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UNIDADE BÁSICA DE SAÚDE INDÍGENA – TIPO 2 (UBSI)

MEMORIAL DE CÁLCULO
CLIMATIZAÇÃO

CLIENTE	VOLUME	REVISÃO	DATA
SESAB	00/00	01	ABR/25

Design Weather Parameters & MSHGs

SESAB-UBSI-TIPO2
jca

04/14/2025
09:34

Design Parameters:

City Name **Salvador**
 Location **Brazil**
 Latitude **-12,9** Deg.
 Longitude **38,3** Deg.
 Elevation **5,8** m
 Summer Design Dry-Bulb **32,2** °C
 Summer Coincident Wet-Bulb **25,6** °C
 Summer Daily Range **6,0** K
 Winter Design Dry-Bulb **20,0** °C
 Winter Design Wet-Bulb **13,8** °C
 Atmospheric Clearness Number **1,00**
 Average Ground Reflectance **0,20**
 Soil Conductivity **1,385** W/(m K)
 Local Time Zone (GMT +/- N hours) **3,0** hours
 Consider Daylight Savings Time **Não**
 Simulation Weather Data **(EXT)**
 Current Data is **2001 ASHRAE Handbook**
 Design Cooling Months **January to December**

Design Day Maximum Solar Heat Gains

(The MSHG values are expressed in W/m²)

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 factor.

Space Input Data

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..... m²
 m
 kg/m²
AGENTE DE SAUDE

1. General Details:

Floor Area **9,8**
 Avg. Ceiling Height **3,0**

Building Weight 341,8

1.1. OA Ventilation Requirements:

..... **User-Defined**
 OA Requirement 1 **7,5** L/s/person
 OA Requirement 2 **0,30** L/(s·m²)
 Space Usage Defaults .. **ASHRAE Standard 62.1-2016**

Space Usage

2. Internals:

2.1. Overhead Lighting:

Fixture Type
 Recessed (Unvented)
 Occupancy
 Wattage
 16,00 W/m²

2.4. People:

..... **2,0** People
 **Office Work**
 **71,8** W/person
 **60,1** W/person
 **UBS**

Activity Level

Ballast Multiplier 1,00 Sensible
 Schedule UBS Latent
 Schedule

2.5. Miscellaneous Loads:

..... **0** W
 **None**
 **0** W
 **None**

2.2. Task Lighting:

Wattage 0,00 W/m² Sensible
 Schedule None Schedule
 Latent
 Schedule

2.3. Electrical Equipment:

..... W/m²
 Wattage
 Schedule 21,50
 UBS

3. Walls, Windows, Doors:

Exp.	Wall Gross Area (m ²)	Window 1 Qty.	Window 2 Qty.	Door 1 Qty.
S	10,6	1	0	0
W	7,0	0	0	0

3.1. Construction Types for Exposure S

Wall Type **Alvenaria 150mm externa**
 1st Window Type **J1**

3.2. Construction Types for Exposure W

Wall Type **Alvenaria 150mm externa**

4. Roofs, Skylights:

Exp.	Roof Gross Area (m ²)	Roof Slope (deg.)	Skylight Qty.
H	9,0	0	0

4.1. Construction Types for Exposure H

Roof Type **Telha Termoacustica**

5. Infiltration:

Design Cooling **0,00** L/s
 Design Heating **0,00** L/s
 Energy Analysis **0,00** L/s

Infiltration occurs only when the fan is off.

6. Floors:

Type Floor Above Unconditioned Space
 Floor Area 9,0 m²
 Total Floor U-Value 0,568 W/(m²·K)
 Unconditioned Space Max Temp. 23,9 °C
 Ambient at Space Max Temp. 35,0 °C

Space Input Data

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Unconditioned Space Min Temp. 23,9 °C

Ambient at Space Min Temp. 12,8 °C

..... m²

..... m

..... kg/m²

7. Partitions:

(No partition data).

ARQUIVO

1. General Details:

Floor Area **5,2**

Avg. Ceiling Height **3,0**

Building Weight 341,8

1.1. OA Ventilation Requirements:

..... **User-Defined**

OA Requirement 1 **7,5** L/s/person

OA Requirement 2 **0,30** L/(s·m²)

Space Usage Defaults .. **ASHRAE Standard 62.1-2016**

Space Usage

2. Internals:

2.1. Overhead Lighting:

Fixture Type

Recessed (Unvented)

..... Occupancy

..... Wattage

..... 16,00 W/m²

2.4. People:

..... **2,0** People

..... **Office Work**

..... **71,8** W/person

..... **60,1** W/person

..... **UBS**

Activity Level

Ballast Multiplier 1,00 Sensible

Schedule UBS Latent

..... Schedule

2.5. Miscellaneous Loads:

..... **0** W

..... **None**

..... **0** W

..... **None**

2.2. Task Lighting:

Wattage 0,00 W/m² Sensible

Schedule None Schedule

..... Latent

..... Schedule

2.3. Electrical Equipment:

..... W/m²

Wattage 21,50

Schedule UBS

3. Walls, Windows, Doors:

Exp.	Wall Gross Area (m ²)	Window 1 Qty.	Window 2 Qty.	Door 1 Qty.
S	5,7	1	0	0

3.1. Construction Types for Exposure S

Wall Type Alvenaria 150mm externa

1st Window Type J1.1

4. Roofs, Skylights:

Exp.	Roof Gross Area (m ²)	Roof Slope (deg.)	Skylight Qty.
H	22,6	0	0

4.1. Construction Types for Exposure H

Roof Type **Telha Termoacustica**

5. Infiltration:

Design Cooling **0,00** L/s

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

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

Infiltration occurs only when the fan is off.

6. Floors:

Type Floor Above Unconditioned Space

Floor Area 5,2 m²

Total Floor U-Value 0,568 W/(m²·K) Unconditioned Space Max Temp. 23,9 °C

Ambient at Space Max Temp. 35,0 °C

Unconditioned Space Min Temp. 23,9 °C

Ambient at Space Min Temp. 12,8 °C

7. Partitions:

Space Input Data		
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(No partition data).

-----	m ²
-----	m
-----	kg/m ²

Space Input Data

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CONS. ODONT

1. General Details:

Floor Area **12,4**
Avg. Ceiling Height **3,0**

1.1. OA Ventilation Requirements:

..... **User-Defined**
OA Requirement 1 **7,5** L/s/person
OA Requirement 2 **0,30** L/(s·m²)
Space Usage Defaults .. **ASHRAE Standard 62.1-2016**

Building Weight
341,8

Space Usage

2. Internals:

2.1. Overhead Lighting:

Fixture Type
Recessed (Unvented)
..... Occupancy
..... Wattage
16,00 W/m²

Activity Level

Ballast Multiplier 1,00 Sensible
Schedule UBS Latent
Schedule

2.4. People:

..... **3,0** People
..... **Office Work**
..... **71,8** W/person
..... **60,1** W/person
..... **UBS**

2.5. Miscellaneous Loads:

..... **0** W
..... **None**
..... **0** W
..... **None**

2.2. Task Lighting:

Wattage 0,00 W/m² Sensible
Schedule None Schedule
..... Latent
..... Schedule

2.3. Electrical Equipment:

..... W/m²
Wattage
Schedule 21,50
UBS

3. Walls, Windows, Doors:

Exp.	Wall Gross Area (m²)	Window 1 Qty.	Window 2 Qty.	Door 1 Qty.
E	7,0	1	0	0

3.1. Construction Types for Exposure E

Wall Type Alvenaria 150mm externa
1st Window Type J1

4. Roofs, Skylights:

Exp.	Roof Gross Area (m²)	Roof Slope (deg.)	Skylight Qty.
H	12,4	0	0

4.1. Construction Types for Exposure H

Space Input Data

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..... m²
 m
 **341,8** kg/m²
 Roof Type **Telha Termoacustica**

5. Infiltration:

Design Cooling **0,00** L/s
 Design Heating **0,00** L/s
 Energy Analysis **0,00** L/s

Infiltration occurs only when the fan is off.

6. Floors:

Type Floor Above Unconditioned Space
 Floor Area 12,4 m²
 Total Floor U-Value 0,568 W/(m²·K) Unconditioned Space Max Temp. 23,9 °C
 Ambient at Space Max Temp. 35,0 °C
 Unconditioned Space Min Temp. 23,9 °C
 Ambient at Space Min Temp. 12,8 °C

7. Partitions:

(No partition data).

CONSULTORIO

1. General Details:

Floor Area **13,2**
 Avg. Ceiling Height **3,0**

1.1. OA Ventilation Requirements:

..... **User-Defined**
 OA Requirement 1 **7,5** L/s/person
 OA Requirement 2 **0,30** L/(s·m²)
 Space Usage Defaults .. **ASHRAE Standard 62.1-2016**

Building Weight
 341,8

Space Usage

2. Internals:

2.1. Overhead Lighting:

Fixture Type
 Recessed (Unvented)
 Occupancy
 Wattage
 16,00 W/m²

Activity Level
 Ballast Multiplier 1,00 Sensible
 Schedule UBS Latent
 Schedule

2.2. Task Lighting:

Wattage 0,00 W/m²
 Schedule None

2.3. Electrical Equipment:

..... W/m²
 Wattage
 Schedule 21,50
 UBS

3. Walls, Windows, Doors:

2.4. People:

..... **2,0** People
 **Office Work**
 **71,8** W/person
 **60,1** W/person
 **UBS**

2.5. Miscellaneous Loads:

..... **0** W
 **None**
 **0** W
 **None**

Sensible
 Schedule
 Latent
 Schedule

Space Input Data

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			m ²	
			m	
			kg/m ²	
Exp.	Wall Gross Area (m ²)	Window 1 Qty.	Window 2 Qty.	Door 1 Qty.
N	9,8	1	0	0

3.1. Construction Types for Exposure N

Wall Type Alvenaria 150mm externa
 1st Window Type J1

4. Roofs, Skylights:

Exp.	Roof Gross Area (m ²)	Roof Slope (deg.)	Skylight Qty.
H	13,2	0	0

4.1. Construction Types for Exposure H

Roof Type **Telha Termoacustica**

5. Infiltration:

Design Cooling **0,00** L/s
 Design Heating **0,00** L/s
 Energy Analysis **0,00** L/s

Infiltration occurs only when the fan is off.

6. Floors:

Type Floor Above Unconditioned Space
 Floor Area 12,4 m²
 Total Floor U-Value 0,568 W/(m²·K) Unconditioned Space Max Temp. 23,9 °C
 Ambient at Space Max Temp. 35,0 °C
 Unconditioned Space Min Temp. 23,9 °C
 Ambient at Space Min Temp. 12,8 °C

7. Partitions:

(No partition data).

COPA

Floor Area **9,5**
 Avg. Ceiling Height **3,0**

1. General Details:

Building Weight

Space Usage

1.1. OA Ventilation Requirements:

..... **User-Defined**
 OA Requirement 1 **7,5** L/s/person
 OA Requirement 2 **0,30** L/(s·m²)
 Space Usage Defaults .. **ASHRAE Standard 62.1-2016**

2. Internals:

2.1. Overhead Lighting:

2.4. People:

ESTERILIZAÇÃO

..... m²
 m
 **341,8** kg/m²

Floor Area **7,5**
 Avg. Ceiling Height **3,0**

1.1. OA Ventilation Requirements:

..... **User-Defined**
 OA Requirement 1 **7,5** L/s/person
 OA Requirement 2 **0,30** L/(s·m²)
 Space Usage Defaults .. **ASHRAE Standard 62.1-2016**

1. General Details:

Building Weight

Space Usage

2. Internals:

2.1. Overhead Lighting:

Fixture Type
 Recessed (Unvented)
 Occupancy
 Wattage
 16,00 W/m²

Activity Level

Ballast Multiplier 1,00 Sensible
 Schedule UBS Latent
 Schedule

2.4. People:

..... **1,0** Person
 **Office Work**
 **71,8** W/person
 **60,1** W/person
 **UBS**

2.5. Miscellaneous Loads:

..... **0** W
 **None**
 **0** W
 **None**

2.2. Task Lighting:

Wattage 0,00 W/m² Sensible
 Schedule None Schedule
 Latent
 Schedule

2.3. Electrical Equipment:

..... W/m²
 Wattage
 Schedule 21,50
 UBS

3. Walls, Windows, Doors:

Exp.	Wall Gross Area (m ²)	Window 1 Qty.	Window 2 Qty.	Door 1 Qty.
S	4,2	1	0	0

3.1. Construction Types for Exposure S

Wall Type Alvenaria 150mm externa
 1st Window Type J1.2

4. Roofs, Skylights:

Exp.	Roof Gross Area (m ²)	Roof Slope (deg.)	Skylight Qty.
H	8,0	0	0

4.1. Construction Types for Exposure H

Roof Type **Telha Termoacustica**

5. Infiltration:

Design Cooling **0,00** L/s
 Design Heating **0,00** L/s
 Energy Analysis **0,00** L/s

Space Input Data

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..... m²
 m
 **341,8** kg/m²

Infiltration occurs only when the fan is off.

