,4	22,9	50	1340,2	12873,3	17049,8	23435,0	0,0	0,0
1000	28,3	23,0	51	1340,2	13303,3	16919,3	23361,2	0,0	0,0
1100	29,3	23,0	50	1340,2	13784,3	17084,8	23783,8	0,0	0,0
1200	30,3	22,9	49	1340,2	14345,9	17582,1	24571,5	0,0	0,0
1300	31,0	22,9	49	1340,2	14799,6	17658,4	24789,6	0,0	0,0
1400	31,5	22,9	49	1340,2	15005,0	17640,8	24848,6	0,0	0,0
1500	31,7	22,9	49	1340,2	15186,2	17617,9	24852,9	0,0	0,0
1600	31,5	22,9	49	1340,2	15313,3	17577,7	24773,7	0,0	0,0
1700	31,1	22,8	49	1340,2	15294,5	17478,8	24595,4	0,0	0,0
1800	30,4	22,8	50	1340,2	15112,8	17067,4	24005,5	0,0	0,0
1900	29,6	30,9	-	0,0	14821,5	0,0	0,0	0,0	0,0
2000	28,8	31,3	-	0,0	14459,6	0,0	0,0	0,0	0,0
2100	28,2	28,8	-	0,0	8885,9	0,0	0,0	0,0	0,0
2200	27,6	28,6	-	0,0	8353,2	0,0	0,0	0,0	0,0
2300	27,1	28,5	-	0,0	7865,9	0,0	0,0	0,0	0,0

ZONE: Zone 1									
DESIGN MONTH: JANUARY									
Hour	OA TEMP (°C)	ZONE TEMP (°C)	RH (%)	ZONE AIRFLOW (L/s)	ZONE SENSIBLE LOAD (W)	ZONE COND (W)	TERMINAL COOLING COIL (W)	TERMINAL HEATING COIL (W)	ZONE HEATING UNIT (W)
0000	27,3	28,6	-	0,0	7808,5	0,0	0,0	0,0	0,0
0100	27,0	28,5	-	0,0	7407,1	0,0	0,0	0,0	0,0
0200	26,7	28,4	-	0,0	7018,7	0,0	0,0	0,0	0,0
0300	26,5	28,3	-	0,0	6666,2	0,0	0,0	0,0	0,0
0400	26,3	28,2	-	0,0	6349,9	0,0	0,0	0,0	0,0
0500	26,2	28,2	-	0,0	6092,4	0,0	0,0	0,0	0,0
0600	26,3	28,5	-	0,0	6696,5	0,0	0,0	0,0	0,0
0700	26,6	28,8	-	0,0	7110,1	0,0	0,0	0,0	0,0
0800	27,2	23,0	49	1340,2	12681,7	17720,7	24004,2	0,0	0,0
0900	28,0	22,9	49	1340,2	13210,7	17595,2	24050,3	0,0	0,0
1000	28,9	22,9	49	1340,2	13660,1	17634,9	24272,3	0,0	0,0
1100	29,9	22,9	49	1340,2	14112,4	17691,1	24516,2	0,0	0,0
1200	30,8	23,0	49	1340,2	14672,1	17806,3	24770,1	0,0	0,0
1300	31,6	23,0	49	1340,2	14949,4	17810,4	24918,6	0,0	0,0
1400	32,0	23,0	49	1340,2	15147,8	17786,2	24977,9	0,0	0,0
1500	32,2	23,0	49	1340,2	15320,5	17757,2	24977,5	0,0	0,0
1600	32,0	23,0	49	1340,2	15450,4	17716,0	24897,8	0,0	0,0
1700	31,6	22,9	49	1340,2	15465,4	17629,9	24732,6	0,0	0,0
1800	31,0	22,8	49	1340,2	15447,4	17532,7	24516,8	0,0	0,0
1900	30,2	31,1	-	0,0	15173,6	0,0	0,0	0,0	0,0
2000	29,4	31,5	-	0,0	14824,0	0,0	0,0	0,0	0,0
2100	28,7	29,1	-	0,0	9256,6	0,0	0,0	0,0	0,0
2200	28,1	28,9	-	0,0	8727,6	0,0	0,0	0,0	0,0
2300	27,7	28,8	-	0,0	8242,9	0,0	0,0	0,0	0,0

ZONE: Zone 1									
DESIGN MONTH: FEBRUARY									
Hour	OA TEMP (°C)	ZONE TEMP (°C)	RH (%)	ZONE AIRFLOW (L/s)	ZONE SENSIBLE LOAD (W)	ZONE COND (W)	TERMINAL COOLING COIL (W)	TERMINAL HEATING COIL (W)	ZONE HEATING UNIT (W)
0000	27,3	28,5	-	0,0	7667,4	0,0	0,0	0,0	0,0
0100	27,0	28,4	-	0,0	7278,2	0,0	0,0	0,0	0,0
0200	26,7	28,3	-	0,0	6900,7	0,0	0,0	0,0	0,0
0300	26,5	28,2	-	0,0	6557,9	0,0	0,0	0,0	0,0
0400	26,3	28,1	-	0,0	6250,4	0,0	0,0	0,0	0,0
0500	26,2	28,1	-	0,0	6000,8	0,0	0,0	0,0	0,0
0600	26,3	28,3	-	0,0	6492,8	0,0	0,0	0,0	0,0
0700	26,6	28,6	-	0,0	6942,4	0,0	0,0	0,0	0,0
0800	27,2	22,9	49	1340,2	12518,3	17590,1	23886,2	0,0	0,0
0900	28,0	23,0	50	1340,2	13048,5	17151,2	23495,0	0,0	0,0
1000	28,9	22,8	49	1340,2	13494,5	17517,9	24148,8	0,0	0,0
1100	29,9	22,9	49	1340,2	13924,9	17560,1	24394,9	0,0	0,0
1200	30,8	22,9	49	1340,2	14469,9	17668,7	24645,8	0,0	0,0
1300	31,6	22,9	49	1340,2	14733,2	17666,5	24788,1	0,0	0,0
1400	32,0	22,9	49	1340,2	14912,3	17633,5	24839,1	0,0	0,0
1500	32,2	22,9	49	1340,2	15065,1	17595,2	24830,2	0,0	0,0
1600	32,0	22,9	49	1340,2	15180,5	17546,9	24744,4	0,0	0,0
1700	31,6	23,0	50	1340,2	15209,0	17135,8	24146,1	0,0	0,0
1800	31,0	23,0	50	1340,2	15223,8	16988,1	23845,6	0,0	0,0
1900	30,2	31,0	-	0,0	14957,8	0,0	0,0	0,0	0,0
2000	29,4	31,4	-	0,0	14621,4	0,0	0,0	0,0	0,0
2100	28,7	28,9	-	0,0	9070,3	0,0	0,0	0,0	0,0
2200	28,1	28,7	-	0,0	8557,6	0,0	0,0	0,0	0,0
2300	27,7	28,6	-	0,0	8088,1	0,0	0,0	0,0	0,0

## January DESIGN COOLING DAY, 1400

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°C)	Specific Humidity (kg/kg)	Airflow (L/s)	CO2 Level (ppm)	Sensible Heat (W)	Latent Heat (W)
Ventilation Air	Inlet	32,0	0,01794	115	400	1632	4168
Vent - Return Mixing	Outlet	-17,8	0,00000	0	0	-	-
Ventilation Fan	Outlet	-17,8	0,00000	0	0	0	-
Zone Air	-	23,0	0,00849	1340	97	17786	1382
Return Plenum	Outlet	-17,8	0,00849	1340	97	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1,207; At site altitude = 1,206 W/(L/s-K)

Air Density x Heat of Vaporization x Conversion Factor: At sea level = 2947,6; At site altitude = 2945,5

W/(L/s)

Site Altitude = 5,8 m

TABLE 2: ZONE DATA

Component	Location	Dry-Bulb Temp (°C)	Specific Humidity (kg/kg)	Airflow (L/s)	CO2 Level (ppm)	Sensible Heat (W)	Latent Heat (W)
<b>Zone 1 (Cooling)</b>							
Ventilation Air	-	-	-	115	-	-	-
Cooling Coil Inlet	-	24,0	0,00955	1340	0	-	-
Cooling Coil Outlet	-	12,0	0,00814	1340	0	19418	5560
Heating Coil Inlet	-	12,0	0,00814	1340	0	-	-
Heating Coil Outlet	-	12,0	0,00814	1340	0	0	-
Zone Air	-	23,0	0,00849	1340	0	17786	-

## WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°C)	Specific Humidity (kg/kg)	Airflow (L/s)	CO2 Level (ppm)	Sensible Heat (W)	Latent Heat (W)
Ventilation Air	Inlet	20,0	0,00726	115	400	-114	0
Vent - Return Mixing	Outlet	-17,8	0,00000	0	0	-	-
Ventilation Fan	Outlet	-17,8	0,00000	0	0	0	-
Zone Air	-	20,6	0,00726	1340	0	82	0
Return Plenum	Outlet	-17,8	0,00726	1340	0	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1,207; At site altitude = 1,206 W/(L/s-K)

Air Density x Heat of Vaporization x Conversion Factor: At sea level = 2947,6; At site altitude = 2945,5 W/(L/s)

Site Altitude = 5,8 m

TABLE 2: ZONE DATA

Component	Location	Dry-Bulb Temp (°C)	Specific Humidity (kg/kg)	Airflow (L/s)	CO2 Level (ppm)	Sensible Heat (W)	Latent Heat (W)
Zone 1 ( Deadband )							
Ventilation Air	-	-	-	115	-	-	-
Cooling Coil Inlet	-	20,6	0,00726	1340	0	-	-
Cooling Coil Outlet	-	20,6	0,00726	1340	0	0	0
Heating Coil Inlet	-	20,6	0,00726	1340	0	-	-
Heating Coil Outlet	-	20,6	0,00726	1340	0	0	-
Zone Air	-	20,6	0,00726	1340	0	82	-

#### Air System Information

Air System Name ..... SUBSOLO 02  
Equipment Class ..... TERM  
Air System Type ..... SPLT-FC

Number of zones ..... 1  
Floor Area ..... 51,7 m<sup>2</sup>  
Location ..... Salvador, Brazil

#### Sizing Calculation Information

Zone and Space Sizing Method:

Zone L/s .... Sum of space airflow rates  
Space L/s . Individual peak space loads

Calculation Months ..... Jan to Dec  
Sizing Data ..... Calculated

#### Air System Information

Air System Name ..... SUBSOLO 02  
Equipment Class ..... TERM  
Air System Type ..... SPLT-FC

Number of zones ..... 1  
Floor Area ..... 51,7 m<sup>2</sup>  
Location ..... Salvador, Brazil

#### Sizing Calculation Information

Zone and Space Sizing Method:

Zone L/s .... Sum of space airflow rates  
Space L/s . Individual peak space loads

Calculation Months ..... Jan to Dec  
Sizing Data ..... Calculated

#### Zone Sizing Data

Zone Name	Maximum Cooling Sensible (kW)	Design Air Flow (L/s)	Minimum Air Flow (L/s)	Time of Peak Load	Maximum Heating Load (kW)	Zone Floor Area (m <sup>2</sup> )	Zone L/(s-m <sup>2</sup> )
Zone 1	6,2	523	523	Dec 1700	0,1	51,7	10,12

#### Terminal Unit Sizing Data - Cooling

Zone Name	Total Coil Load (kW)	Sens Coil Load (kW)	Coil Entering DB / WB (°C)	Coil Leaving DB / WB (°C)	Water Flow @ 5,6 °K (L/s)	Time of Peak Load
Zone 1	9,7	7,6	24,0 / 17,2	12,0 / 11,4	-	Dec 1500

#### Terminal Unit Sizing Data - Heating, Fan, Ventilation

Zone Name	Heating Coil Load (kW)	Heating Coil Ent/Lvg DB (°C)	Htg Coil Water Flow @ 11,1 °K (L/s)	Fan Design AirFlow (L/s)	Fan Motor (BHP)	Fan Motor (kW)	OA Vent Design AirFlow (L/s)
Zone 1	0,0	-18,3 / -18,3	0,00	523	0,000	0,000	56

#### Space Loads and Airflows



Zone Name / Space Name	Mult. .	Cooling Sensible (kW)	Time of Load	Air Flow (L/s)	Heating Load (kW)	Floor Area (m²)	Space L/(s·m²)
<b>Zone 1</b>							
SUB2-COORD. DEPARTAM. 02	1	1,4	Jan 1800	119	0,0	8,8	13,57
SUB2-COORD. DEPARTAM.01	1	1,4	Dec 1600	118	0,0	8,6	13,67
SUB2-SALA SUPERVISÃO	1	1,9	Dec 1600	156	0,0	16,2	9,66
SUB2-SECRETARIA DEPARTAM	1	1,6	Jan 1800	130	0,0	18,1	7,17

### 1. Summary

Ventilation Sizing Method .... Sum of Space OA Airflows

### 2. Space Ventilation Analysis Table

Zone Name / Space Name	Mult. .	Floor Area (m²)	Maximum Occupants	Maximum Supply Air (L/s)	Required Outdoor Air (L/s/person)	Required Outdoor Air (L/(s·m²))	Required Outdoor Air (L/s)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (L/s)
<b>Zone 1</b>									
SUB2-COORD. DEPARTAM. 02	1	8,8	2,0	119,5	5,00		0,0	0,0	10,0
SUB2-COORD. DEPARTAM.01	1	8,6	2,0	117,6	5,00		0,0	0,0	10,0
SUB2-SALA SUPERVISÃO	1	16,2	2,0	156,5	5,00		0,0	0,0	10,0
SUB2-SECRETARIA DEPARTAM	1	18,1	2,0	129,7	5,00		0,0	0,0	10,0
<b>Totals (incl. Space Multipliers)</b>				<b>523,3</b>					<b>40,0</b>

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Dec 1500 COOLING OA DB / WB 31,7 °C / 25,6 °C			HEATING DATA AT DES HTG HEATING OA DB / WB 20,0 °C / 13,8 °C		
ZONE LOADS	Details	Sensible (W)	Latent (W)	Details	Sensible (W)	Latent (W)
Window & Skylight Solar Loads	4 m²	632	-	4 m²	-	-
Wall Transmission	45 m²	1187	-	45 m²	121	-
Roof Transmission	0 m²	0	-	0 m²	0	-
Window Transmission	4 m²	185	-	4 m²	24	-
Skylight Transmission	0 m²	0	-	0 m²	0	-
Door Loads	0 m²	0	-	0 m²	0	-
Floor Transmission	0 m²	0	-	0 m²	0	-
Partitions	99 m²	1285	-	99 m²	0	-
Ceiling	2 m²	15	-	2 m²	0	-
Overhead Lighting	827 W	676	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	1800 W	1653	-	0	0	-
People	8	443	481	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	-	6074	481	-	145	0
Zone Conditioning	-	6993	481	-	-28	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Exhaust Fan Load	0 L/s	0	-	0 L/s	0	-
Ventilation Load	40 L/s	583	1613	40 L/s	39	0
Ventilation Fan Load	0 L/s	0	-	0 L/s	0	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	-	7576	2094	-	11	0
Terminal Unit Cooling	-	7576	2098	-	0	0
Terminal Unit Heating	-	0	-	-	0	-
>> Total Conditioning	-	7576	2098	-	0	0
Key:	Positive values are clg loads Negative values are htg loads			Positive values are htg loads Negative values are clg loads		

Zone 1	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Dec 1700 COOLING OA DB / WB 31,1 °C / 25,4 °C			HEATING DATA AT DES HTG HEATING OA DB / WB 20,0 °C / 13,8 °C		
	OCCUPIED T-STAT 22,0 °C			OCCUPIED T-STAT 21,1 °C		
ZONE LOADS	Details	Sensible (W)	Latent (W)	Details	Sensible (W)	Latent (W)
Window & Skylight Solar Loads	4 m²	513	-	4 m²	-	-
Wall Transmission	45 m²	1364	-	45 m²	121	-
Roof Transmission	0 m²	0	-	0 m²	0	-
Window Transmission	4 m²	179	-	4 m²	24	-
Skylight Transmission	0 m²	0	-	0 m²	0	-
Door Loads	0 m²	0	-	0 m²	0	-
Floor Transmission	0 m²	0	-	0 m²	0	-
Partitions	99 m²	1302	-	99 m²	0	-
Ceiling	2 m²	15	-	2 m²	0	-
Overhead Lighting	827 W	695	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	1800 W	1672	-	0	0	-
People	8	460	481	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	-	6199	481	-	145	0

TABLE 1.1.A. COMPONENT LOADS FOR SPACE " SUB2-COORD. DEPARTAM. 02 " IN ZONE " Zone 1 "						
	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jan 1800 COOLING OA DB / WB 31,0 °C / 25,2 °C OCCUPIED T-STAT 22,0 °C			HEATING DATA AT DES HTG HEATING OA DB / WB 20,0 °C / 13,8 °C OCCUPIED T-STAT 21,1 °C		
		Sensible (W)	Latent (W)		Sensible (W)	Latent (W)
SPACE LOADS	Details			Details		
Window & Skylight Solar Loads	1 m²	82	-	1 m²	-	-
Wall Transmission	14 m²	463	-	14 m²	37	-
Roof Transmission	0 m²	0	-	0 m²	0	-
Window Transmission	1 m²	42	-	1 m²	5	-
Skylight Transmission	0 m²	0	-	0 m²	0	-
Door Loads	0 m²	0	-	0 m²	0	-
Floor Transmission	0 m²	0	-	0 m²	0	-
Partitions	15 m²	198	-	15 m²	0	-
Ceiling	0 m²	0	-	0 m²	0	-
Overhead Lighting	141 W	120	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	450 W	420	-	0	0	-
People	2	117	120	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	-	1441	120	-	43	0

