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UNIDADE BÁSICA DE SAÚDE INDÍGENA – TIPO 1 (UBSI)

MEMORIAL DE CÁLCULO CLIMATIZAÇÃO

CLIENTE
SESAB

VOLUME
00/00

REVISÃO
00

DATA
ABR/25

Design Weather Parameters & MSHGs

SESAB-UBSI-TIPO1
jca

04/14/2025
09:41

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

SESAB-UBSI-TIPO1
jca

04/14/2025
09:26

AGENTE DE SAUDE

1. General Details:

Floor Area **9,8** m²
Avg. Ceiling Height **3,0** m
Building Weight **341,8** kg/m²

1.1. OA Ventilation Requirements:

Space Usage **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)**
Wattage **16,00** W/m²
Ballast Multiplier **1,00**
Schedule **UNIR**

2.4. People:

Occupancy **2,0** People
Activity Level **Office Work**
Sensible **71,8** W/person
Latent **60,1** W/person
Schedule **UNIR**

2.2. Task Lighting:

Wattage **0,00** W/m²
Schedule **None**

2.5. Miscellaneous Loads:

Sensible **0** W
Schedule **None**
Latent **0** W
Schedule **None**

2.3. Electrical Equipment:

Wattage **21,50** W/m²
Schedule **UNIR**

3. Walls, Windows, Doors:

Exp.	Wall Gross Area (m ²)	Window 1 Qty.	Window 2 Qty.	Door 1 Qty.
S	12,1	1	0	0
W	8,0	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 Cerâmica**

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

SESAB-UBSI-TIPO1
jca

04/14/2025
09:26

CONS. ODONT

1. General Details:

Floor Area 12,4 m²
Avg. Ceiling Height 3,0 m
Building Weight 341,8 kg/m²

1.1. OA Ventilation Requirements:

Space Usage 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)
Wattage 16,00 W/m²
Ballast Multiplier 1,00
Schedule UNIR

2.4. People:

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

2.2. Task Lighting:

Wattage 0,00 W/m²
Schedule None

2.5. Miscellaneous Loads:

Sensible 0 W
Schedule None
Latent 0 W
Schedule None

2.3. Electrical Equipment:

Wattage 21,50 W/m²
Schedule UNIR

3. Walls, Windows, Doors:

Exp.	Wall Gross Area (m ²)	Window 1 Qty.	Window 2 Qty.	Door 1 Qty.
N	8,6	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	12,4	0	0

4.1. Construction Types for Exposure H

Roof Type Telha Cerâmica

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

SESAB-UBSI-TIPO1
jca

04/14/2025
09:26

CONSULTORIO

1. General Details:

Floor Area 13,2 m²
Avg. Ceiling Height 3,0 m
Building Weight 341,8 kg/m²

1.1. OA Ventilation Requirements:

Space Usage 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)
Wattage 16,00 W/m²
Ballast Multiplier 1,00
Schedule UNIR

2.4. People:

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

2.2. Task Lighting:

Wattage 0,00 W/m²
Schedule None

2.5. Miscellaneous Loads:

Sensible 0 W
Schedule None
Latent 0 W
Schedule None

2.3. Electrical Equipment:

Wattage 21,50 W/m²
Schedule UNIR

3. Walls, Windows, Doors:

Exp.	Wall Gross Area (m ²)	Window 1 Qty.	Window 2 Qty.	Door 1 Qty.
N	11,2	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 Cerâmica

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

SESAB-UBSI-TIPO1
jca

04/14/2025
09:26

COPA

1. General Details:

Floor Area **5,9** m²
Avg. Ceiling Height **3,0** m
Building Weight **341,8** kg/m²

1.1. OA Ventilation Requirements:

Space Usage **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)**
Wattage **16,00** W/m²
Ballast Multiplier **1,00**
Schedule **UNIR**

2.4. People:

Occupancy **3,0** People
Activity Level **Office Work**
Sensible **71,8** W/person
Latent **60,1** W/person
Schedule **UNIR**

2.2. Task Lighting:

Wattage **0,00** W/m²
Schedule **None**

2.5. Miscellaneous Loads:

Sensible **0** W
Schedule **None**
Latent **0** W
Schedule **None**

2.3. Electrical Equipment:

Wattage **21,50** W/m²
Schedule **UNIR**

3. Walls, Windows, Doors:

Exp.	Wall Gross Area (m ²)	Window 1 Qty.	Window 2 Qty.	Door 1 Qty.
S	10,9	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	5,9	0	0

4.1. Construction Types for Exposure H

Roof Type **Telha Cerâmica**

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 **5,9** 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).