6. Floors:

Type Floor Above Unconditioned Space
 Floor Area 7,5 m²
 Total Floor U-Value 0,568 W/(m²·K) Unconditioned Space Max Temp. 23,9 °C
 Ambient at Space Max Temp. 35,0 °C
 Unconditioned Space Min Temp. 23,9 °C
 Ambient at Space Min Temp. 12,8 °C

7. Partitions:

(No partition data).

ESTOQUE

Floor Area **3,8**
 Avg. Ceiling Height **3,0**

1. General Details:

Building Weight

Space Usage

1.1. OA Ventilation Requirements:

..... **User-Defined**
 OA Requirement 1 **7,5** L/s/person
 OA Requirement 2 **0,30** L/(s·m²)
 Space Usage Defaults .. **ASHRAE Standard 62.1-2016**

2. Internals:

2.1. Overhead Lighting:

Fixture Type
 Recessed (Unvented)
 Occupancy
 Wattage
 16,00 W/m²

Activity Level

Ballast Multiplier 1,00 Sensible
 Schedule UBS Latent
 Schedule

2.4. People:

..... **2,0** People
 **Office Work**
 **71,8** W/person
 **60,1** W/person
 **UBS**

2.5. Miscellaneous Loads:

..... **0** W
 **None**
 **0** W
 **None**

2.2. Task Lighting:

Wattage 0,00 W/m² Sensible
 Schedule None Schedule
 Latent
 Schedule

2.3. Electrical Equipment:

..... W/m²
 Wattage
 Schedule 21,50
 UBS

3. Walls, Windows, Doors:

Exp.	Wall Gross Area (m ²)	Window 1 Qty.	Window 2 Qty.	Door 1 Qty.
S	4,8	1	0	0

3.1. Construction Types for Exposure S

Wall Type Alvenaria 150mm externa
 1st Window Type J1.1

Space Input Data

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..... m²
 m
 **341,8** kg/m²

4. Roofs, Skylights:

Exp.	Roof Gross Area (m ²)	Roof Slope (deg.)	Skylight Qty.
H	22,6	0	0

4.1. Construction Types for Exposure H

Roof Type **Telha Termoacustica**

5. Infiltration:

Design Cooling **0,00** L/s
 Design Heating **0,00** L/s
 Energy Analysis **0,00** L/s

Infiltration occurs only when the fan is off.

6. Floors:

Type Floor Above Unconditioned Space
 Floor Area 3,8 m²
 Total Floor U-Value 0,568 W/(m²·K) Unconditioned Space Max Temp. 23,9 °C
 Ambient at Space Max Temp. 35,0 °C
 Unconditioned Space Min Temp. 23,9 °C
 Ambient at Space Min Temp. 12,8 °C

7. Partitions:

(No partition data).

FARMÁCIA

Floor Area **9,0**
 Avg. Ceiling Height **3,0**

1. General Details:

Building Weight

Space Usage

1.1. OA Ventilation Requirements:

..... **User-Defined**
 OA Requirement 1 **7,5** L/s/person
 OA Requirement 2 **0,30** L/(s·m²)
 Space Usage Defaults .. **ASHRAE Standard 62.1-2016**

2. Internals:

2.1. Overhead Lighting:

Fixture Type
 Recessed (Unvented)
 Occupancy
 Wattage
 16,00 W/m²

Activity Level

Ballast Multiplier 1,00 Sensible
 Schedule UBS Latent
 Schedule

2.4. People:

..... **2,0** People
 **Office Work**
 **71,8** W/person
 **60,1** W/person
 **UBS**

2.5. Miscellaneous Loads:

..... **0** W
 **None**
 **0** W
 **None**

2.2. Task Lighting:

Wattage 0,00 W/m² Sensible
 Schedule None Schedule
 Latent
 Schedule

2.3. Electrical Equipment:

..... m²
 m
 **341,8** kg/m²
 W/m²
 Wattage
 Schedule 21,50
 UBS

3. Walls, Windows, Doors:

Exp.	Wall Gross Area (m ²)	Window 1 Qty.	Window 2 Qty.	Door 1 Qty.
E	9,3	1	0	0

3.1. Construction Types for Exposure E

Wall Type Alvenaria 150mm externa

1st Window Type J1.2

4. Roofs, Skylights:

Exp.	Roof Gross Area (m ²)	Roof Slope (deg.)	Skylight Qty.
H	9,0	0	0

4.1. Construction Types for Exposure H

Roof Type **Telha Termoacustica**

5. Infiltration:

Design Cooling **0,00** L/s

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

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

Infiltration occurs only when the fan is off.

6. Floors:

Type Floor Above Unconditioned Space

Floor Area 9,0 m²

Total Floor U-Value 0,568 W/(m²·K) Unconditioned Space Max Temp. 23,9 °C

Ambient at Space Max Temp. 35,0 °C

Unconditioned Space Min Temp. 23,9 °C

Ambient at Space Min Temp. 12,8 °C

7. Partitions:

(No partition data).

Space Input Data

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RECEPÇÃO

..... m²
 m
 kg/m²

1. General Details:

Floor Area **38,9**
 Avg. Ceiling Height **3,0**

1.1. OA Ventilation Requirements:

..... **User-Defined**
 OA Requirement 1 **7,5** L/s/person
 OA Requirement 2 **0,30** L/(s·m²)
 Space Usage Defaults .. **ASHRAE Standard 62.1-2016**

Building Weight
 341,8

Space Usage

2. Internals:

2.1. Overhead Lighting:

Fixture Type
 Recessed (Unvented)
 Occupancy
 Wattage
 16,00 W/m²

Activity Level

Ballast Multiplier 1,00 Sensible
 Schedule UBS Latent
 Schedule

2.2. Task Lighting:

Wattage 0,00 W/m²
 Schedule None

2.4. People:

..... **11,0** People
 **Office Work**
 **71,8** W/person
 **60,1** W/person
 **UBS**

2.5. Miscellaneous Loads:

..... **0** W
 **None**
 **0** W
 **None**

2.3. Electrical Equipment:

..... W/m²
 Wattage
 Schedule 21,50
 UBS

3. Walls, Windows, Doors:

Exp.	Wall Gross Area (m ²)	Window 1 Qty.	Window 2 Qty.	Door 1 Qty.
E	27,0	0	2	0
S	13,5	1	0	0

3.1. Construction Types for Exposure E

Wall Type **Alvenaria 150mm externa**
 2nd Window Type **P12**

3.2. Construction Types for Exposure S

Wall Type **Alvenaria 150mm externa**
 1st Window Type **J1**

4. Roofs, Skylights:

Exp.	Roof Gross Area (m ²)	Roof Slope (deg.)	Skylight Qty.
H	38,9	0	0

4.1. Construction Types for Exposure H

Roof Type m²
 m
 kg/m²
 Roof Type **Telha Termoacustica**

5. Infiltration:

Design Cooling **0,00** L/s
 Design Heating **0,00** L/s
 Energy Analysis **0,00** L/s

Infiltration occurs only when the fan is off.

6. Floors:

Type Floor Above Unconditioned Space
 Floor Area 38,9 m²
 Total Floor U-Value 0,568 W/(m²·K)
 Unconditioned Space Max Temp. 23,9 °C
 Ambient at Space Max Temp. 35,0 °C
 Unconditioned Space Min Temp. 23,9 °C
 Ambient at Space Min Temp. 12,8 °C

7. Partitions:

(No partition data).

SLADM**1. General Details:**

Floor Area **10,0**
 Avg. Ceiling Height **3,0**

Building Weight
 341,8

1.1. OA Ventilation Requirements:

..... **User-Defined**
 OA Requirement 1 **7,5** L/s/person
 OA Requirement 2 **0,30** L/(s·m²)
 Space Usage Defaults .. **ASHRAE Standard 62.1-2016**

Space Usage

2. Internals:**2.1. Overhead Lighting:**

Fixture Type
 Recessed (Unvented)
 Occupancy
 Wattage
 16,00 W/m²

2.4. People:

..... **7,0** People
 **Office Work**
 **71,8** W/person
 **60,1** W/person
 **UBS**

Activity Level

Ballast Multiplier 1,00 Sensible
 Schedule UBS Latent
 Schedule

2.5. Miscellaneous Loads:

..... **0** W
 **None**
 **0** W
 **None**

2.2. Task Lighting:

Wattage 0,00 W/m² Sensible
 Schedule None Schedule
 Latent
 Schedule

2.3. Electrical Equipment:

..... W/m²
 Wattage
 Schedule 21,50
 UBS

3. Walls, Windows, Doors:

Exp.	Wall Gross Area (m ²)	Window 1 Qty.	Window 2 Qty.	Door 1 Qty.
E	12,0	1	0	0

Space Input Data

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..... m²
 m
 kg/m²

3.1. Construction Types for Exposure E

Wall Type Alvenaria 150mm externa
 1st Window Type J1

4. Roofs, Skylights:

Exp.	Roof Gross Area (m ²)	Roof Slope (deg.)	Skylight Qty.
H	12,4	0	0

4.1. Construction Types for Exposure H

Roof Type **Telha Termoacustica**

5. Infiltration:

Design Cooling **0,00** L/s
 Design Heating **0,00** L/s
 Energy Analysis **0,00** L/s

Infiltration occurs only when the fan is off.

6. Floors:

Type Floor Above Unconditioned Space
 Floor Area 10,0 m²
 Total Floor U-Value 0,568 W/(m²·K) Unconditioned Space Max Temp. 23,9 °C
 Ambient at Space Max Temp. 35,0 °C
 Unconditioned Space Min Temp. 23,9 °C
 Ambient at Space Min Temp. 12,8 °C

7. Partitions:

(No partition data).

SL CURATIVO

1. General Details:

Floor Area **12,4**
 Avg. Ceiling Height ... **3,0**

1.1. OA Ventilation Requirements:

..... **User-Defined**
 OA Requirement 1 **7,5** L/s/person
 OA Requirement 2 **0,30** L/(s·m²)
 Space Usage Defaults .. **ASHRAE Standard 62.1-2016**

Building Weight
 341,8

Space Usage

2. Internals:

2.1. Overhead Lighting:

Fixture Type
 Recessed (Unvented)
 Occupancy
 Wattage
 16,00 W/m²

Activity Level
 Ballast Multiplier 1,00 Sensible
 Schedule UBS Latent
 Schedule

2.2. Task Lighting:

Wattage 0,00 W/m²
 Schedule None

2.3. Electrical Equipment:

2.4. People:

..... **1,0** Person
 **Office Work**
 **71,8** W/person
 **60,1** W/person
 **UBS**

2.5. Miscellaneous Loads:

..... **0** W
 **None**
 **0** W
 **None**

Space Input Data

SESAB-UBSI-TIPO2 04/14/2025 jca 09:37

..... m²
 m
 kg/m²
 W/m²
 Wattage
 Schedule 21,50
 UBS

3. Walls, Windows, Doors:

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

3.1. Construction Types for Exposure E

Wall Type Alvenaria 150mm externa
 1st Window Type J1

4. Roofs, Skylights:

Exp.	Roof Gross Area (m ²)	Roof Slope (deg.)	Skylight Qty.
H	12,4	0	0

4.1. Construction Types for Exposure H

Roof Type **Telha Termoacustica**

5. Infiltration:

Design Cooling **0,00** L/s
 Design Heating **0,00** L/s
 Energy Analysis **0,00** L/s

Infiltration occurs only when the fan is off.

6. Floors:

Type Floor Above Unconditioned Space
 Floor Area 12,4 m²
 Total Floor U-Value 0,568 W/(m²·K) Unconditioned Space Max Temp. 23,9 °C
 Ambient at Space Max Temp. 35,0 °C
 Unconditioned Space Min Temp. 23,9 °C
 Ambient at Space Min Temp. 12,8 °C

7. Partitions:

(No partition data).