TABLE 1.1.B. ENVELOPE LOADS FOR SPACE " SUB2-COORD. DEPARTAM. 02 " IN ZONE " Zone 1 "						
				COOLING	COOLING	HEATING
	Area	U-Value	Shade	TRANS	SOLAR	TRANS
	(m²)	(W/(m²·°K))	Coeff.	(W)	(W)	(W)
S EXPOSURE						
WALL	6	2,405	-	180	-	16
WINDOW 1	1	4,900	0,800	42	82	5
W EXPOSURE						
WALL	8	2,405	-	283	-	21

TABLE 1.2.A. COMPONENT LOADS FOR SPACE " SUB2-COORD. DEPARTAM.01 " IN ZONE " Zone 1 "						
	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Dec 1600 COOLING OA DB / WB 31,5 °C / 25,5 °C OCCUPIED T-STAT 22,0 °C			HEATING DATA AT DES HTG HEATING OA DB / WB 20,0 °C / 13,8 °C OCCUPIED T-STAT 21,1 °C		
		Sensible (W)	Latent (W)		Sensible (W)	Latent (W)
SPACE LOADS	Details			Details		
Window & Skylight Solar Loads	1 m²	139	-	1 m²	-	-
Wall Transmission	14 m²	401	-	14 m²	37	-
Roof Transmission	0 m²	0	-	0 m²	0	-
Window Transmission	1 m²	42	-	1 m²	5	-
Skylight Transmission	0 m²	0	-	0 m²	0	-
Door Loads	0 m²	0	-	0 m²	0	-
Floor Transmission	0 m²	0	-	0 m²	0	-
Partitions	15 m²	194	-	15 m²	0	-
Ceiling	0 m²	0	-	0 m²	0	-
Overhead Lighting	138 W	114	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	450 W	416	-	0	0	-
People	2	113	120	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	-	1419	120	-	43	0

TABLE 1.2.B. ENVELOPE LOADS FOR SPACE " SUB2-COORD. DEPARTAM.01 " IN ZONE " Zone 1 "						
	Area (m²)	U-Value (W/(m²·°K))	Shade Coeff.	COOLING TRANS (W)	COOLING SOLAR (W)	HEATING TRANS (W)
S EXPOSURE						
WALL	6	2,405	-	171	-	16
WINDOW 1	1	4,900	0,800	42	139	5
E EXPOSURE						
WALL	8	2,405	-	231	-	21

TABLE 1.3.A. COMPONENT LOADS FOR SPACE " SUB2-SALA SUPERVISÃO " IN ZONE " Zone 1 "						
	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Dec 1600 COOLING OA DB / WB 31,5 °C / 25,5 °C OCCUPIED T-STAT 22,0 °C			HEATING DATA AT DES HTG HEATING OA DB / WB 20,0 °C / 13,8 °C OCCUPIED T-STAT 21,1 °C		
		Sensible	Latent		Sensible	Latent
SPACE LOADS	Details	(W)	(W)	Details	(W)	(W)
Window & Skylight Solar Loads	2 m²	348	-	2 m²	-	-
Wall Transmission	10 m²	279	-	10 m²	26	-
Roof Transmission	0 m²	0	-	0 m²	0	-
Window Transmission	2 m²	100	-	2 m²	13	-
Skylight Transmission	0 m²	0	-	0 m²	0	-
Door Loads	0 m²	0	-	0 m²	0	-
Floor Transmission	0 m²	0	-	0 m²	0	-
Partitions	31 m²	409	-	31 m²	0	-
Ceiling	1 m²	7	-	1 m²	0	-
Overhead Lighting	259 W	215	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	450 W	416	-	0	0	-
People	2	113	120	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	-	1888	120	-	39	0

TABLE 1.3.B. ENVELOPE LOADS FOR SPACE " SUB2-SALA SUPERVISÃO " IN ZONE " Zone 1 "						
				COOLING	COOLING	HEATING
	Area	U-Value	Shade	TRANS	SOLAR	TRANS
	(m²)	(W/(m²·°K))	Coeff.	(W)	(W)	(W)
S EXPOSURE						
WALL	10	2,405	-	279	-	26
WINDOW 1	2	5,870	1,000	100	348	13

TABLE 1.4.A. COMPONENT LOADS FOR SPACE " SUB2-SECRETARIA DEPARTAM " IN ZONE " Zone 1 "						
	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jan 1800 COOLING OA DB / WB 31,0 °C / 25,2 °C OCCUPIED T-STAT 22,0 °C			HEATING DATA AT DES HTG HEATING OA DB / WB 20,0 °C / 13,8 °C OCCUPIED T-STAT 21,1 °C		
		Sensible	Latent		Sensible	Latent
SPACE LOADS	Details	(W)	(W)	Details	(W)	(W)
Window & Skylight Solar Loads	0 m²	0	-	0 m²	-	-
Wall Transmission	8 m²	266	-	8 m²	20	-
Roof Transmission	0 m²	0	-	0 m²	0	-
Window Transmission	0 m²	0	-	0 m²	0	-
Skylight Transmission	0 m²	0	-	0 m²	0	-
Door Loads	0 m²	0	-	0 m²	0	-
Floor Transmission	0 m²	0	-	0 m²	0	-
Partitions	38 m²	509	-	38 m²	0	-
Ceiling	1 m²	8	-	1 m²	0	-
Overhead Lighting	290 W	246	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	450 W	420	-	0	0	-
People	2	117	120	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	-	1565	120	-	20	0

TABLE 1.4.B. ENVELOPE LOADS FOR SPACE " SUB2-SECRETARIA DEPARTAM " IN ZONE " Zone 1 "						
				COOLING	COOLING	HEATING
	Area	U-Value	Shade	TRANS	SOLAR	TRANS
	(m²)	(W/(m²·°K))	Coeff.	(W)	(W)	(W)
W EXPOSURE						
WALL	8	2,405	-	266	-	20

ZONE: Zone 1 DESIGN MONTH: DECEMBER									
Hour	OA TEMP (°C)	ZONE TEMP (°C)	RH (%)	ZONE AIRFLOW (L/s)	ZONE SENSIBLE LOAD (W)	ZONE COND (W)	TERMINAL COOLING COIL (W)	TERMINAL HEATING COIL (W)	ZONE HEATING UNIT (W)
0000	26,7	28,5	-	0,0	3036,0	0,0	0,0	0,0	0,0
0100	26,4	28,4	-	0,0	2865,5	0,0	0,0	0,0	0,0
0200	26,1	28,3	-	0,0	2702,0	0,0	0,0	0,0	0,0
0300	25,9	28,2	-	0,0	2553,1	0,0	0,0	0,0	0,0
0400	25,7	28,1	-	0,0	2418,7	0,0	0,0	0,0	0,0
0500	25,7	28,1	-	0,0	2334,1	0,0	0,0	0,0	0,0
0600	25,8	28,2	-	0,0	2398,0	0,0	0,0	0,0	0,0
0700	26,1	28,3	-	0,0	2429,5	0,0	0,0	0,0	0,0
0800	26,6	22,9	50	523,3	4652,0	6712,9	9010,6	0,0	0,0
0900	27,4	22,9	50	523,3	4854,7	6658,4	9014,6	0,0	0,0
1000	28,3	22,9	50	523,3	5084,3	6703,8	9132,5	0,0	0,0
1100	29,3	22,9	49	523,3	5332,7	6858,8	9388,4	0,0	0,0
1200	30,3	22,9	49	523,3	5573,5	6908,4	9498,9	0,0	0,0
1300	31,0	23,0	48	523,3	5786,1	6952,5	9597,7	0,0	0,0
1400	31,5	23,0	48	523,3	5928,7	6970,8	9643,5	0,0	0,0
1500	31,7	23,1	48	523,3	6074,4	6993,3	9674,1	0,0	0,0
1600	31,5	23,1	48	523,3	6195,9	7009,0	9672,2	0,0	0,0
1700	31,1	23,1	48	523,3	6199,0	6976,5	9606,5	0,0	0,0
1800	30,4	23,0	48	523,3	6156,0	6924,6	9509,5	0,0	0,0
1900	29,6	31,1	-	0,0	6067,5	0,0	0,0	0,0	0,0
2000	28,8	31,5	-	0,0	5931,6	0,0	0,0	0,0	0,0
2100	28,2	29,0	-	0,0	3640,6	0,0	0,0	0,0	0,0
2200	27,6	28,8	-	0,0	3422,3	0,0	0,0	0,0	0,0
2300	27,1	28,7	-	0,0	3219,8	0,0	0,0	0,0	0,0



ZONE: Zone 1									
DESIGN MONTH: JANUARY									
Hour	OA TEMP (°C)	ZONE TEMP (°C)	RH (%)	ZONE AIRFLOW (L/s)	ZONE SENSIBLE LOAD (W)	ZONE COND (W)	TERMINAL COOLING COIL (W)	TERMINAL HEATING COIL (W)	ZONE HEATING UNIT (W)
0000	27,3	28,7	-	0,0	3125,0	0,0	0,0	0,0	0,0
0100	27,0	28,6	-	0,0	2959,7	0,0	0,0	0,0	0,0
0200	26,7	28,5	-	0,0	2800,8	0,0	0,0	0,0	0,0
0300	26,5	28,4	-	0,0	2656,1	0,0	0,0	0,0	0,0
0400	26,3	28,3	-	0,0	2525,7	0,0	0,0	0,0	0,0
0500	26,2	28,2	-	0,0	2416,8	0,0	0,0	0,0	0,0
0600	26,3	28,3	-	0,0	2459,1	0,0	0,0	0,0	0,0
0700	26,6	28,4	-	0,0	2482,5	0,0	0,0	0,0	0,0
0800	27,2	22,9	49	523,3	4691,8	6865,1	9197,5	0,0	0,0
0900	28,0	22,9	50	523,3	4883,8	6688,9	9047,1	0,0	0,0
1000	28,9	22,8	49	523,3	5106,1	6838,5	9299,6	0,0	0,0
1100	29,9	22,9	49	523,3	5348,9	6882,1	9408,4	0,0	0,0
1200	30,8	23,0	48	523,3	5584,3	6930,7	9518,9	0,0	0,0
1300	31,6	23,0	48	523,3	5729,3	6944,9	9587,5	0,0	0,0
1400	32,0	23,0	48	523,3	5861,0	6956,5	9629,4	0,0	0,0
1500	32,2	23,0	48	523,3	5998,6	6974,1	9655,8	0,0	0,0
1600	32,0	23,1	48	523,3	6124,4	6990,0	9654,7	0,0	0,0
1700	31,6	23,0	48	523,3	6169,6	6974,3	9606,1	0,0	0,0
1800	31,0	23,0	48	523,3	6183,7	6946,6	9531,9	0,0	0,0
1900	30,2	31,2	-	0,0	6112,9	0,0	0,0	0,0	0,0
2000	29,4	31,6	-	0,0	5991,4	0,0	0,0	0,0	0,0
2100	28,7	29,1	-	0,0	3710,3	0,0	0,0	0,0	0,0
2200	28,1	28,9	-	0,0	3499,5	0,0	0,0	0,0	0,0
2300	27,7	28,8	-	0,0	3303,3	0,0	0,0	0,0	0,0

ZONE: Zone 1 DESIGN MONTH: FEBRUARY									
Hour	OA TEMP (°C)	ZONE TEMP (°C)	RH (%)	ZONE AIRFLOW (L/s)	ZONE SENSIBLE LOAD (W)	ZONE COND (W)	TERMINAL COOLING COIL (W)	TERMINAL HEATING COIL (W)	ZONE HEATING UNIT (W)
0000	27,3	28,3	-	0,0	2950,2	0,0	0,0	0,0	0,0
0100	27,0	28,2	-	0,0	2799,8	0,0	0,0	0,0	0,0
0200	26,7	28,1	-	0,0	2654,3	0,0	0,0	0,0	0,0
0300	26,5	28,0	-	0,0	2521,6	0,0	0,0	0,0	0,0
0400	26,3	27,9	-	0,0	2402,0	0,0	0,0	0,0	0,0
0500	26,2	27,9	-	0,0	2302,9	0,0	0,0	0,0	0,0
0600	26,3	27,9	-	0,0	2284,2	0,0	0,0	0,0	0,0
0700	26,6	27,9	-	0,0	2284,1	0,0	0,0	0,0	0,0
0800	27,2	22,8	50	523,3	4479,3	6566,6	8869,5	0,0	0,0
0900	28,0	22,7	51	523,3	4662,0	6458,2	8802,9	0,0	0,0
1000	28,9	22,7	51	523,3	4875,7	6548,5	8994,3	0,0	0,0
1100	29,9	22,8	50	523,3	5106,9	6568,0	9057,5	0,0	0,0
1200	30,8	22,7	49	523,3	5327,6	6754,5	9360,3	0,0	0,0
1300	31,6	22,9	50	523,3	5453,3	6621,1	9224,0	0,0	0,0
1400	32,0	22,9	50	523,3	5559,0	6634,2	9276,7	0,0	0,0
1500	32,2	22,9	50	523,3	5670,0	6655,2	9314,8	0,0	0,0
1600	32,0	23,0	50	523,3	5780,5	6585,0	9199,0	0,0	0,0
1700	31,6	22,9	50	523,3	5850,4	6679,6	9301,3	0,0	0,0
1800	31,0	22,9	50	523,3	5901,5	6647,1	9211,4	0,0	0,0
1900	30,2	30,7	-	0,0	5843,4	0,0	0,0	0,0	0,0
2000	29,4	31,1	-	0,0	5740,1	0,0	0,0	0,0	0,0
2100	28,7	28,7	-	0,0	3479,7	0,0	0,0	0,0	0,0
2200	28,1	28,5	-	0,0	3289,2	0,0	0,0	0,0	0,0
2300	27,7	28,4	-	0,0	3111,6	0,0	0,0	0,0	0,0

## December DESIGN COOLING DAY, 1500

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°C)	Specific Humidity (kg/kg)	Airflow (L/s)	CO2 Level (ppm)	Sensible Heat (W)	Latent Heat (W)
Ventilation Air	Inlet	31,7	0,01818	40	400	583	1613
Vent - Return Mixing	Outlet	-17,8	0,00000	0	0	-	-
Ventilation Fan	Outlet	-17,8	0,00000	0	0	0	-
Zone Air	-	23,1	0,00845	523	87	6993	481
Return Plenum	Outlet	-17,8	0,00845	523	87	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1,207; At site altitude = 1,206 W/(L/s-K)

Air Density x Heat of Vaporization x Conversion Factor: At sea level = 2947,6; At site altitude = 2945,5

W/(L/s)

Site Altitude = 5,8 m

TABLE 2: ZONE DATA

Component	Location	Dry-Bulb Temp (°C)	Specific Humidity (kg/kg)	Airflow (L/s)	CO2 Level (ppm)	Sensible Heat (W)	Latent Heat (W)
<b>Zone 1 (Cooling)</b>							
Ventilation Air	-	-	-	40	-	-	-
Cooling Coil Inlet	-	24,0	0,00950	523	0	-	-
Cooling Coil Outlet	-	12,0	0,00814	523	0	7576	2098
Heating Coil Inlet	-	12,0	0,00814	523	0	-	-
Heating Coil Outlet	-	12,0	0,00814	523	0	0	-
Zone Air	-	23,1	0,00845	523	0	6993	-

## WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°C)	Specific Humidity (kg/kg)	Airflow (L/s)	CO2 Level (ppm)	Sensible Heat (W)	Latent Heat (W)
Ventilation Air	Inlet	20,0	0,00726	40	400	-39	0
Vent - Return Mixing	Outlet	-17,8	0,00000	0	0	-	-
Ventilation Fan	Outlet	-17,8	0,00000	0	0	0	-
Zone Air	-	20,6	0,00726	523	0	28	0
Return Plenum	Outlet	-17,8	0,00726	523	0	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1,207; At site altitude = 1,206 W/(L/s-K)

Air Density x Heat of Vaporization x Conversion Factor: At sea level = 2947,6; At site altitude = 2945,5 W/(L/s)

Site Altitude = 5,8 m

TABLE 2: ZONE DATA

Component	Location	Dry-Bulb Temp (°C)	Specific Humidity (kg/kg)	Airflow (L/s)	CO2 Level (ppm)	Sensible Heat (W)	Latent Heat (W)
<b>Zone 1 (Deadband)</b>							
Ventilation Air	-	-	-	40	-	-	-
Cooling Coil Inlet	-	20,5	0,00726	523	0	-	-
Cooling Coil Outlet	-	20,5	0,00726	523	0	0	0
Heating Coil Inlet	-	20,5	0,00726	523	0	-	-
Heating Coil Outlet	-	20,5	0,00726	523	0	0	-
Zone Air	-	20,6	0,00726	523	0	28	-