Space Input Data

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SL PROC. MED

1. General Details:

Floor Area **12,4**
Avg. Ceiling Height **3,0**

1.1. OA Ventilation Requirements:

..... **User-Defined**
OA Requirement 1 **7,5** L/s/person
OA Requirement 2 **0,30** L/(s·m²)
Space Usage Defaults .. **ASHRAE Standard 62.1-2016**

Building Weight
341,8

Space Usage

2. Internals:

2.1. Overhead Lighting:

Fixture Type
Recessed (Unvented)
..... Occupancy
..... Wattage
16,00 W/m²

Activity Level

Ballast Multiplier 1,00 Sensible
Schedule UBS Latent
Schedule

2.4. People:

..... **1,0** Person
..... **Office Work**
..... **71,8** W/person
..... **60,1** W/person
..... **UBS**

2.5. Miscellaneous Loads:

..... **0** W
..... **None**
..... **0** W
..... **None**

2.2. Task Lighting:

Wattage 0,00 W/m² Sensible
Schedule None Schedule
..... Latent
..... Schedule

2.3. Electrical Equipment:

..... W/m²
Wattage
Schedule 21,50
UBS

3. Walls, Windows, Doors:

Exp.	Wall Gross Area (m²)	Window 1 Qty.	Window 2 Qty.	Door 1 Qty.
E	8,6	1	0	0

3.1. Construction Types for Exposure E

Wall Type Alvenaria 150mm externa
1st Window Type J1

4. Roofs, Skylights:

Exp.	Roof Gross Area (m²)	Roof Slope (deg.)	Skylight Qty.
H	12,4	0	0

4.1. Construction Types for Exposure H

Space Input Data

SESAB-UBSI-TIPO2

04/14/2025 jca

09:37

Roof Type **Telha Termoacustica**

m²
m
kg/m²

5. Infiltration:

Design Cooling **0,00** L/s
Design Heating **0,00** L/s
Energy Analysis **0,00** L/s

Infiltration occurs only when the fan is off.

6. Floors:

Type Floor Above Unconditioned Space
Floor Area 12,4 m²
Total Floor U-Value 0,568 W/(m²·K) Unconditioned Space Max Temp. 23,9 °C
Ambient at Space Max Temp. 35,0 °C
Unconditioned Space Min Temp. 23,9 °C
Ambient at Space Min Temp. 12,8 °C

7. Partitions:

(No partition data).

SL TI

1. General Details:

Floor Area **3,0**
Avg. Ceiling Height **3,0**

1.1. OA Ventilation Requirements:

..... **User-Defined**
OA Requirement 1 **7,5** L/s/person
OA Requirement 2 **0,30** L/(s·m²)
Space Usage Defaults .. **ASHRAE Standard 62.1-2016**

Building Weight
341,8

Space Usage

2. Internals:

2.1. Overhead Lighting:

Fixture Type
Recessed (Unvented)
..... Occupancy
..... Wattage
16,00 W/m²

Activity Level
Ballast Multiplier 1,00 Sensible
Schedule UBS Latent
Schedule

2.2. Task Lighting:

Wattage 0,00 W/m²
Schedule None

2.3. Electrical Equipment:

..... W/m²
Wattage
Schedule 21,50
UBS

3. Walls, Windows, Doors:

2.4. People:

..... **0,0** Person
..... **Office Work**
..... **71,8** W/person
..... **60,1** W/person
..... **UBS**

2.5. Miscellaneous Loads:

..... **0** W
..... **None**
..... **0** W
..... **None**

Sensible
Schedule
Latent
Schedule

Space Input Data

SESAB-UBSI-TIPO2 04/14/2025 jca 09:37

..... m²
 m
 kg/m²
 (No Wall, Window, Door data).

4. Roofs, Skylights:

Exp.	Roof Gross Area (m ²)	Roof Slope (deg.)	Skylight Qty.
H	3,0	0	0

4.1. Construction Types for Exposure H

Roof Type **Telha Termoacustica**

5. Infiltration:

Design Cooling **0,00** L/s
 Design Heating **0,00** L/s
 Energy Analysis **0,00** L/s

Infiltration occurs only when the fan is off.

6. Floors:

Type Floor Above Unconditioned Space
 Floor Area 3,0 m²
 Total Floor U-Value 0,568 W/(m²·K) Unconditioned Space Max Temp. 23,9 °C
 Ambient at Space Max Temp. 35,0 °C
 Unconditioned Space Min Temp. 23,9 °C
 Ambient at Space Min Temp. 12,8 °C

7. Partitions:

(No partition data).

VACINA

1. General Details:

Floor Area **10,0**
 Avg. Ceiling Height **3,0**

Building Weight
 341,8

1.1. OA Ventilation Requirements:

..... **User-Defined**
 OA Requirement 1 **7,5** L/s/person
 OA Requirement 2 **0,30** L/(s·m²)
 Space Usage Defaults .. **ASHRAE Standard 62.1-2016**

Space Usage

2. Internals:

2.1. Overhead Lighting:

Fixture Type
 Recessed (Unvented)
 Occupancy
 Wattage
 16,00 W/m²

Activity Level

Ballast Multiplier 1,00 Sensible
 Schedule UBS Latent
 Schedule

2.4. People:

..... **2,0** People
 **Office Work**
 **71,8** W/person
 **60,1** W/person
 **UBS**

2.5. Miscellaneous Loads:

..... **0** W
 **None**
 **0** W
 **None**

2.2. Task Lighting:

Wattage 0,00 W/m² Sensible
 Schedule None Schedule

Space Input Data

SESAB-UBSI-TIPO2 04/14/2025 jca 09:37

..... m²
 m
 kg/m²

Latent
Schedule

2.3. Electrical Equipment:

..... W/m²
 Wattage
 Schedule 21,50
 UBS

3. Walls, Windows, Doors:

Exp.	Wall Gross Area (m ²)	Window 1 Qty.	Window 2 Qty.	Door 1 Qty.
E	7,1	1	0	0

3.1. Construction Types for Exposure E

Wall Type Alvenaria 150mm externa
 1st Window Type J1.2

4. Roofs, Skylights:

Exp.	Roof Gross Area (m ²)	Roof Slope (deg.)	Skylight Qty.
H	22,6	0	0

4.1. Construction Types for Exposure H

Roof Type **Telha Termoacustica**

5. Infiltration:

Design Cooling **0,00** L/s
 Design Heating **0,00** L/s
 Energy Analysis **0,00** L/s

Infiltration occurs only when the fan is off.

6. Floors:

Type Floor Above Unconditioned Space
 Floor Area 5,2 m²
 Total Floor U-Value 0,568 W/(m²·K) Unconditioned Space Max Temp. 23,9 °C
 Ambient at Space Max Temp. 35,0 °C
 Unconditioned Space Min Temp. 23,9 °C
 Ambient at Space Min Temp. 12,8 °C

7. Partitions:

(No partition data).

Monthly Simulation Results for AGENTE DE SAUDE

Project Name: SESAB-UBSI-TIPO2

04/14/2025

Prepared by: jca

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Air System Simulation
Results (Table 1) :

Month	Central Cooling Coil Load (kWh)	Central Cooling Eqpt Load (kWh)	Central Unit Clg Input (kWh)	Supply Fan (kWh)	Lighting (kWh)	Electric Equipment (kWh)
January	784	784	209	0	80	108
February	699	699	186	0	72	97
March	797	797	215	0	80	108
April	678	678	178	0	78	104
May	563	563	144	0	80	108
June	492	492	126	0	78	104
July	453	453	115	0	80	108
August	459	459	117	0	80	108
September	536	536	138	0	78	104
October	647	647	168	0	80	108
November	697	697	183	0	78	104
December	826	826	221	0	80	108
Total	7632	7632	1999	0	944	1269

Monthly Simulation Results for CONSULTORIO

Project Name: SESAB-UBSI-TIPO2

04/14/2025

Prepared by: jca

09:38

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Air System Simulation
Results (Table 1) :

Month	Central Cooling Coil Load (kWh)	Central Cooling Eqpt Load (kWh)	Central Unit Clg Input (kWh)	Supply Fan (kWh)	Lighting (kWh)	Electric Equipment (kWh)
January	740	740	197	0	108	145
February	675	675	179	0	98	131
March	795	795	212	0	108	145
April	735	735	191	0	105	140
May	654	654	165	0	108	145
June	578	578	146	0	105	140
July	569	569	143	0	108	145
August	559	559	141	0	108	145
September	591	591	151	0	105	140
October	653	653	168	0	108	145
November	654	654	171	0	105	140
December	750	750	200	0	108	145
Total	7953	7953	2065	0	1272	1709

Monthly Simulation Results for CONSULTÓRIO ODONTO

Project Name: SESAB-UBSI-TIPO2

04/14/2025

Prepared by: jca

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Air System Simulation Results (Table 1) :

Month	Central Cooling Coil Load (kWh)	Central Cooling Eqpt Load (kWh)	Central Unit Clg Input (kWh)	Supply Fan (kWh)	Lighting (kWh)	Electric Equipment (kWh)
January	826	826	219	0	101	136
February	758	758	200	0	92	123
March	871	871	232	0	101	136
April	764	764	198	0	98	132
May	652	652	165	0	101	136
June	567	567	144	0	98	132
July	529	529	133	0	101	136
August	531	531	134	0	101	136
September	602	602	154	0	98	132
October	718	718	185	0	101	136
November	745	745	195	0	98	132
December	843	843	224	0	101	136
Total	8408	8408	2182	0	1195	1606

Monthly Simulation Results for COPA

Project Name: SESAB-UBSI-TIPO2
Prepared by: jca

04/14/2025
09:38

Air System Simulation Results (Table 1) :

Month	Central Cooling Coil Load (kWh)	Central Cooling Eqpt Load (kWh)	Central Unit Clg Input (kWh)	Supply Fan (kWh)	Lighting (kWh)	Electric Equipment (kWh)
January	715	715	188	0	78	104
February	633	633	166	0	70	94
March	737	737	194	0	78	104
April	642	642	165	0	75	101
May	530	530	133	0	78	104
June	459	459	116	0	75	101
July	413	413	104	0	78	104
August	407	407	103	0	78	104
September	468	468	119	0	75	101
October	582	582	149	0	78	104
November	612	612	159	0	75	101
December	739	739	194	0	78	104
Total	6936	6936	1790	0	915	1230

Monthly Simulation Results for ESTERILIZAÇÃO

Project Name: SESAB-UBSI-TIPO2

04/14/2025

Prepared by: jca

09:38

Air System Simulation Results (Table 1) :

Month	Central Cooling Coil Load (kWh)	Central Cooling Eqpt Load (kWh)	Central Unit Clg Input (kWh)	Supply Fan (kWh)	Lighting (kWh)	Electric Equipment (kWh)
January	356	356	93	0	61	82
February	318	318	83	0	55	74
March	362	362	95	0	61	82
April	319	319	81	0	59	80
May	278	278	69	0	61	82
June	248	248	62	0	59	80
July	237	237	59	0	61	82
August	243	243	61	0	61	82
September	263	263	66	0	59	80
October	305	305	77	0	61	82
November	320	320	82	0	59	80
December	370	370	96	0	61	82
Total	3620	3620	924	0	723	971

Monthly Simulation Results for ESTOQUE

Project Name: SESAB-UBSI-TIPO2
Prepared by: jca

04/14/2025
09:38

Air System Simulation Results (Table 1) :

Month	Central Cooling Coil Load (kWh)	Central Cooling Eqpt Load (kWh)	Central Unit Clg Input (kWh)	Supply Fan (kWh)	Lighting (kWh)	Electric Equipment (kWh)
January	418	418	110	0	31	42
February	379	379	100	0	28	38
March	431	431	114	0	31	42
April	367	367	95	0	30	40
May	293	293	74	0	31	42
June	249	249	63	0	30	40
July	227	227	57	0	31	42
August	234	234	59	0	31	42
September	278	278	71	0	30	40
October	339	339	87	0	31	42
November	373	373	97	0	30	40
December	443	443	117	0	31	42
Total	4032	4032	1046	0	366	492

Monthly Simulation Results for FARMÁCIA

Project Name: SESAB-UBSI-TIPO2
Prepared by: jca

04/14/2025
09:38

Air System Simulation Results (Table 1) :

Month	Central Cooling Coil Load (kWh)	Central Cooling Eqpt Load (kWh)	Central Unit Clg Input (kWh)	Supply Fan (kWh)	Lighting (kWh)	Electric Equipment (kWh)
January	578	578	152	0	74	99
February	529	529	139	0	67	89
March	611	611	162	0	74	99
April	526	526	136	0	71	96
May	441	441	111	0	74	99
June	384	384	97	0	71	96
July	358	358	90	0	74	99
August	362	362	91	0	74	99
September	413	413	105	0	71	96
October	492	492	126	0	74	99
November	516	516	134	0	71	96
December	591	591	156	0	74	99
Total	5802	5802	1500	0	867	1165