## Air System Information

Air System Name ..... TERREO  
Equipment Class ..... TERM  
Air System Type ..... SPLT-FC

Number of zones ..... 1  
Floor Area ..... 102,3 m²  
Location ..... Salvador, Brazil

## Sizing Calculation Information

## Zone and Space Sizing Method:

Zone L/s ..... Sum of space airflow rates  
Space L/s ..... Individual peak space loads

Calculation Months ..... Jan to Dec  
Sizing Data ..... Calculated

### Air System Information

Air System Name ..... TERREO  
Equipment Class ..... TERM  
Air System Type ..... SPLT-FC

Number of zones ..... 1  
Floor Area ..... 102,3 m<sup>2</sup>  
Location ..... Salvador, Brazil

### Sizing Calculation Information

Zone and Space Sizing Method:

Zone L/s ..... Sum of space airflow rates  
Space L/s ..... Individual peak space loads

Calculation Months ..... Jan to Dec  
Sizing Data ..... Calculated

### Zone Sizing Data

Zone Name	Maximum Cooling Sensible (kW)	Design Air Flow (L/s)	Minimum Air Flow (L/s)	Time of Peak Load	Maximum Heating Load (kW)	Zone Floor Area (m <sup>2</sup> )	Zone L/(s-m <sup>2</sup> )
Zone 1	15,8	1342	1342	Jan 1600	0,3	102,3	13,12

### Terminal Unit Sizing Data - Cooling

Zone Name	Total Coil Load (kW)	Sens Coil Load (kW)	Coil Entering DB / WB (°C)	Coil Leaving DB / WB (°C)	Water Flow @ 5,6 °K (L/s)	Time of Peak Load
Zone 1	24,7	19,3	23,9 / 17,2	12,0 / 11,4	-	Jan 1400

### Terminal Unit Sizing Data - Heating, Fan, Ventilation

Zone Name	Heating Coil Load (kW)	Heating Coil Ent/Lvg DB (°C)	Htg Coil Water Flow @ 11,1 °K (L/s)	Fan Design AirFlow (L/s)	Fan Motor (BHP)	Fan Motor (kW)	OA Vent Design AirFlow (L/s)
Zone 1	0,0	-18,3 / -18,3	0,00	1342	0,000	0,000	142

### Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (kW)	Time of Load	Air Flow (L/s)	Heating Load (kW)	Floor Area (m²)	Space L/(s·m²)
<b>Zone 1</b>							
TE-RECEPÇÃO	1	2,6	Apr 1600	211	0,1	12,8	16,52
TE-S.DE EX. AUDIOME. 01	1	1,8	Jan 1500	152	0,0	16,0	9,47
TE-S.DE EX. AUDIOME. 02	1	1,3	Jan 1800	105	0,0	8,3	12,61
TE-S.DE EX. AUDIOME. 03	1	1,3	Jan 1800	111	0,0	9,7	11,41
TE-SALA DE ESPERA	1	2,6	Jan 1800	216	0,1	20,0	10,81
TE-SALA EXAME PEATE	1	1,8	Dec 1600	146	0,0	9,0	16,24
TE-TERAPIA 01	1	1,6	Jan 1500	134	0,0	8,7	15,35
TE-TERAPIA 02	1	1,6	Jan 1500	134	0,0	8,9	15,05
TE-TERAPIA 03	1	1,6	Jan 1500	134	0,0	8,9	15,05

### 1. Summary

Ventilation Sizing Method .... Sum of Space OA Airflows

### 2. Space Ventilation Analysis Table

Zone Name / Space Name	Mult.	Floor Area (m²)	Maximum Occupants	Maximum Supply Air (L/s)	Required Outdoor Air (L/s/person)	Required Outdoor Air (L/(s·m²))	Required Outdoor Air (L/s)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (L/s)
<b>Zone 1</b>									
TE-RECEPÇÃO	1	12,8	5,0	211,5	5,00		0,0	0,0	25,0
TE-S.DE EX. AUDIOME. 01	1	16,0	2,0	151,6	5,00		0,0	0,0	10,0
TE-S.DE EX. AUDIOME. 02	1	8,3	2,0	104,7	5,00		0,0	0,0	10,0
TE-S.DE EX. AUDIOME. 03	1	9,7	2,0	110,7	5,00		0,0	0,0	10,0
TE-SALA DE ESPERA	1	20,0	5,0	216,2	5,00		0,0	0,0	25,0
TE-SALA EXAME PEATE	1	9,0	2,0	146,2	5,00		0,0	0,0	10,0
TE-TERAPIA 01	1	8,7	2,0	133,5	5,00		0,0	0,0	10,0
TE-TERAPIA 02	1	8,9	2,0	133,9	5,00		0,0	0,0	10,0
TE-TERAPIA 03	1	8,9	2,0	133,9	5,00		0,0	0,0	10,0
<b>Totals (incl. Space Multipliers)</b>				<b>1342,2</b>					<b>125,0</b>

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jan 1400 COOLING OA DB / WB 32,0 °C / 25,5 °C			HEATING DATA AT DES HTG HEATING OA DB / WB 20,0 °C / 13,8 °C		
ZONE LOADS	Details	Sensible (W)	Latent (W)	Details	Sensible (W)	Latent (W)
Window & Skylight Solar Loads	11 m²	1691	-	11 m²	-	-
Wall Transmission	86 m²	2379	-	86 m²	231	-
Roof Transmission	0 m²	0	-	0 m²	0	-
Window Transmission	11 m²	578	-	11 m²	72	-
Skylight Transmission	0 m²	0	-	0 m²	0	-
Door Loads	0 m²	0	-	0 m²	0	-
Floor Transmission	102 m²	1343	-	102 m²	0	-
Partitions	256 m²	3357	-	256 m²	0	-
Ceiling	0 m²	0	-	0 m²	0	-
Overhead Lighting	1637 W	1316	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	4050 W	3696	-	0	0	-
People	24	1301	1442	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	-	15661	1442	-	303	0
Zone Conditioning	-	17773	1442	-	-82	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Exhaust Fan Load	0 L/s	0	-	0 L/s	0	-
Ventilation Load	125 L/s	1557	3959	142 L/s	116	0
Ventilation Fan Load	0 L/s	0	-	0 L/s	0	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	-	19330	5401	-	34	0
Terminal Unit Cooling	-	19330	5409	-	0	0
Terminal Unit Heating	-	0	-	-	0	-
>> Total Conditioning	-	19330	5409	-	0	0
Key:	Positive values are clg loads Negative values are htg loads			Positive values are htg loads Negative values are clg loads		

Zone 1	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jan 1600 COOLING OA DB / WB 32,0 °C / 25,5 °C			HEATING DATA AT DES HTG HEATING OA DB / WB 20,0 °C / 13,8 °C		
	OCCUPIED T-STAT 22,0 °C			OCCUPIED T-STAT 21,1 °C		
ZONE LOADS	Details	Sensible (W)	Latent (W)	Details	Sensible (W)	Latent (W)
Window & Skylight Solar Loads	11 m²	1527	-	11 m²	-	-
Wall Transmission	86 m²	2516	-	86 m²	231	-
Roof Transmission	0 m²	0	-	0 m²	0	-
Window Transmission	11 m²	587	-	11 m²	72	-
Skylight Transmission	0 m²	0	-	0 m²	0	-
Door Loads	0 m²	0	-	0 m²	0	-
Floor Transmission	102 m²	1360	-	102 m²	0	-
Partitions	256 m²	3398	-	256 m²	0	-
Ceiling	0 m²	0	-	0 m²	0	-
Overhead Lighting	1637 W	1357	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	4050 W	3741	-	0	0	-
People	24	1355	1442	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	-	15841	1442	-	303	0



TABLE 1.1.A. COMPONENT LOADS FOR SPACE "TE-RECEPÇÃO" IN ZONE "Zone 1"						
	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Apr 1600 COOLING OA DB / WB 30,0 °C / 24,4 °C OCCUPIED T-STAT 22,0 °C			HEATING DATA AT DES HTG HEATING OA DB / WB 20,0 °C / 13,8 °C OCCUPIED T-STAT 21,1 °C		
		Sensible	Latent		Sensible	Latent
SPACE LOADS	Details	(W)	(W)	Details	(W)	(W)
Window & Skylight Solar Loads	4 m²	747	-	4 m²	-	-
Wall Transmission	16 m²	377	-	16 m²	42	-
Roof Transmission	0 m²	0	-	0 m²	0	-
Window Transmission	4 m²	163	-	4 m²	26	-
Skylight Transmission	0 m²	0	-	0 m²	0	-
Door Loads	0 m²	0	-	0 m²	0	-
Floor Transmission	13 m²	142	-	13 m²	0	-
Partitions	23 m²	256	-	23 m²	0	-
Ceiling	0 m²	0	-	0 m²	0	-
Overhead Lighting	205 W	170	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	450 W	416	-	0	0	-
People	5	282	301	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	-	2551	301	-	68	0

TABLE 1.1.B. ENVELOPE LOADS FOR SPACE "TE-RECEPÇÃO" IN ZONE "Zone 1"						
	Area (m²)	U-Value (W/(m²·°K))	Shade Coeff.	COOLING	COOLING	HEATING
				TRANS	SOLAR	TRANS
				(W)	(W)	(W)
<b>N EXPOSURE</b>						
WALL	8	2,405	-	205	-	22
WINDOW 1	3	5,870	1,000	122	606	20
<b>E EXPOSURE</b>						
WALL	8	2,405	-	171	-	20
WINDOW 1	1	5,870	1,000	41	141	7

TABLE 1.2.A. COMPONENT LOADS FOR SPACE "TE-S.DE EX. AUDIOME. 01" IN ZONE "Zone 1"						
	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jan 1500 COOLING OA DB / WB 32,2 °C / 25,6 °C OCCUPIED T-STAT 22,0 °C			HEATING DATA AT DES HTG HEATING OA DB / WB 20,0 °C / 13,8 °C OCCUPIED T-STAT 21,1 °C		
		Sensible	Latent		Sensible	Latent
SPACE LOADS	Details	(W)	(W)	Details	(W)	(W)
Window & Skylight Solar Loads	1 m²	179	-	1 m²	-	-
Wall Transmission	6 m²	196	-	6 m²	17	-
Roof Transmission	0 m²	0	-	0 m²	0	-
Window Transmission	1 m²	54	-	1 m²	7	-
Skylight Transmission	0 m²	0	-	0 m²	0	-
Door Loads	0 m²	0	-	0 m²	0	-
Floor Transmission	16 m²	211	-	16 m²	0	-
Partitions	34 m²	454	-	34 m²	0	-
Ceiling	0 m²	0	-	0 m²	0	-
Overhead Lighting	256 W	209	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	450 W	413	-	0	0	-
People	2	111	120	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	-	1828	120	-	24	0

TABLE 1.2.B. ENVELOPE LOADS FOR SPACE "TE-S.DE EX. AUDIOME. 01" IN ZONE "Zone 1"						
				COOLING	COOLING	HEATING
	Area	U-Value	Shade	TRANS	SOLAR	TRANS
	(m²)	(W/(m²·°K))	Coeff.	(W)	(W)	(W)
E EXPOSURE						
WALL	6	2,405	-	196	-	17
WINDOW 1	1	5,870	1,000	54	179	7

TABLE 1.3.A. COMPONENT LOADS FOR SPACE " TE-S.DE EX. AUDIOME. 02 " IN ZONE " Zone 1 "						
	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jan 1800 COOLING OA DB / WB 31,0 °C / 25,2 °C OCCUPIED T-STAT 22,0 °C			HEATING DATA AT DES HTG HEATING OA DB / WB 20,0 °C / 13,8 °C OCCUPIED T-STAT 21,1 °C		
		Sensible (W)	Latent (W)		Sensible (W)	Latent (W)
SPACE LOADS	Details			Details		
Window & Skylight Solar Loads	0 m²	0	-	0 m²	-	-
Wall Transmission	6 m²	181	-	6 m²	16	-
Roof Transmission	0 m²	0	-	0 m²	0	-
Window Transmission	0 m²	0	-	0 m²	0	-
Skylight Transmission	0 m²	0	-	0 m²	0	-
Door Loads	0 m²	0	-	0 m²	0	-
Floor Transmission	8 m²	111	-	8 m²	0	-
Partitions	24 m²	321	-	24 m²	0	-
Ceiling	0 m²	0	-	0 m²	0	-
Overhead Lighting	133 W	113	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	450 W	420	-	0	0	-
People	2	117	120	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	-	1263	120	-	16	0

TABLE 1.3.B. ENVELOPE LOADS FOR SPACE " TE-S.DE EX. AUDIOME. 02 " IN ZONE " Zone 1 "						
	Area (m²)	U-Value (W/(m²·°K))	Shade Coeff.	COOLING TRANS (W)	COOLING SOLAR (W)	HEATING TRANS (W)
E EXPOSURE						
WALL	6	2,405	-	181	-	16

TABLE 1.4.A. COMPONENT LOADS FOR SPACE " TE-S.DE EX. AUDIOME. 03 " IN ZONE " Zone 1 "						
	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jan 1800 COOLING OA DB / WB 31,0 °C / 25,2 °C OCCUPIED T-STAT 22,0 °C			HEATING DATA AT DES HTG HEATING OA DB / WB 20,0 °C / 13,8 °C OCCUPIED T-STAT 21,1 °C		
		Sensible	Latent		Sensible	Latent
SPACE LOADS	Details	(W)	(W)	Details	(W)	(W)
Window & Skylight Solar Loads	0 m²	0	-	0 m²	-	-
Wall Transmission	7 m²	205	-	7 m²	18	-
Roof Transmission	0 m²	0	-	0 m²	0	-
Window Transmission	0 m²	0	-	0 m²	0	-
Skylight Transmission	0 m²	0	-	0 m²	0	-
Door Loads	0 m²	0	-	0 m²	0	-
Floor Transmission	10 m²	130	-	10 m²	0	-
Partitions	25 m²	332	-	25 m²	0	-
Ceiling	0 m²	0	-	0 m²	0	-
Overhead Lighting	155 W	132	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	450 W	420	-	0	0	-
People	2	117	120	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	-	1336	120	-	18	0

TABLE 1.4.B. ENVELOPE LOADS FOR SPACE " TE-S.DE EX. AUDIOME. 03 " IN ZONE " Zone 1 "						
				COOLING	COOLING	HEATING
	Area	U-Value	Shade	TRANS	SOLAR	TRANS
	(m²)	(W/(m²·°K))	Coeff.	(W)	(W)	(W)
E EXPOSURE						
WALL	7	2,405	-	205	-	18

TABLE 1.5.A. COMPONENT LOADS FOR SPACE " TE-SALA DE ESPERA " IN ZONE " Zone 1 "						
	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jan 1800			HEATING DATA AT DES HTG		
	COOLING OA DB / WB 31,0 °C / 25,2 °C			HEATING OA DB / WB 20,0 °C / 13,8 °C		
		Sensible	Latent		Sensible	Latent
SPACE LOADS	Details	(W)	(W)	Details	(W)	(W)
Window & Skylight Solar Loads	1 m²	139	-	1 m²	-	-
Wall Transmission	23 m²	770	-	23 m²	61	-
Roof Transmission	0 m²	0	-	0 m²	0	-
Window Transmission	1 m²	50	-	1 m²	7	-
Skylight Transmission	0 m²	0	-	0 m²	0	-
Door Loads	0 m²	0	-	0 m²	0	-
Floor Transmission	20 m²	268	-	20 m²	0	-
Partitions	30 m²	398	-	30 m²	0	-
Ceiling	0 m²	0	-	0 m²	0	-
Overhead Lighting	320 W	272	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	450 W	420	-	0	0	-
People	5	292	301	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	-	2608	301	-	67	0

TABLE 1.5.B. ENVELOPE LOADS FOR SPACE " TE-SALA DE ESPERA " IN ZONE " Zone 1 "						
				COOLING	COOLING	HEATING
	Area	U-Value	Shade	TRANS	SOLAR	TRANS
	(m²)	(W/(m²·K))	Coeff.	(W)	(W)	(W)
<b>E EXPOSURE</b>						
WALL	6	2,405	-	193	-	17
WINDOW 1	1	5,870	1,000	50	139	7
<b>W EXPOSURE</b>						
WALL	16	2,405	-	577	-	44

TABLE 1.6.A. COMPONENT LOADS FOR SPACE " TE-SALA EXAME PEATE " IN ZONE " Zone 1 "						
	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Dec 1600 COOLING OA DB / WB 31,5 °C / 25,5 °C OCCUPIED T-STAT 22,0 °C			HEATING DATA AT DES HTG HEATING OA DB / WB 20,0 °C / 13,8 °C OCCUPIED T-STAT 21,1 °C		
		Sensible	Latent		Sensible	Latent
SPACE LOADS	Details	(W)	(W)	Details	(W)	(W)
Window & Skylight Solar Loads	2 m²	337	-	2 m²	-	-
Wall Transmission	12 m²	340	-	12 m²	32	-
Roof Transmission	0 m²	0	-	0 m²	0	-
Window Transmission	2 m²	100	-	2 m²	13	-
Skylight Transmission	0 m²	0	-	0 m²	0	-
Door Loads	0 m²	0	-	0 m²	0	-
Floor Transmission	9 m²	118	-	9 m²	0	-
Partitions	17 m²	220	-	17 m²	0	-
Ceiling	0 m²	0	-	0 m²	0	-
Overhead Lighting	144 W	119	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	450 W	416	-	0	0	-
People	2	113	120	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	-	1763	120	-	45	0