Monthly Simulation Results for RECEPÇÃO

Project Name: SESAB-UBSI-TIPO2
Prepared by: jca

04/14/2025
09:38

Air System Simulation Results (Table 1) :

Month	Central Cooling Coil Load (kWh)	Central Cooling Eqpt Load (kWh)	Central Unit Clg Input (kWh)	Supply Fan (kWh)	Lighting (kWh)	Electric Equipment (kWh)
January	4653	4653	1272	0	318	428
February	4241	4241	1153	0	288	386
March	4811	4811	1320	0	318	428
April	4160	4160	1111	0	308	414
May	3602	3602	939	0	318	428
June	3192	3192	835	0	308	414
July	3024	3024	788	0	318	428
August	3101	3101	811	0	318	428
September	3516	3516	932	0	308	414
October	4079	4079	1085	0	318	428
November	4322	4322	1167	0	308	414
December	4814	4814	1319	0	318	428
Total	47516	47516	12731	0	3748	5037

Monthly Simulation Results for SALA ADM

Project Name: SESAB-UBSI-TIPO2
Prepared by: jca

04/14/2025
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Month	Central Cooling Coil Load (kWh)	Central Cooling Eqpt Load (kWh)	Central Unit Clg Input (kWh)	Supply Fan (kWh)	Lighting (kWh)	Electric Equipment (kWh)
January	1396	1396	368	0	82	110
February	1276	1276	334	0	74	99
March	1489	1489	393	0	82	110
April	1297	1297	334	0	79	106
May	1066	1066	270	0	82	110
June	906	906	230	0	79	106
July	804	804	205	0	82	110
August	786	786	201	0	82	110
September	936	936	241	0	79	106
October	1177	1177	303	0	82	110
November	1215	1215	318	0	79	106
December	1415	1415	374	0	82	110
Total	13763	13763	3571	0	964	1295

Air System Simulation Results (Table 1) :

Monthly Simulation Results for SALA TI

Project Name: SESAB-UBSI-TIPO2
Prepared by: jca

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Air System Simulation Results (Table 1) :

Month	Central Cooling Coil Load (kWh)	Central Cooling Eqpt Load (kWh)	Central Unit Clg Input (kWh)	Supply Fan (kWh)	Lighting (kWh)	Electric Equipment (kWh)
January	67	67	17	0	25	33
February	61	61	16	0	22	30
March	67	67	17	0	25	33
April	63	63	16	0	24	32
May	61	61	15	0	25	33
June	59	59	14	0	24	32
July	60	60	15	0	25	33
August	61	61	15	0	25	33
September	62	62	15	0	24	32
October	65	65	16	0	25	33
November	66	66	17	0	24	32
December	69	69	18	0	25	33
Total	761	761	190	0	289	388

Monthly Simulation Results for SL DE CURATIVOS

Project Name: SESAB-UBSI-TIPO2

04/14/2025

Prepared by: jca

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Air System Simulation Results (Table 1) :

Month	Central Cooling Coil Load (kWh)	Central Cooling Eqpt Load (kWh)	Central Unit Clg Input (kWh)	Supply Fan (kWh)	Lighting (kWh)	Electric Equipment (kWh)
January	609	609	162	0	101	136
February	559	559	148	0	92	123
March	632	632	169	0	101	136
April	547	547	142	0	98	132
May	478	478	121	0	101	136
June	427	427	108	0	98	132
July	413	413	104	0	101	136
August	428	428	108	0	101	136
September	473	473	121	0	98	132
October	538	538	139	0	101	136
November	570	570	149	0	98	132
December	628	628	167	0	101	136
Total	6302	6302	1638	0	1195	1606

Monthly Simulation Results for VACINA

Project Name: SESAB-UBSI-TIPO2
Prepared by: jca

04/14/2025
09:38

Air System Simulation Results (Table 1) :

Month	Central Cooling Coil Load (kWh)	Central Cooling Eqpt Load (kWh)	Central Unit Clg Input (kWh)	Supply Fan (kWh)	Lighting (kWh)	Electric Equipment (kWh)
January	614	614	163	0	82	110
February	565	565	149	0	74	99
March	644	644	172	0	82	110
April	557	557	144	0	79	106
May	468	468	118	0	82	110
June	406	406	103	0	79	106
July	383	383	97	0	82	110
August	390	390	98	0	82	110
September	448	448	115	0	79	106
October	527	527	135	0	82	110
November	561	561	146	0	79	106
December	634	634	168	0	82	110
Total	6198	6198	1608	0	962	1292

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

AGENTE DE SAUDE	Equipment Class	SPLT AHU	Air
System Type	SZCAV	Number of zones	1
Floor Area			9,8 m²
Location			

Air System _____ Name _____

_____ Salvador, Brazil

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Fan motor BHP	0,00	BHP
Fan motor kW	0,00	kW
Fan static 0		Pa

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Actual max L/s	165	L/s
Standard L/s	165	L/s
Actual max L/(s·m ²)	16,84	L/(s·m ²)

Design airflow L/s 18 L/s

Air System _____ Name _____
 AGENTE DE _____
 SAUDE _____

	Salvador, Brazil
Number of zones	1
Floor Area	9,8 m²
Location	

Calculation	Jan to Dec
Month to Date	Calculated

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

Zone Name	Design Supply Airflow (L/s)	Minimum Supply Airflow (L/s)	Zone L/(s·m²)	Reheat Coil Load (kW)	Reheat Coil Water L/s @ 11,1 K	Zone Htg Unit Coil Load (kW)	Zone Htg Unit Water L/s @ 11,1 K	Mixing Box Fan Airflow (L/s)
Zone 1	165	165	16.84	0.0	-	0.0	-	0

	Zone		Zone	Zone
--	------	--	------	------

Zone Sizing Summary for AGENTE DE SAUDE

Project Name: SESAB-UBSI-TIPO2
Prepared by: jca

04/14/2025
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Zone Name	Cooling Sensible (kW)	Time of Peak Sensible Cooling Load	Heating Load (kW)	Floor Area (m ²)
Zone 1	1,6	Dec 1600	0,1	9,8

Zone Name / Space Name	Mult.	Cooling Sensible (kW)	Time of Peak Sensible Load	Air Flow (L/s)	Heating Load (kW)	Floor Area (m ²)	Space L/(s·m ²)
Zone 1							
AGENTE DE SAUDE	1	1,6	Dec 1600	165	0,1	9,8	16,84

Space Loads and Airflows

1. Summary

Ventilation Sizing Method Sum of Space OA Airflows

Design Ventilation Airflow Rate 18 L/s

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)
Zone 1									
AGENTE DE SAUDE	1	9,8	2,0	165,0	7,50	0,30	0,0	0,0	17,9
Totals (incl. Space Multipliers)				165,0					17,9

2. Space Ventilation Analysis

Air System Design Load Summary for AGENTE DE SAUDE

Project Name: SESAB-UBSI-TIPO2

04/14/2025

Prepared by: jca

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	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		
ZONE LOADS	Details	Sensible (W)	Latent (W)	Details	Sensible (W)	Latent (W)
Window & Skylight Solar Loads	2 m²	369	-	2 m²	-	-
Wall Transmission	15 m²	658	-	15 m²	48	-
Roof Transmission	9 m²	127	-	9 m²	4	-
Window Transmission	2 m²	53	-	2 m²	9	-
Skylight Transmission	0 m²	0	-	0 m²	0	-
Door Loads	0 m²	0	-	0 m²	0	-
Floor Transmission	9 m²	0	-	9 m²	0	-
Partitions	0 m²	0	-	0 m²	0	-
Ceiling	0 m²	0	-	0 m²	0	-
Overhead Lighting	157 W	131	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	211 W	195	-	0	0	-
People	2	114	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	-	1646	120	-	60	0
Zone Conditioning	-	1590	120	-	0	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Return Fan Load	165 L/s	0	-	165 L/s	0	-
Ventilation Load	18 L/s	150	357	18 L/s	2	0
Supply Fan Load	165 L/s	0	-	165 L/s	0	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	-	1740	477	-	3	0
Central Cooling Coil	-	1740	477	-	0	0
>> Total Conditioning	-	1740	477	-	0	0
Key:	Positive values are clg loads Negative values are htg loads			Positive values are htg loads Negative values are clg loads		

Air System Information

Air System Name
CONSULTORIO
Equipment Class
SPLT AHU Air System Type SZCAV

Total coil load 2,0 kW
Sensible coil load 1,6 kW
Coil L/s at May 1500 165 L/s
Max block L/s 165 L/s
Sum of peak zone L/s 165 L/s
Sensible heat ratio 0,797
L/(s kW) 80,7
m²/kW 6,5
W/m² 154,9
Water flow @ 5,6 K rise N/A

Sizing Calculation Information

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

Supply Fan Sizing Data

Actual max L/s 165 L/s

Central Cooling Coil Sizing Data

Air System Sizing Summary for CONSULTORIO

Project Name: SESAB-UBSI-TIPO2
Prepared by: jca

04/14/2025
09:38

Standard L/s 165 Load occurs at **May 1500**
L/s Actual max OA DB / WB **28,3 / 23,9** °C

Zone Sizing Summary for CONSULTORIO

Project Name: SESAB-UBSI-TIPO2
Prepared by: jca

..... **15,9** 04/14/2025
..... **0,100**
..... **60** %
..... **15,9** °C 09:38

L/(s·m²) 12,50 L/(s·m²)

Zone Test Check **1 of 1** OK
Entering DB / WB °C
Max Zone temperature deviation **0,0** °C
Leaving DB / WB °C
Coil ADP °C
Bypass Factor
Resulting RH

Outdoor Ventilation Air Data

Design airflow L/s 19 L/s
L/(s·m²) 1,44 L/(s·m²)
..... Number
of **13,2** zones
1 **Salvador, Brazil**

Floor Area m² Fan motor BHP 0,00 BHP
Location Fan motor kW 0,00 kW Fan static 0 Pa

Zone L/s Sum of space airflow rates
Sizing Space Individual peak space loads
L/s Sizing L/s/person 9,48 L/s/person

Hourly Analysis Program 5.10

Air System Information

Air System Name CONSULTORIO **13,2**
..... **Salvador, Brazil**
..... Number of zones 1
Equipment Class SPLT AHU Floor Area m²
Air System Type SZCAV Location

Sizing Calculation Information

Calculation Jan to Dec Zone L/s Sum of space airflow rates
Months Calculated Sizing Space Individual peak space loads
L/s Sizing

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (L/s)	Minimum Supply Airflow (L/s)	Zone L/(s·m²)	Reheat Coil Load (kW)	Reheat Coil Water L/s @ 11,1 K	Zone Htg Unit Coil Load (kW)	Zone Htg Unit Water L/s @ 11,1 K	Mixing Box Fan Airflow (L/s)
Zone 1	165	165	12,50	0,0	-	0,0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (kW)	Time of Peak Sensible Cooling Load	Zone Heating Load (kW)	Zone Floor Area (m²)
Zone 1	1,6	Jun 1500	0,0	13,2

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (kW)	Time of Peak Sensible Load	Air Flow (L/s)	Heating Load (kW)	Floor Area (m²)	Space L/(s·m²)
Zone 1							
CONSULTORIO	1	1,6	Jun 1500	165	0,0	13,2	12,50

1. Summary

Ventilation Sizing Method Sum of Space OA Airflows

Design Ventilation Airflow Rate 19 L/s

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)
Zone 1									
CONSULTORIO	1	13,2	2,0	165,0	7,50	0,30	0,0	0,0	19,0
Totals (incl. Space Multipliers)				165,0					19,0

2. Space Ventilation Analysis

Air System Design Load Summary for CONSULTORIO

Project Name: SESAB-UBSI-TIPO2

04/14/2025

Prepared by: jca

09:38

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT May 1500			HEATING DATA AT DES HTG		
	COOLING OA DB / WB 28,3 °C / 23,9 °C			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	2 m²	563	-	2 m²	-	-
Wall Transmission	7 m²	319	-	7 m²	23	-
Roof Transmission	13 m²	126	-	13 m²	5	-
Window Transmission	2 m²	27	-	2 m²	9	-
Skylight Transmission	0 m²	0	-	0 m²	0	-
Door Loads	0 m²	0	-	0 m²	0	-
Floor Transmission	12 m²	0	-	12 m²	0	-
Partitions	0 m²	0	-	0 m²	0	-
Ceiling	0 m²	0	-	0 m²	0	-
Overhead Lighting	211 W	173	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	284 W	261	-	0	0	-
People	2	112	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	-	1582	120	-	37	0
Zone Conditioning	-	1543	120	-	0	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Return Fan Load	165 L/s	0	-	165 L/s	0	-
Ventilation Load	19 L/s	87	294	19 L/s	5	0
Supply Fan Load	165 L/s	0	-	165 L/s	0	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	-	1630	414	-	5	0
Central Cooling Coil	-	1630	414	-	0	0
>> Total Conditioning	-	1630	414	-	0	0
Key:	Positive values are clg loads Negative values are htg loads			Positive values are htg loads Negative values are clg loads		

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e 8
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Air System Information

Air System Name
CONSULTÓRIO ODONTO
Equipment Class
SPLT AHU Air System Type SZCAV

Total coil load 2,2 kW
Sensible coil load 1,6 kW
Coil L/s at Feb 1500 165 L/s
Max block L/s 165 L/s
Sum of peak zone L/s 165 L/s
Sensible heat ratio 0,726
L/(s kW) 74,1
m²/kW 5,6
W/m² 179,7
Water flow @ 5,6 K rise N/A

Sizing Calculation Information

Calculation Months Jan to Dec
Sizing Data Calculated

Central Cooling Coil Sizing Data

Air System Sizing Summary for CONSULTÓRIO ODONTO

Project Name: SESAB-UBSI-TIPO2
Prepared by: jca

04/14/2025
09:38

Supply Fan Sizing Data

Actual max L/s 165 L/s Load occurs at **Feb 1500**
 OA DB / WB **32,2 / 25,6** °C
 **25,7 / 20,7**
 **17,6 / 17,1**

Zone Sizing Summary for CONSULTÓRIO ODONTO

Project Name: SESAB-UBSI-TIPO2
Prepared by: jca

04/14/2025
09:38

Design supply temp. **16,9** °C
 Zone T DB / Check **1 of 1** OK
 Max zone temperature deviation **0,0** K
 Leaving DB / WB °C
 Coil ADP °C
 Bypass Factor
 Resulting RH

Standard L/s 165 L/s Actual max L/(s·m²) 13,31 L/(s·m²)

Outdoor Ventilation Air Data

Design airflow L/s 26 L/s
 L/(s·m²) 2,11 L/(s·m²)
 Number
 of **12,4** zones
 1 **Salvador, Brazil**

Floor Area m² Fan motor BHP 0,00 BHP
 Location Fan motor kW 0,00 kW Fan static 0 Pa

Zone L/s Sum of space airflow rates
 Sizing Space Individual peak space loads
 L/s Sizing L/s/person 8,74 L/s/person

Hourly Analysis Program 5.10

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Air System Information

Air System Name CONSULTÓRIO ODONTO
 **12,4**
 **Salvador, Brazil**
 Equipment Class SPLT AHU Number of zones 1
 Air System Type SZCAV Floor Area m²
 Location

Sizing Calculation Information

Calculation Jan to Dec Zone L/s Sum of space airflow rates
 Months Calculated Sizing Space Individual peak space loads
 Sizing Data L/s Sizing

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (L/s)	Minimum Supply Airflow (L/s)	Zone L/(s·m²)	Reheat Coil Load (kW)	Reheat Coil Water L/s @ 11,1 K	Zone Htg Unit Coil Load (kW)	Zone Htg Unit Water L/s @ 11,1 K	Mixing Box Fan Airflow (L/s)
Zone 1	165	165	13,31	0,0	-	0,0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (kW)	Time of Peak Sensible Cooling Load	Zone Heating Load (kW)	Zone Floor Area (m²)
Zone 1	1,4	Jan 1500	0,0	12,4

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (kW)	Time of Peak Sensible Load	Air Flow (L/s)	Heating Load (kW)	Floor Area (m²)	Space L/(s·m²)
Zone 1							
CONS. ODONT	1	1,4	Jan 1500	165	0,0	12,4	13,31

1. Summary

Ventilation Sizing Method Sum of Space OA Airflows

Design Ventilation Airflow Rate 26 L/s

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)
Zone 1									
CONS. ODONT	1	12,4	3,0	165,0	7,50	0,30	0,0	0,0	26,2
Totals (incl. Space Multipliers)				165,0					26,2

2. Space Ventilation Analysis

Air System Design Load Summary for CONSULTÓRIO ODONTO

Project Name: SESAB-UBSI-TIPO2

04/14/2025

Prepared by: jca

09:38

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Feb 1500			HEATING DATA AT DES HTG		
	COOLING OA DB / WB 32,2 °C / 25,6 °C			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	2 m²	375	-	2 m²	-	-
Wall Transmission	5 m²	196	-	5 m²	14	-
Roof Transmission	12 m²	187	-	12 m²	5	-
Window Transmission	2 m²	58	-	2 m²	9	-
Skylight Transmission	0 m²	0	-	0 m²	0	-
Door Loads	0 m²	0	-	0 m²	0	-
Floor Transmission	12 m²	0	-	12 m²	0	-
Partitions	0 m²	0	-	0 m²	0	-
Ceiling	0 m²	0	-	0 m²	0	-
Overhead Lighting	198 W	163	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	267 W	245	-	0	0	-
People	3	167	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	-	1392	180	-	28	0
Zone Conditioning	-	1372	180	-	-4	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Return Fan Load	165 L/s	0	-	165 L/s	0	-
Ventilation Load	26 L/s	246	430	26 L/s	6	0
Supply Fan Load	165 L/s	0	-	165 L/s	0	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	-	1618	610	-	3	0
Central Cooling Coil	-	1618	611	-	0	0
>> Total Conditioning	-	1618	611	-	0	0
Key:	Positive values are clg loads Negative values are htg loads			Positive values are htg loads Negative values are clg loads		

Air System Information

Air System Name
COPA
Equipment Class
SPLT AHU Air System Type SZCAV

Total coil load 1,9 kW
Sensible coil load 1,4 kW
Coil L/s at Dec 1600 165 L/s
Max block L/s 165 L/s
Sum of peak zone L/s 165 L/s
Sensible heat ratio 0,719
L/(s kW) 87,4
m²/kW 5,0
W/m² 198,8
Water flow @ 5,6 K rise N/A

Sizing Calculation Information

Calculation Months Jan to Dec
Sizing Data Calculated

Central Cooling Coil Sizing Data

Air System Sizing Summary for COPA

Project Name: SESAB-UBSI-TIPO2

04/14/2025

Prepared by: jca

09:38

Supply Fan Sizing Data

Actual max L/s 165 L/s

Zone Sizing Summary for COPA

Project Name: SESAB-UBSI-TIPO2

04/14/2025

Prepared by: jca

09:38

Standard L/s 165 L/s Actual max L/(s·m²) 17,37 L/(s·m²)

Zone L/s Sum of space airflow rates

Sizing Space Individual peak space loads

L/s Sizing

Load occurs at **Dec 1600**

OA DB / WB **31,5 / 25,5** °C

Entering DB / WB **25,6 / 21,4** °C

Leaving DB / WB **18,8 / 18,4** °C

Coil ADP **18,1** °C

Bypass Factor **0,100** %

Resulting RH **70** %

Design supply temp. **17,9** °C

Zone total ADP **16,90** kW

Max zone temperature deviation **0,0** K

Outdoor Ventilation Air Data

Design airflow L/s 25 L/s

L/(s·m²) 2,67 L/(s·m²)

of Number

1 **Salvador, Brazil** zones

Floor Area m²

Location 9,5 m²

Fan motor kW 0,00 kW Fan static 0 Pa

Hourly Analysis Program 5.10

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Air System Information

Air System Name COPA

L/s/person 8,45 L/s/person

..... **Salvador, Brazil**

Number of zones 1

Floor Area 9,5 m²

Location

Equipment Class SPLT AHU

Air System Type SZCAV

Sizing Calculation Information

Calculation Jan to Dec

Zone L/s Sum of space airflow rates

Months Calculated

Sizing Space Individual peak space loads

Sizing Data

L/s Sizing

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (L/s)	Minimum Supply Airflow (L/s)	Zone L/(s·m²)	Reheat Coil Load (kW)	Reheat Coil Water L/s @ 11,1 K	Zone Htg Unit Coil Load (kW)	Zone Htg Unit Water L/s @ 11,1 K	Mixing Box Fan Airflow (L/s)
Zone 1	165	165	17,37	0,0	-	0,0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (kW)	Time of Peak Sensible Cooling Load	Zone Heating Load (kW)	Zone Floor Area (m²)
Zone 1	1,2	Dec 1600	0,0	9,5

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (kW)	Time of Peak Sensible Load	Air Flow (L/s)	Heating Load (kW)	Floor Area (m²)	Space L/(s·m²)
Zone 1							
COPA	1	1,2	Dec 1600	165	0,0	9,5	17,37

1. Summary

Ventilation Sizing Method Sum of Space OA Airflows

Design Ventilation Airflow Rate 25 L/s

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)
Zone 1									
COPA	1	9,5	3,0	165,0	7,50	0,30	0,0	0,0	25,4
Totals (incl. Space Multipliers)				165,0					25,4

2. Space Ventilation Analysis

Air System Design Load Summary for COPA

Project Name: SESAB-UBSI-TIPO2
Prepared by: jca

04/14/2025
09:38

	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		
ZONE LOADS	Details	Sensible (W)	Latent (W)	Details	Sensible (W)	Latent (W)
Window & Skylight Solar Loads	1 m²	182	-	1 m²	-	-
Wall Transmission	10 m²	411	-	10 m²	31	-
Roof Transmission	6 m²	83	-	6 m²	2	-
Window Transmission	1 m²	26	-	1 m²	4	-
Skylight Transmission	0 m²	0	-	0 m²	0	-
Door Loads	0 m²	0	-	0 m²	0	-
Floor Transmission	6 m²	0	-	6 m²	0	-
Partitions	0 m²	0	-	0 m²	0	-
Ceiling	0 m²	0	-	0 m²	0	-
Overhead Lighting	152 W	127	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	204 W	189	-	0	0	-
People	3	170	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	-	1188	180	-	37	0
Zone Conditioning	-	1147	180	-	0	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Return Fan Load	165 L/s	0	-	165 L/s	0	-
Ventilation Load	25 L/s	211	351	25 L/s	4	0
Supply Fan Load	165 L/s	0	-	165 L/s	0	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	-	1358	531	-	4	0
Central Cooling Coil	-	1358	531	-	0	0
>> Total Conditioning	-	1358	531	-	0	0
Key:	Positive values are clg loads Negative values are htg loads			Positive values are htg loads Negative values are clg loads		

Air System Information

Air System Name
ESTERILIZAÇÃO Equipment Class SPLT AHU Air
System Type SZCAV

Total coil load 0,9 kW
Sensible coil load 0,8 kW
Coil L/s at Dec 1600 165 L/s
Max block L/s 165 L/s
Sum of peak zone L/s 165 L/s
Sensible heat ratio 0,849
L/s kW) 173,7
m²/kW 7,9
W/m² 126,6
Water flow @ 5,6 K rise N/A

Sizing Calculation Information

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

Supply Fan Sizing Data

Actual max L/s 165 L/s

Central Cooling Coil Sizing Data

Air System Sizing Summary for ESTERILIZAÇÃO

Project Name: SESAB-UBSI-TIPO2
Prepared by: jca

04/14/2025
09:38

Standard L/s 165
L/s Actual max

Zone Sizing Summary for ESTERILIZAÇÃO

Project Name: SESAB-UBSI-TIPO2
Prepared by: jca

04/14/2025
09:38

L/(s·m²) 22,00 L/(s·m²)

Outdoor Ventilation Air Data

Design airflow L/s 10 L/s
L/(s·m²) 1,30 L/(s·m²)
Number of zones
1 **Salvador, Brazil**
Floor Area
.....
..... 7,5 m²
Location

Zone L/s Sum of space airflow rates
Sizing Space Individual peak space loads
L/s Sizing
Load occurs at **Dec 1600**
OA DB / WB **31,5 / 25,5** °C
Entering DB / WB **25,0 / 22,0** °C
Leaving DB / WB **20,9 / 20,6** °C
Coil ADP **20,5** °C
Bypass Factor **0,100**
Resulting RH **79** %
Design supply temp. **20,1** °C
Zone motor RH **10,0** °C
Zone T stat Check **OK**
Max zone temperature deviation **0,0** K