TABLE 1.6.B. ENVELOPE LOADS FOR SPACE " TE-SALA EXAME PEATE " IN ZONE " Zone 1 "						
	Area	U-Value	Shade	COOLING	COOLING	HEATING
	(m²)	(W/(m²·°K))	Coeff.	TRANS	SOLAR	TRANS
				(W)	(W)	(W)
E EXPOSURE						
WALL	5	2,405	-	138	-	13
WINDOW 1	1	5,870	1,000	50	163	7
S EXPOSURE						
WALL	7	2,405	-	202	-	19
WINDOW 1	1	5,870	1,000	50	174	7

TABLE 1.7.A. COMPONENT LOADS FOR SPACE " TE-TERAPIA 01 " IN ZONE " Zone 1 "						
	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jan 1500 COOLING OA DB / WB 32,2 °C / 25,6 °C OCCUPIED T-STAT 22,0 °C			HEATING DATA AT DES HTG HEATING OA DB / WB 20,0 °C / 13,8 °C OCCUPIED T-STAT 21,1 °C		
		Sensible	Latent		Sensible	Latent
SPACE LOADS	Details	(W)	(W)	Details	(W)	(W)
Window & Skylight Solar Loads	1 m²	179	-	1 m²	-	-
Wall Transmission	6 m²	172	-	6 m²	15	-
Roof Transmission	0 m²	0	-	0 m²	0	-
Window Transmission	1 m²	54	-	1 m²	7	-
Skylight Transmission	0 m²	0	-	0 m²	0	-
Door Loads	0 m²	0	-	0 m²	0	-
Floor Transmission	9 m²	115	-	9 m²	0	-
Partitions	34 m²	453	-	34 m²	0	-
Ceiling	0 m²	0	-	0 m²	0	-
Overhead Lighting	139 W	114	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	450 W	413	-	0	0	-
People	2	111	120	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	-	1611	120	-	21	0

TABLE 1.7.B. ENVELOPE LOADS FOR SPACE " TE-TERAPIA 01 " IN ZONE " Zone 1 "						
				COOLING	COOLING	HEATING
	Area	U-Value	Shade	TRANS	SOLAR	TRANS
	(m²)	(W/(m²·°K))	Coeff.	(W)	(W)	(W)
E EXPOSURE						
WALL	6	2,405	-	172	-	15
WINDOW 1	1	5,870	1,000	54	179	7

TABLE 1.8.A. COMPONENT LOADS FOR SPACE " TE-TERAPIA 02 " IN ZONE " Zone 1 "						
	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jan 1500 COOLING OA DB / WB 32,2 °C / 25,6 °C OCCUPIED T-STAT 22,0 °C			HEATING DATA AT DES HTG HEATING OA DB / WB 20,0 °C / 13,8 °C OCCUPIED T-STAT 21,1 °C		
		Sensible	Latent		Sensible	Latent
SPACE LOADS	Details	(W)	(W)	Details	(W)	(W)
Window & Skylight Solar Loads	1 m²	179	-	1 m²	-	-
Wall Transmission	6 m²	172	-	6 m²	15	-
Roof Transmission	0 m²	0	-	0 m²	0	-
Window Transmission	1 m²	54	-	1 m²	7	-
Skylight Transmission	0 m²	0	-	0 m²	0	-
Door Loads	0 m²	0	-	0 m²	0	-
Floor Transmission	9 m²	118	-	9 m²	0	-
Partitions	34 m²	453	-	34 m²	0	-
Ceiling	0 m²	0	-	0 m²	0	-
Overhead Lighting	142 W	116	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	450 W	413	-	0	0	-
People	2	111	120	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	-	1616	120	-	21	0

TABLE 1.8.B. ENVELOPE LOADS FOR SPACE " TE-TERAPIA 02 " IN ZONE " Zone 1 "						
				COOLING	COOLING	HEATING
	Area	U-Value	Shade	TRANS	SOLAR	TRANS
	(m²)	(W/(m²·°K))	Coeff.	(W)	(W)	(W)
E EXPOSURE						
WALL	6	2,405	-	172	-	15
WINDOW 1	1	5,870	1,000	54	179	7



TABLE 1.9.A. COMPONENT LOADS FOR SPACE " TE-TERAPIA 03 " IN ZONE "Zone 1 "						
	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jan 1500 COOLING OA DB / WB 32,2 °C / 25,6 °C OCCUPIED T-STAT 22,0 °C			HEATING DATA AT DES HTG HEATING OA DB / WB 20,0 °C / 13,8 °C OCCUPIED T-STAT 21,1 °C		
		Sensible	Latent		Sensible	Latent
SPACE LOADS	Details	(W)	(W)	Details	(W)	(W)
Window & Skylight Solar Loads	1 m²	179	-	1 m²	-	-
Wall Transmission	6 m²	172	-	6 m²	15	-
Roof Transmission	0 m²	0	-	0 m²	0	-
Window Transmission	1 m²	54	-	1 m²	7	-
Skylight Transmission	0 m²	0	-	0 m²	0	-
Door Loads	0 m²	0	-	0 m²	0	-
Floor Transmission	9 m²	118	-	9 m²	0	-
Partitions	34 m²	453	-	34 m²	0	-
Ceiling	0 m²	0	-	0 m²	0	-
Overhead Lighting	142 W	116	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	450 W	413	-	0	0	-
People	2	111	120	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	-	1616	120	-	21	0

TABLE 1.9.B. ENVELOPE LOADS FOR SPACE " TE-TERAPIA 03 " IN ZONE "Zone 1 "						
				COOLING	COOLING	HEATING
	Area	U-Value	Shade	TRANS	SOLAR	TRANS
	(m²)	(W/(m²·°K))	Coeff.	(W)	(W)	(W)
E EXPOSURE						
WALL	6	2,405	-	172	-	15
WINDOW 1	1	5,870	1,000	54	179	7

ZONE: Zone 1									
DESIGN MONTH: DECEMBER									
Hour	OA TEMP (°C)	ZONE TEMP (°C)	RH (%)	ZONE AIRFLOW (L/s)	ZONE SENSIBLE LOAD (W)	ZONE COND (W)	TERMINAL COOLING COIL (W)	TERMINAL HEATING COIL (W)	ZONE HEATING UNIT (W)
0000	26,7	28,5	-	0,0	7762,3	0,0	0,0	0,0	0,0
0100	26,4	28,4	-	0,0	7348,5	0,0	0,0	0,0	0,0
0200	26,1	28,3	-	0,0	6946,3	0,0	0,0	0,0	0,0
0300	25,9	28,1	-	0,0	6582,7	0,0	0,0	0,0	0,0
0400	25,7	28,0	-	0,0	6258,1	0,0	0,0	0,0	0,0
0500	25,7	28,0	-	0,0	6143,5	0,0	0,0	0,0	0,0
0600	25,8	28,4	-	0,0	6826,1	0,0	0,0	0,0	0,0
0700	26,1	28,7	-	0,0	7247,2	0,0	0,0	0,0	0,0
0800	26,6	22,8	51	1342,2	12555,7	16775,4	22797,0	0,0	0,0
0900	27,4	22,8	51	1342,2	13145,5	16645,2	22783,3	0,0	0,0
1000	28,3	22,9	51	1342,2	13647,0	16587,0	22803,8	0,0	0,0
1100	29,3	22,9	51	1342,2	14191,9	16927,3	23417,4	0,0	0,0
1200	30,3	23,0	50	1342,2	14806,4	17054,4	23672,6	0,0	0,0
1300	31,0	22,9	49	1342,2	15269,5	17592,4	24491,5	0,0	0,0
1400	31,5	22,8	49	1342,2	15417,8	17558,5	24543,8	0,0	0,0
1500	31,7	22,8	49	1342,2	15534,6	17520,0	24533,7	0,0	0,0
1600	31,5	22,9	50	1342,2	15605,0	17326,0	24235,8	0,0	0,0
1700	31,1	22,9	50	1342,2	15576,2	17104,9	23902,5	0,0	0,0
1800	30,4	22,8	51	1342,2	15337,3	16910,8	23626,2	0,0	0,0
1900	29,6	31,3	-	0,0	14979,9	0,0	0,0	0,0	0,0
2000	28,8	31,6	-	0,0	14564,9	0,0	0,0	0,0	0,0
2100	28,2	29,1	-	0,0	9274,7	0,0	0,0	0,0	0,0
2200	27,6	28,8	-	0,0	8717,2	0,0	0,0	0,0	0,0
2300	27,1	28,7	-	0,0	8211,5	0,0	0,0	0,0	0,0