Fan motor kW 0,00 kW Fan static 0 Pa

Hourly Analysis Program 5.10

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Air System Information

Air System Name ESTERILIZAÇÃO
.....
.....
Number of zones
Equipment Class SPLT AHU
Air System Type SZCAV

L/s/person 9,75 L/s/person
.....
..... **Salvador, Brazil**
1
Floor Area 7,5 m²
Location

Sizing Calculation Information

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

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

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (L/s)	Minimum Supply Airflow (L/s)	Zone L/(s·m²)	Reheat Coil Load (kW)	Reheat Coil Water L/s @ 11,1 K	Zone Htg Unit Coil Load (kW)	Zone Htg Unit Water L/s @ 11,1 K	Mixing Box Fan Airflow (L/s)
Zone 1	165	165	22,00	0,0	-	0,0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (kW)	Time of Peak Sensible Cooling Load	Zone Heating Load (kW)	Zone Floor Area (m²)
Zone 1	0,8	Dec 1600	0,0	7,5

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (kW)	Time of Peak Sensible Load	Air Flow (L/s)	Heating Load (kW)	Floor Area (m²)	Space L/(s·m²)
Zone 1							
ESTERILIZAÇÃO	1	0,8	Dec 1600	165	0,0	7,5	22,00

1. Summary

Ventilation Sizing Method Sum of Space OA Airflows

Design Ventilation Airflow Rate 10 L/s

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)
Zone 1									
ESTERILIZAÇÃO	1	7,5	1,0	165,0	7,50	0,30	0,0	0,0	9,8
Totals (incl. Space Multipliers)				165,0					9,8

2. Space Ventilation Analysis

Air System Design Load Summary for ESTERILIZAÇÃO

Project Name: SESAB-UBSI-TIPO2
Prepared by: jca

04/14/2025
09:38

	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		
ZONE LOADS	Details	Sensible (W)	Latent (W)	Details	Sensible (W)	Latent (W)
Window & Skylight Solar Loads	1 m²	182	-	1 m²	-	-
Wall Transmission	3 m²	126	-	3 m²	9	-
Roof Transmission	8 m²	112	-	8 m²	3	-
Window Transmission	1 m²	26	-	1 m²	4	-
Skylight Transmission	0 m²	0	-	0 m²	0	-
Door Loads	0 m²	0	-	0 m²	0	-
Floor Transmission	7 m²	0	-	7 m²	0	-
Partitions	0 m²	0	-	0 m²	0	-
Ceiling	0 m²	0	-	0 m²	0	-
Overhead Lighting	120 W	100	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	161 W	149	-	0	0	-
People	1	57	60	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	-	753	60	-	17	0
Zone Conditioning	-	724	60	-	0	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Return Fan Load	165 L/s	0	-	165 L/s	0	-
Ventilation Load	10 L/s	82	83	10 L/s	4	0
Supply Fan Load	165 L/s	0	-	165 L/s	0	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	-	806	143	-	4	0
Central Cooling Coil	-	806	144	-	0	0
>> Total Conditioning	-	806	144	-	0	0
Key:	Positive values are clg loads Negative values are htg loads			Positive values are htg loads Negative values are clg loads		

Air System Information

Air System Name
ESTOQUE
Equipment Class
SPLT AHU Air System Type SZCAV

Total coil load 1,3 kW
Sensible coil load 1,0 kW
Coil L/s at Dec 1500 165 L/s
Max block L/s 165 L/s
Sum of peak zone L/s 165 L/s
Sensible heat ratio 0,779
L/(s kW) 123,8
m²/kW 2,9
W/m² 350,8
Water flow @ 5,6 K rise N/A

Sizing Calculation Information

Calculation Months Jan to Dec
Sizing Data Calculated

Central Cooling Coil Sizing Data

Air System Sizing Summary for ESTOQUE

Project Name: SESAB-UBSI-TIPO2
Prepared by: jca

04/14/2025
09:38

Supply Fan Sizing Data

Actual max L/s 165 L/s

Zone Sizing Summary for ESTOQUE

Project Name: SESAB-UBSI-TIPO2
Prepared by: jca

04/14/2025
09:38

Standard L/s 165 L/s Actual max L/(s·m²) 43,42 L/(s·m²)

Outdoor Ventilation Air Data

Design airflow L/s 16 L/s
L/(s·m²) 4,25 L/(s·m²)
Number of zones
1 **Salvador, Brazil**
Floor Area
3,8 m²
Location

Zone L/s Sum of space airflow rates
Sizing Space Individual peak space loads
L/s Sizing
Load occurs at **Dec 1500**
OA DB / WB **31,7 / 25,6** °C
Entering DB / WB **25,3 / 21,7** °C
Leaving DB / WB **20,0 / 19,7** °C
Coil ADP **19,5** °C
Bypass Factor **0,100**
Resulting RH **75** %
Design supply temp. **19,2** °C
Zone total ADP **1,600** kW
Zone total Check **1,600** kW
Max zone temperature deviation **0,0** K

Fan motor kW 0,00 kW Fan static 0 Pa

Hourly Analysis Program 5.10

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Air System Information

Air System Name ESTOQUE L/s/person 8,07 L/s/person
Number of zones
1 **Salvador, Brazil**
Equipment Class SPLT AHU Floor Area 3,8 m²
Air System Type SZCAV Location

Sizing Calculation Information

Calculation Jan to Dec Zone L/s Sum of space airflow rates
Months Sizing Data Calculated Sizing Space Individual peak space loads
L/s Sizing

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (L/s)	Minimum Supply Airflow (L/s)	Zone L/(s·m²)	Reheat Coil Load (kW)	Reheat Coil Water L/s @ 11,1 K	Zone Htg Unit Coil Load (kW)	Zone Htg Unit Water L/s @ 11,1 K	Mixing Box Fan Airflow (L/s)
Zone 1	165	165	43,42	0,0	-	0,0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (kW)	Time of Peak Sensible Cooling Load	Zone Heating Load (kW)	Zone Floor Area (m²)
Zone 1	0,9	Dec 1500	0,0	3,8

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (kW)	Time of Peak Sensible Load	Air Flow (L/s)	Heating Load (kW)	Floor Area (m²)	Space L/(s·m²)
Zone 1							
ESTOQUE	1	0,9	Dec 1500	165	0,0	3,8	43,42

1. Summary

Ventilation Sizing Method Sum of Space OA Airflows

Design Ventilation Airflow Rate 16 L/s

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)
Zone 1									
ESTOQUE	1	3,8	2,0	165,0	7,50	0,30	0,0	0,0	16,1
Totals (incl. Space Multipliers)				165,0					16,1

2. Space Ventilation Analysis

Air System Design Load Summary for ESTOQUE

Project Name: SESAB-UBSI-TIPO2

04/14/2025

Prepared by: jca

09:38

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Dec 1500			HEATING DATA AT DES HTG		
	COOLING OA DB / WB 31,7 °C / 25,6 °C			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	1 m²	184	-	1 m²	-	-
Wall Transmission	4 m²	144	-	4 m²	11	-
Roof Transmission	23 m²	338	-	23 m²	9	-
Window Transmission	1 m²	26	-	1 m²	4	-
Skylight Transmission	0 m²	0	-	0 m²	0	-
Door Loads	0 m²	0	-	0 m²	0	-
Floor Transmission	4 m²	0	-	4 m²	0	-
Partitions	0 m²	0	-	0 m²	0	-
Ceiling	0 m²	0	-	0 m²	0	-
Overhead Lighting	61 W	50	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	82 W	75	-	0	0	-
People	2	112	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	-	928	120	-	25	0
Zone Conditioning	-	901	120	-	0	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Return Fan Load	165 L/s	0	-	165 L/s	0	-
Ventilation Load	16 L/s	138	174	16 L/s	2	0
Supply Fan Load	165 L/s	0	-	165 L/s	0	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	-	1039	294	-	3	0
Central Cooling Coil	-	1039	294	-	0	0
>> Total Conditioning	-	1039	294	-	0	0
Key:	Positive values are clg loads Negative values are htg loads			Positive values are htg loads Negative values are clg loads		

Air System Information

Air System Name
FARMÁCIA
Equipment Class
SPLT AHU Air System Type SZCAV

Total coil load 1,6 kW
Sensible coil load 1,3 kW
Coil L/s at Jan 1500 165 L/s
Max block L/s 165 L/s
Sum of peak zone L/s 165 L/s
Sensible heat ratio 0,781
L/(s kW) 101,9
m²/kW 5,6
W/m² 179,9
Water flow @ 5,6 K rise N/A

Sizing Calculation Information

Calculation Months Jan to Dec
Sizing Data Calculated

Central Cooling Coil Sizing Data

Air System Sizing Summary for FARMÁCIA

Project Name: SESAB-UBSI-TIPO2
Prepared by: jca

04/14/2025
09:38

Supply Fan Sizing Data

Actual max L/s 165 L/s

Zone Sizing Summary for FARMÁCIA

Project Name: SESAB-UBSI-TIPO2
Prepared by: jca

04/14/2025
09:38

Standard L/s 165 L/s Actual max L/(s·m²) 18,33 L/(s·m²)

Zone L/s Sum of space airflow rates

Sizing Space Individual peak space loads

L/s Sizing

Load occurs at **Jan 1500**

OA DB / WB **32,2 / 25,6** °C

Entering DB / WB **25,3 / 21,1** °C

Leaving DB / WB **18,9 / 18,5** °C

Coil ADP **18,2** °C

Bypass Factor **0,100** %

Resulting RH **70** %

Design supply temp. **18,3** °C

Zone total ADP **18,3** kW

Max zone temperature deviation **0,0** K

Outdoor Ventilation Air Data

Design airflow L/s 18 L/s

L/(s·m²) 1,97 L/(s·m²)

Number of zones

1 **Salvador, Brazil**

Floor Area

9,0 m²

Location

9,0 m²

Location

Fan motor kW 0,00 kW Fan static 0 Pa

Hourly Analysis Program 5.10

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Air System Information

Air System Name FARMÁCIA

L/s/person 8,85 L/s/person

Number of zones

1 **Salvador, Brazil**

Equipment Class SPLT AHU

Air System Type SZCAV

Floor Area 9,0 m²

Location

Sizing Calculation Information

Calculation Jan to Dec

Months Sizing Data Calculated

Zone L/s Sum of space airflow rates

Sizing Space Individual peak space loads

L/s Sizing

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (L/s)	Minimum Supply Airflow (L/s)	Zone L/(s·m²)	Reheat Coil Load (kW)	Reheat Coil Water L/s @ 11,1 K	Zone Htg Unit Coil Load (kW)	Zone Htg Unit Water L/s @ 11,1 K	Mixing Box Fan Airflow (L/s)
Zone 1	165	165	18,33	0,0	-	0,0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (kW)	Time of Peak Sensible Cooling Load	Zone Heating Load (kW)	Zone Floor Area (m²)
Zone 1	1,1	Jan 1500	0,0	9,0

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (kW)	Time of Peak Sensible Load	Air Flow (L/s)	Heating Load (kW)	Floor Area (m²)	Space L/(s·m²)
Zone 1							
FARMÁCIA	1	1,1	Jan 1500	165	0,0	9,0	18,33

1. Summary

Ventilation Sizing Method Sum of Space OA Airflows

Design Ventilation Airflow Rate 18 L/s

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)
Zone 1									
FARMÁCIA	1	9,0	2,0	165,0	7,50	0,30	0,0	0,0	17,7
Totals (incl. Space Multipliers)				165,0					17,7

2. Space Ventilation Analysis

Air System Design Load Summary for FARMÁCIA

Project Name: SESAB-UBSI-TIPO2

04/14/2025

Prepared by: jca

09:38

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jan 1500			HEATING DATA AT DES HTG		
	COOLING OA DB / WB 32,2 °C / 25,6 °C			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	1 m²	187	-	1 m²	-	-
Wall Transmission	8 m²	352	-	8 m²	25	-
Roof Transmission	9 m²	138	-	9 m²	4	-
Window Transmission	1 m²	29	-	1 m²	4	-
Skylight Transmission	0 m²	0	-	0 m²	0	-
Door Loads	0 m²	0	-	0 m²	0	-
Floor Transmission	9 m²	0	-	9 m²	0	-
Partitions	0 m²	0	-	0 m²	0	-
Ceiling	0 m²	0	-	0 m²	0	-
Overhead Lighting	144 W	118	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	194 W	178	-	0	0	-
People	2	112	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	-	1114	120	-	33	0
Zone Conditioning	-	1098	120	-	0	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Return Fan Load	165 L/s	0	-	165 L/s	0	-
Ventilation Load	18 L/s	166	234	18 L/s	4	0
Supply Fan Load	165 L/s	0	-	165 L/s	0	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	-	1264	354	-	4	0
Central Cooling Coil	-	1264	354	-	0	0
>> Total Conditioning	-	1264	354	-	0	0
Key:	Positive values are clg loads Negative values are htg loads			Positive values are htg loads Negative values are clg loads		