ZONE: Zone 1 DESIGN MONTH: JANUARY									
Hour	OA TEMP (°C)	ZONE TEMP (°C)	RH (%)	ZONE AIRFLOW (L/s)	ZONE SENSIBLE LOAD (W)	ZONE COND (W)	TERMINAL COOLING COIL (W)	TERMINAL HEATING COIL (W)	ZONE HEATING UNIT (W)
0000	27,3	28,9	-	0,0	8225,9	0,0	0,0	0,0	0,0
0100	27,0	28,8	-	0,0	7811,5	0,0	0,0	0,0	0,0
0200	26,7	28,6	-	0,0	7409,0	0,0	0,0	0,0	0,0
0300	26,5	28,5	-	0,0	7045,1	0,0	0,0	0,0	0,0
0400	26,3	28,4	-	0,0	6720,4	0,0	0,0	0,0	0,0
0500	26,2	28,3	-	0,0	6461,5	0,0	0,0	0,0	0,0
0600	26,3	28,7	-	0,0	7132,2	0,0	0,0	0,0	0,0
0700	26,6	29,0	-	0,0	7615,1	0,0	0,0	0,0	0,0
0800	27,2	22,9	50	1342,2	12953,1	17135,2	23136,8	0,0	0,0
0900	28,0	23,0	50	1342,2	13577,7	16986,5	23090,6	0,0	0,0
1000	28,9	22,8	49	1342,2	14109,6	17519,9	23954,2	0,0	0,0
1100	29,9	23,0	49	1342,2	14630,5	17481,9	24003,1	0,0	0,0
1200	30,8	23,0	49	1342,2	15253,4	17794,1	24570,2	0,0	0,0
1300	31,6	23,0	49	1342,2	15513,1	17805,6	24695,3	0,0	0,0
1400	32,0	23,0	49	1342,2	15661,0	17773,1	24739,0	0,0	0,0
1500	32,2	22,9	49	1342,2	15771,6	17729,1	24722,4	0,0	0,0
1600	32,0	22,9	49	1342,2	15840,9	17671,7	24629,6	0,0	0,0
1700	31,6	22,9	49	1342,2	15825,6	17580,4	24464,3	0,0	0,0
1800	31,0	23,0	50	1342,2	15785,9	17089,5	23736,6	0,0	0,0
1900	30,2	31,6	-	0,0	15438,5	0,0	0,0	0,0	0,0
2000	29,4	32,0	-	0,0	15029,2	0,0	0,0	0,0	0,0
2100	28,7	29,5	-	0,0	9740,4	0,0	0,0	0,0	0,0
2200	28,1	29,2	-	0,0	9182,5	0,0	0,0	0,0	0,0
2300	27,7	29,1	-	0,0	8675,9	0,0	0,0	0,0	0,0

ZONE: Zone 1									
DESIGN MONTH: FEBRUARY									
Hour	OA TEMP (°C)	ZONE TEMP (°C)	RH (%)	ZONE AIRFLOW (L/s)	ZONE SENSIBLE LOAD (W)	ZONE COND (W)	TERMINAL COOLING COIL (W)	TERMINAL HEATING COIL (W)	ZONE HEATING UNIT (W)
0000	27,3	28,8	-	0,0	8159,4	0,0	0,0	0,0	0,0
0100	27,0	28,7	-	0,0	7750,9	0,0	0,0	0,0	0,0
0200	26,7	28,6	-	0,0	7353,6	0,0	0,0	0,0	0,0
0300	26,5	28,5	-	0,0	6994,4	0,0	0,0	0,0	0,0
0400	26,3	28,3	-	0,0	6673,8	0,0	0,0	0,0	0,0
0500	26,2	28,3	-	0,0	6418,7	0,0	0,0	0,0	0,0
0600	26,3	28,6	-	0,0	6993,7	0,0	0,0	0,0	0,0
0700	26,6	28,9	-	0,0	7531,0	0,0	0,0	0,0	0,0
0800	27,2	22,9	50	1342,2	12879,6	17128,9	23157,3	0,0	0,0
0900	28,0	22,9	50	1342,2	13510,0	17043,7	23207,9	0,0	0,0
1000	28,9	22,9	50	1342,2	14044,5	17194,3	23540,8	0,0	0,0
1100	29,9	22,8	49	1342,2	14548,8	17566,0	24171,3	0,0	0,0
1200	30,8	22,9	49	1342,2	15164,4	17726,1	24482,6	0,0	0,0
1300	31,6	23,0	49	1342,2	15418,8	17737,5	24631,0	0,0	0,0
1400	32,0	22,9	49	1342,2	15557,5	17701,0	24673,0	0,0	0,0
1500	32,2	22,9	49	1342,2	15658,5	17652,7	24652,6	0,0	0,0
1600	32,0	22,9	49	1342,2	15719,0	17591,3	24556,2	0,0	0,0
1700	31,6	22,9	50	1342,2	15705,6	17236,3	24045,7	0,0	0,0
1800	31,0	23,0	50	1342,2	15683,1	17016,4	23644,5	0,0	0,0
1900	30,2	31,6	-	0,0	15337,8	0,0	0,0	0,0	0,0
2000	29,4	31,9	-	0,0	14933,7	0,0	0,0	0,0	0,0
2100	28,7	29,4	-	0,0	9652,3	0,0	0,0	0,0	0,0
2200	28,1	29,1	-	0,0	9102,2	0,0	0,0	0,0	0,0
2300	27,7	29,0	-	0,0	8602,8	0,0	0,0	0,0	0,0

## January DESIGN COOLING DAY, 1400

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°C)	Specific Humidity (kg/kg)	Airflow (L/s)	CO2 Level (ppm)	Sensible Heat (W)	Latent Heat (W)
Ventilation Air	Inlet	32,0	0,01794	125	400	1557	3959
Vent - Return Mixing	Outlet	-17,8	0,00000	0	0	-	-
Ventilation Fan	Outlet	-17,8	0,00000	0	0	0	-
Zone Air	-	23,0	0,00850	1342	101	17773	1442
Return Plenum	Outlet	-17,8	0,00850	1342	101	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1,207; At site altitude = 1,206 W/(L/s-K)

Air Density x Heat of Vaporization x Conversion Factor: At sea level = 2947,6; At site altitude = 2945,5 W/(L/s)

Site Altitude = 5,8 m

TABLE 2: ZONE DATA

Component	Location	Dry-Bulb Temp (°C)	Specific Humidity (kg/kg)	Airflow (L/s)	CO2 Level (ppm)	Sensible Heat (W)	Latent Heat (W)
<b>Zone 1 (Cooling)</b>							
Ventilation Air	-	-	-	125	-	-	-
Cooling Coil Inlet	-	23,9	0,00951	1342	0	-	-
Cooling Coil Outlet	-	12,0	0,00814	1342	0	19330	5409
Heating Coil Inlet	-	12,0	0,00814	1342	0	-	-
Heating Coil Outlet	-	12,0	0,00814	1342	0	0	-
Zone Air	-	23,0	0,00850	1342	0	17773	-

## WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°C)	Specific Humidity (kg/kg)	Airflow (L/s)	CO2 Level (ppm)	Sensible Heat (W)	Latent Heat (W)
Ventilation Air	Inlet	20,0	0,00726	125	400	-116	0
Vent - Return Mixing	Outlet	-17,8	0,00000	0	0	-	-
Ventilation Fan	Outlet	-17,8	0,00000	0	0	0	-
Zone Air	-	20,7	0,00726	1342	0	82	0
Return Plenum	Outlet	-17,8	0,00726	1342	0	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1,207; At site altitude = 1,206 W/(L/s-K)

Air Density x Heat of Vaporization x Conversion Factor: At sea level = 2947,6; At site altitude = 2945,5

W/(L/s)

Site Altitude = 5,8 m

TABLE 2: ZONE DATA

Component	Location	Dry-Bulb Temp (°C)	Specific Humidity (kg/kg)	Airflow (L/s)	CO2 Level (ppm)	Sensible Heat (W)	Latent Heat (W)
<b>Zone 1 (Deadband)</b>							
Ventilation Air	-	-	-	142	-	-	-
Cooling Coil Inlet	-	20,6	0,00726	1342	0	-	-
Cooling Coil Outlet	-	20,6	0,00726	1342	0	0	0
Heating Coil Inlet	-	20,6	0,00726	1342	0	-	-
Heating Coil Outlet	-	20,6	0,00726	1342	0	0	-
Zone Air	-	20,7	0,00726	1342	0	82	-