Air System Information

Air System Name
 RECEPÇÃO
 Equipment Class
 SPLT AHU Air System Type SZCAV

Total coil load **11,8** kW
 Sensible coil load **7,6** kW
 Coil L/s at Dec 1500 **260** L/s
 Max block L/s **260** L/s
 Sum of peak zone L/s **260** L/s
 Sensible heat ratio **0,642**
 L/(s kW) **21,9**
 m²/kW **3,3**
 W/m² **304,1**
 Water flow @ 5,6 K rise **N/A**

Sizing Calculation Information

Calculation Months Jan to Dec
 Sizing Data Calculated

Central Cooling Coil Sizing Data

Air System Sizing Summary for RECEPÇÃO

Project Name: SESAB-UBSI-TIPO2
Prepared by: jca

04/14/2025
09:38

Supply Fan Sizing Data

Actual max L/s 260 L/s Load occurs at **Dec 1500**
 OA DB / WB **31,7 / 25,6** °C
 **27,2 / 18,7**
 **2,9 / 2,6**
 **0,2**
 **0,100**

Zone Sizing Summary for RECEPÇÃO

Project Name: SESAB-UBSI-TIPO2
Prepared by: jca

04/14/2025
09:38

Design supply temp.
Zone T-stat Check

Standard L/s 260 L/s Actual max L/(s·m²) 6,68 L/(s·m²)

Max zone temperature deviation **0,0** K
 Entering DB / WB °C
 Leaving DB / WB °C
 Coil ADP °C
 Bypass Factor
 Resulting RH 28 %
 1,7 °C
 1 of 1 OK

Outdoor Ventilation Air Data

Design airflow L/s 94 L/s
 L/(s·m²) 2,42 L/(s·m²)
 Number
 of **38,9** zones
 1 **Salvador, Brazil**

Floor Area m²
Location

Fan motor BHP 0,00 BHP
 Fan motor kW 0,00 kW Fan static 0 Pa

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

L/s/person 8,56 L/s/person

Hourly Analysis Program 5.10

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Air System Information

Air System Name RECEPÇÃO Number of zones
 1
 Equipment Class SPLT AHU **38,9** Floor Area
 m² **Salvador, Brazil**
 Air System Type SZCAV Location

Sizing Calculation Information

Calculation Jan to Dec Zone L/s Sum of space airflow rates
 Calculated Sizing Space Individual peak space loads
 Months Sizing Data L/s Sizing

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (L/s)	Minimum Supply Airflow (L/s)	Zone L/(s·m²)	Reheat Coil Load (kW)	Reheat Coil Water L/s @ 11,1 K	Zone Htg Unit Coil Load (kW)	Zone Htg Unit Water L/s @ 11,1 K	Mixing Box Fan Airflow (L/s)
Zone 1	260	260	6,68	0,0	-	0,0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (kW)	Time of Peak Sensible Cooling Load	Zone Heating Load (kW)	Zone Floor Area (m²)
Zone 1	7,0	Jan 1500	0,2	38,9

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (kW)	Time of Peak Sensible Load	Air Flow (L/s)	Heating Load (kW)	Floor Area (m²)	Space L/(s·m²)
Zone 1							
RECEPÇÃO	1	7,0	Jan 1500	260	0,2	38,9	6,68

1. Summary

Ventilation Sizing Method Sum of Space OA Airflows

Design Ventilation Airflow Rate 94 L/s

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)
Zone 1									
RECEPÇÃO	1	38,9	11,0	259,7	7,50	0,30	0,0	0,0	94,2
Totals (incl. Space Multipliers)				165,0					94,2

2. Space Ventilation Analysis

Air System Design Load Summary for RECEPÇÃO

Project Name: SESAB-UBSI-TIPO2
Prepared by: jca

04/14/2025
09:38

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Dec 1500			HEATING DATA AT DES HTG		
	COOLING OA DB / WB 31,7 °C / 25,6 °C			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	28 m²	3282	-	28 m²	-	-
Wall Transmission	12 m²	492	-	12 m²	39	-
Roof Transmission	39 m²	581	-	39 m²	15	-
Window Transmission	28 m²	680	-	28 m²	113	-
Skylight Transmission	0 m²	0	-	0 m²	0	-
Door Loads	0 m²	0	-	0 m²	0	-
Floor Transmission	39 m²	0	-	39 m²	0	-
Partitions	0 m²	0	-	0 m²	0	-
Ceiling	0 m²	0	-	0 m²	0	-
Overhead Lighting	622 W	511	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	836 W	770	-	0	0	-
People	11	613	661	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	-	6930	661	-	167	0
Zone Conditioning	-	6797	661	-	-10	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Return Fan Load	260 L/s	0	-	260 L/s	0	-
Ventilation Load	94 L/s	803	3570	94 L/s	12	0
Supply Fan Load	260 L/s	0	-	260 L/s	0	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	-	7600	4231	-	2	0
Central Cooling Coil	-	7600	4231	-	0	0
>> Total Conditioning	-	7600	4231	-	0	0
Key:	Positive values are clg loads Negative values are htg loads			Positive values are htg loads Negative values are clg loads		

Air System Information

Air System Name
SALA ADM
Equipment Class
SPLT AHU Air System Type SZCAV

Total coil load 3,6 kW
Sensible coil load 2,2 kW
Coil L/s at Jan 1500 165 L/s
Max block L/s 165 L/s
Sum of peak zone L/s 165 L/s
Sensible heat ratio 0,608
L/(s kW) 45,7
m²/kW 2,8
W/m² 361,3
Water flow @ 5,6 K rise N/A

Sizing Calculation Information

Calculation Months Jan to Dec
Sizing Data Calculated

Central Cooling Coil Sizing Data

Air System Sizing Summary for SALA ADM

Project Name: SESAB-UBSI-TIPO2
Prepared by: jca

04/14/2025
09:38

Supply Fan Sizing Data

Actual max L/s 165 L/s Load occurs at **Jan 1500**
 OA DB / WB **32,2 / 25,6** °C
 **27,3 / 21,6**

Zone Sizing Summary for SALA ADM

Project Name: SESAB-UBSI-TIPO2
Prepared by: jca

04/14/2025
09:38

Design supply temp. **15,0** °C
 Zone T-stat Check **0 of 1** OK
 Max zone temperature deviation **0,0** K

Standard L/s 165 L/s Actual max L/(s·m²) 16,50 L/(s·m²)

Entering DB / WB °C
 Leaving DB / WB °C
 Coil ADP °C
 Bypass Factor
 Resulting RH

Outdoor Ventilation Air Data

Design airflow L/s 56 L/s
 L/(s·m²) 5,55 L/(s·m²)
 Number **10,0**
 of zones
 1 **Salvador, Brazil**

Floor Area m² Fan motor BHP 0,00 BHP
 Location Fan motor kW 0,00 kW Fan static 0 Pa

Zone L/s Sum of space airflow rates
 Sizing Space Individual peak space loads
 L/s Sizing L/s/person 7,93 L/s/person

Hourly Analysis Program 5.10

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Air System Information

Air System Name SALA ADM Number of zones
 1
 Equipment Class SPLT AHU **10,0** Floor Area
 m² **Salvador, Brazil**
 Air System Type SZCAV Location

Sizing Calculation Information

Calculation Jan to Dec Zone L/s Sum of space airflow rates
 Months Calculated Sizing Space Individual peak space loads
 Sizing Data L/s Sizing

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (L/s)	Minimum Supply Airflow (L/s)	Zone L/(s·m²)	Reheat Coil Load (kW)	Reheat Coil Water L/s @ 11,1 K	Zone Htg Unit Coil Load (kW)	Zone Htg Unit Water L/s @ 11,1 K	Mixing Box Fan Airflow (L/s)
Zone 1	165	165	16,50	0,0	-	0,0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (kW)	Time of Peak Sensible Cooling Load	Zone Heating Load (kW)	Zone Floor Area (m²)
Zone 1	1,8	Jan 1500	0,0	10,0

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (kW)	Time of Peak Sensible Load	Air Flow (L/s)	Heating Load (kW)	Floor Area (m²)	Space L/(s·m²)
Zone 1							
SL ADM	1	1,8	Jan 1500	165	0,0	10,0	16,50

1. Summary

Ventilation Sizing Method Sum of Space OA Airflows

Design Ventilation Airflow Rate 56 L/s

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)
Zone 1									
SL ADM	1	10,0	7,0	165,0	7,50	0,30	0,0	0,0	55,5
Totals (incl. Space Multipliers)				165,0					55,5

2. Space Ventilation Analysis

Air System Design Load Summary for SALA ADM

Project Name: SESAB-UBSI-TIPO2

04/14/2025

Prepared by: jca

09:38

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jan 1500			HEATING DATA AT DES HTG		
	COOLING OA DB / WB 32,2 °C / 25,6 °C			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	2 m²	379	-	2 m²	-	-
Wall Transmission	10 m²	415	-	10 m²	30	-
Roof Transmission	12 m²	190	-	12 m²	5	-
Window Transmission	2 m²	58	-	2 m²	9	-
Skylight Transmission	0 m²	0	-	0 m²	0	-
Door Loads	0 m²	0	-	0 m²	0	-
Floor Transmission	10 m²	0	-	10 m²	0	-
Partitions	0 m²	0	-	0 m²	0	-
Ceiling	0 m²	0	-	0 m²	0	-
Overhead Lighting	160 W	131	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	215 W	198	-	0	0	-
People	7	390	421	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	-	1762	421	-	44	0
Zone Conditioning	-	1697	421	-	-2	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Return Fan Load	165 L/s	0	-	165 L/s	0	-
Ventilation Load	56 L/s	499	997	56 L/s	6	0
Supply Fan Load	165 L/s	0	-	165 L/s	0	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	-	2196	1417	-	4	0
Central Cooling Coil	-	2196	1417	-	0	0
>> Total Conditioning	-	2196	1417	-	0	0
Key:	Positive values are clg loads Negative values are htg loads			Positive values are htg loads Negative values are clg loads		

Air System Information

Air System Name
SALA TI
Equipment Class
SPLT AHU Air System Type SZCAV

Total coil load 0,1 kW
Sensible coil load 0,1 kW
Coil L/s at Jan 1600 165 L/s
Max block L/s 165 L/s
Sum of peak zone L/s 165 L/s
Sensible heat ratio 1,000
L/(s kW) 1101,9
m²/kW 20,0
W/m² 49,9
Water flow @ 5,6 K rise N/A

Sizing Calculation Information

Calculation Months Jan to Dec
Sizing Data Calculated

Central Cooling Coil Sizing Data

Air System Sizing Summary for SALA TI

Project Name: SESAB-UBSI-TIPO2

04/14/2025

Prepared by: jca

09:38

Supply Fan Sizing Data

Actual max L/s 165 L/s

Zone Sizing Summary for SALA TI

Project Name: SESAB-UBSI-TIPO2

04/14/2025

Prepared by: jca

09:38

Standard L/s 165 L/s Actual max L/(s·m²) 55,00 L/(s·m²)

Zone L/s Sum of space airflow rates

Sizing Space Individual peak space loads

L/s Sizing

Load occurs at **Jan 1600**

OA DB / WB **32,0 / 25,5** °C

Entering DB / WB **24,3 / 21,8** °C

Leaving DB / WB **23,5 / 21,6** °C

Coil ADP **23,4** °C

Bypass Factor **0,100** %

Resulting RH **81** %

Design supply temp. **23,2** °C

Zone total ADP **16,90** kW

Max zone temperature deviation **0,0** K

Outdoor Ventilation Air Data

Design airflow L/s 1 L/s

L/(s·m²) 0,30 L/(s·m²)

of Number

1 zones

Location **Salvador, Brazil**

Floor Area m²

.....

..... 3,0 m²

Location

Fan motor kW 0,00 kW Fan static 0 Pa

Hourly Analysis Program 5.10

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Air System Information

Air System Name SALA TI

L/s/person 0,00 L/s/person

.....

..... **Salvador, Brazil**

Number of zones 1

Floor Area 3,0 m²

Location

Equipment Class SPLT AHU

Air System Type SZCAV

Sizing Calculation Information

Calculation Jan to Dec

Months Calculated

Sizing Data

Zone L/s Sum of space airflow rates

Sizing Space Individual peak space loads

L/s Sizing

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (L/s)	Minimum Supply Airflow (L/s)	Zone L/(s·m²)	Reheat Coil Load (kW)	Reheat Coil Water L/s @ 11,1 K	Zone Htg Unit Coil Load (kW)	Zone Htg Unit Water L/s @ 11,1 K	Mixing Box Fan Airflow (L/s)
Zone 1	165	165	55,00	0,0	-	0,0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (kW)	Time of Peak Sensible Cooling Load	Zone Heating Load (kW)	Zone Floor Area (m²)
Zone 1	0,1	Jan 1500	0,0	3,0

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (kW)	Time of Peak Sensible Load	Air Flow (L/s)	Heating Load (kW)	Floor Area (m²)	Space L/(s·m²)
Zone 1							
SL TI	1	0,1	Jan 1500	165	0,0	3,0	55,00

Ventilation Sizing Summary for SALA TI

Project Name: SESAB-UBSI-TIPO2

04/14/2025

Prepared by: jca

09:38

1. Summary

Ventilation Sizing Method Sum of Space OA Airflows

Design Ventilation Airflow Rate 1 L/s

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)
Zone 1									
SL TI	1	3,0	0,0	165,0	7,50	0,30	0,0	0,0	0,9
Totals (incl. Space Multipliers)				165,0					0,9

2. Space Ventilation Analysis

Air System Design Load Summary for SALA TI

Project Name: SESAB-UBSI-TIPO2
Prepared by: jca

04/14/2025
09:38

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jan 1600			HEATING DATA AT DES HTG		
	COOLING OA DB / WB 32,0 °C / 25,5 °C			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	0 m²	0	-	0 m²	-	-
Wall Transmission	0 m²	0	-	0 m²	0	-
Roof Transmission	3 m²	44	-	3 m²	1	-
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	3 m²	0	-	3 m²	0	-
Partitions	0 m²	0	-	0 m²	0	-
Ceiling	0 m²	0	-	0 m²	0	-
Overhead Lighting	48 W	40	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	65 W	60	-	0	0	-
People	0	0	0	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	-	143	0	-	1	0
Zone Conditioning	-	141	0	-	0	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Return Fan Load	165 L/s	0	-	165 L/s	0	-
Ventilation Load	1 L/s	9	7	1 L/s	1	22
Supply Fan Load	165 L/s	0	-	165 L/s	0	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	-	150	7	-	1	22
Central Cooling Coil	-	150	0	-	0	0
>> Total Conditioning	-	150	0	-	0	0
Key:	Positive values are clg loads Negative values are htg loads			Positive values are htg loads Negative values are clg loads		

Air System Information

Air System Name
SL DE
CURATIVOS
Equipment Class SPLT AHU Air System Type SZCAV

Total coil load 1,7 kW
Sensible coil load 1,4 kW
Coil L/s at Feb 1500 165 L/s
Max block L/s 165 L/s
Sum of peak zone L/s 165 L/s
Sensible heat ratio 0,853
L/(s kW) 98,2
m²/kW 7,4
W/m² 135,6
Water flow @ 5,6 K rise N/A

Sizing Calculation Information

Calculation Months Jan to Dec
Sizing Data Calculated

Central Cooling Coil Sizing Data

Air System Sizing Summary for SL DE CURATIVOS

Project Name: SESAB-UBSI-TIPO2
Prepared by: jca

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Supply Fan Sizing Data

Load occurs at **Feb 1500**
OA DB / WB **32,2 / 25,6** °C
25,0 / 20,1
17,8 / 17,3

Actual max L/s 165 L/s

Zone Sizing Summary for SL DE CURATIVOS

Project Name: SESAB-UBSI-TIPO2
Prepared by: jca

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09:38

Design supply temp. **17,1** °C

Zone Temp Check **1 of 1 OK**

Max zone temperature deviation **0,0** °C

Leaving DB / WB

Coil ADP

Bypass Factor

Resulting RH

Standard L/s 165 L/s Actual max L/(s·m²) 13,31 L/(s·m²)

Outdoor Ventilation Air Data

Design airflow L/s 11 L/s

L/(s·m²) 0,90 L/(s·m²)

Number of zones **12,4**

1 **Salvador, Brazil**

Floor Area m²

Location

Fan motor BHP 0,00 BHP

Fan motor kW 0,00 kW Fan static 0 Pa

Zone L/s Sum of space airflow rates

Sizing Space Individual peak space loads

L/s Sizing L/s/person 11,22 L/s/person

Hourly Analysis Program 5.10

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Air System Information

Air System Name SL DE CURATIVOS

Equipment Class SPLT AHU

Air System Type SZCAV

12,4

Salvador, Brazil

Number of zones 1

Floor Area m²

Location

Sizing Calculation Information

Calculation Jan to Dec

Months Sizing Data Calculated

Zone L/s Sum of space airflow rates

Sizing Space Individual peak space loads

L/s Sizing

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (L/s)	Minimum Supply Airflow (L/s)	Zone L/(s·m²)	Reheat Coil Load (kW)	Reheat Coil Water L/s @ 11,1 K	Zone Htg Unit Coil Load (kW)	Zone Htg Unit Water L/s @ 11,1 K	Mixing Box Fan Airflow (L/s)
Zone 1	165	165	13,31	0,0	-	0,0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (kW)	Time of Peak Sensible Cooling Load	Zone Heating Load (kW)	Zone Floor Area (m²)
Zone 1	1,4	Jan 1500	0,0	12,4

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (kW)	Time of Peak Sensible Load	Air Flow (L/s)	Heating Load (kW)	Floor Area (m²)	Space L/(s·m²)
Zone 1							
SL CURATIVO	1	1,4	Jan 1500	165	0,0	12,4	13,31

1. Summary

Ventilation Sizing Method Sum of Space OA Airflows

Design Ventilation Airflow Rate 11 L/s

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)
Zone 1									
SL CURATIVO	1	12,4	1,0	165,0	7,50	0,30	0,0	0,0	11,2
Totals (incl. Space Multipliers)				165,0					11,2

2. Space Ventilation Analysis

Air System Design Load Summary for SL DE CURATIVOS

Project Name: SESAB-UBSI-TIPO2

04/14/2025

Prepared by: jca

09:38

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Feb 1500			HEATING DATA AT DES HTG		
	COOLING OA DB / WB 32,2 °C / 25,6 °C			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	2 m²	375	-	2 m²	-	-
Wall Transmission	6 m²	266	-	6 m²	19	-
Roof Transmission	12 m²	187	-	12 m²	5	-
Window Transmission	2 m²	58	-	2 m²	9	-
Skylight Transmission	0 m²	0	-	0 m²	0	-
Door Loads	0 m²	0	-	0 m²	0	-
Floor Transmission	12 m²	0	-	12 m²	0	-
Partitions	0 m²	0	-	0 m²	0	-
Ceiling	0 m²	0	-	0 m²	0	-
Overhead Lighting	198 W	163	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	267 W	245	-	0	0	-
People	1	56	60	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	-	1350	60	-	33	0
Zone Conditioning	-	1329	60	-	0	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Return Fan Load	165 L/s	0	-	165 L/s	0	-
Ventilation Load	11 L/s	105	187	11 L/s	4	0
Supply Fan Load	165 L/s	0	-	165 L/s	0	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	-	1434	247	-	4	0
Central Cooling Coil	-	1434	247	-	0	0
>> Total Conditioning	-	1434	247	-	0	0
Key:	Positive values are clg loads Negative values are htg loads			Positive values are htg loads Negative values are clg loads		

Air System Information

Air System Name
VACINA
Equipment Class
SPLT AHU Air System Type SZCAV

Total coil load 1,8 kW
Sensible coil load 1,4 kW
Coil L/s at Jan 1600 165 L/s
Max block L/s 165 L/s
Sum of peak zone L/s 165 L/s
Sensible heat ratio 0,781
L/(s kW) 93,7
m²/kW 5,7
W/m² 176,5
Water flow @ 5,6 K rise N/A

Sizing Calculation Information

Calculation Months Jan to Dec
Sizing Data Calculated

Central Cooling Coil Sizing Data

Air System Sizing Summary for VACINA

Project Name: SESAB-UBSI-TIPO2

04/14/2025

Prepared by: jca

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Supply Fan Sizing Data

Actual max L/s 165 L/s
Standard L/s 165 L/s Actual max L/(s·m²) 16,53 L/(s·m²)

Outdoor Ventilation Air Data

Design airflow L/s 18 L/s
L/(s·m²) 1,80 L/(s·m²)
Number
of **10,0** zones
1 **Salvador, Brazil**
Floor Area m²
Location

Zone L/s Sum of space airflow rates
Sizing Space Individual peak space loads
L/s Sizing
Load occurs at **Jan 1600**
OA DB / WB **32,0 / 25,5** °C
Entering DB / WB **25,3 / 20,7** °C
Leaving DB / WB **18,4 / 17,9** °C
Coil ADP **17,6** °C
Bypass Factor **0,100** %
Resulting RH **67** %
Design supply temp. **17,6** °C
Zone T-stat Check **1 of 1** OK
Max zone temperature deviation **0,0** K

Fan motor BHP 0,00 BHP
Fan motor kW 0,00 kW Fan static 0 Pa

L/s/person 9,00 L/s/person

Air System Information

Air System

Name VACINA

10,0

Salvador, Brazil

Zone Sizing Summary for VACINA

Project Name: SESAB-UBSI-TIPO2

04/14/2025

Prepared by: jca

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Equipment Class

SPLT AHU

Air System Type

SZCAV

Number of zones

1

Floor Area

m²

Location

Sizing Calculation Information

Calculation

Jan to Dec

Months

Sizing Data

Calculated

Zone L/s

Sizing Space

Sum of space airflow rates

L/s Sizing

Individual peak space loads

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (L/s)	Minimum Supply Airflow (L/s)	Zone L/(s·m²)	Reheat Coil Load (kW)	Reheat Coil Water L/s @ 11,1 K	Zone Htg Unit Coil Load (kW)	Zone Htg Unit Water L/s @ 11,1 K	Mixing Box Fan Airflow (L/s)
Zone 1	165	165	16,53	0,0	-	0,0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (kW)	Time of Peak Sensible Cooling Load	Zone Heating Load (kW)	Zone Floor Area (m²)
Zone 1	1,3	Jan 1500	0,0	10,0

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (kW)	Time of Peak Sensible Load	Air Flow (L/s)	Heating Load (kW)	Floor Area (m²)	Space L/(s·m²)
Zone 1							
VACINA	1	1,3	Jan 1500	165	0,0	10,0	16,53

Ventilation Sizing Summary for VACINA

Project Name: SESAB-UBSI-TIPO2

04/14/2025

Prepared by: jca

09:38

1. Summary

Ventilation Sizing Method Sum of Space OA Airflows

Design Ventilation Airflow Rate 18 L/s

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)
Zone 1									
VACINA	1	10,0	2,0	165,0	7,50	0,30	0,0	0,0	18,0
Totals (incl. Space Multipliers)				165,0					18,0

2. Space Ventilation Analysis

Air System Design Load Summary for VACINA

Project Name: SESAB-UBSI-TIPO2
Prepared by: jca

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jan 1600			HEATING DATA AT DES HTG		
	COOLING OA DB / WB 32,0 °C / 25,5 °C			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	1 m²	175	-	1 m²	-	-
Wall Transmission	6 m²	247	-	6 m²	19	-
Roof Transmission	23 m²	329	-	23 m²	9	-
Window Transmission	1 m²	28	-	1 m²	4	-
Skylight Transmission	0 m²	0	-	0 m²	0	-
Door Loads	0 m²	0	-	0 m²	0	-
Floor Transmission	5 m²	0	-	5 m²	0	-
Partitions	0 m²	0	-	0 m²	0	-
Ceiling	0 m²	0	-	0 m²	0	-
Overhead Lighting	160 W	133	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	215 W	199	-	0	0	-
People	2	114	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	-	1225	120	-	32	0
Zone Conditioning	-	1211	120	-	0	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Return Fan Load	165 L/s	0	-	165 L/s	0	-
Ventilation Load	18 L/s	165	266	18 L/s	4	0
Supply Fan Load	165 L/s	0	-	165 L/s	0	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	-	1376	386	-	4	0
Central Cooling Coil	-	1376	386	-	0	0
>> Total Conditioning	-	1376	386	-	0	0
Key:	Positive values are clg loads Negative values are htg loads			Positive values are htg loads Negative values are clg loads		