Space Input Data

SESAB-UBSI-TIPO1
jca

04/14/2025
09:26

ESTERILIZAÇÃO

1. General Details:

Floor Area **8,0** m²
Avg. Ceiling Height **3,0** m
Building Weight **341,8** kg/m²

1.1. OA Ventilation Requirements:

Space Usage **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)**
Wattage **16,00** W/m²
Ballast Multiplier **1,00**
Schedule **UNIR**

2.4. People:

Occupancy **1,0** Person
Activity Level **Office Work**
Sensible **71,8** W/person
Latent **60,1** W/person
Schedule **UNIR**

2.2. Task Lighting:

Wattage **0,00** W/m²
Schedule **None**

2.5. Miscellaneous Loads:

Sensible **0** W
Schedule **None**
Latent **0** W
Schedule **None**

2.3. Electrical Equipment:

Wattage **21,50** W/m²
Schedule **UNIR**

3. Walls, Windows, Doors:

Exp.	Wall Gross Area (m ²)	Window 1 Qty.	Window 2 Qty.	Door 1 Qty.
S	10,9	5	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 Cerâmica**

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 **8,0** 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

SESAB-UBSI-TIPO1
jca

04/14/2025
09:26

ESTOQUE

1. General Details:

Floor Area **3,8** m²
Avg. Ceiling Height **3,0** m
Building Weight **341,8** kg/m²

1.1. OA Ventilation Requirements:

Space Usage **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)**
Wattage **16,00** W/m²
Ballast Multiplier **1,00**
Schedule **UNIR**

2.4. People:

Occupancy **2,0** People
Activity Level **Office Work**
Sensible **71,8** W/person
Latent **60,1** W/person
Schedule **UNIR**

2.2. Task Lighting:

Wattage **0,00** W/m²
Schedule **None**

2.5. Miscellaneous Loads:

Sensible **0** W
Schedule **None**
Latent **0** W
Schedule **None**

2.3. Electrical Equipment:

Wattage **21,50** W/m²
Schedule **UNIR**

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**

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 Cerâmica**

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).

Space Input Data

SESAB-UBSI-TIPO1
jca

04/14/2025
09:26

FARMÁCIA

1. General Details:

Floor Area **9,0** m²
Avg. Ceiling Height **3,0** m
Building Weight **341,8** kg/m²

1.1. OA Ventilation Requirements:

Space Usage **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)**
Wattage **16,00** W/m²
Ballast Multiplier **1,00**
Schedule **UNIR**

2.4. People:

Occupancy **2,0** People
Activity Level **Office Work**
Sensible **71,8** W/person
Latent **60,1** W/person
Schedule **UNIR**

2.2. Task Lighting:

Wattage **0,00** W/m²
Schedule **None**

2.5. Miscellaneous Loads:

Sensible **0** W
Schedule **None**
Latent **0** W
Schedule **None**

2.3. Electrical Equipment:

Wattage **21,50** W/m²
Schedule **UNIR**

3. Walls, Windows, Doors:

Exp.	Wall Gross Area (m ²)	Window 1 Qty.	Window 2 Qty.	Door 1 Qty.
S	10,4	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	9,0	0	0

4.1. Construction Types for Exposure H

Roof Type **Telha Cerâmica**

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

SESAB-UBSI-TIPO1
jca

04/14/2025
09:26

RECEPÇÃO

1. General Details:

Floor Area **22,6** m²
Avg. Ceiling Height **3,0** m
Building Weight **341,8** kg/m²

1.1. OA Ventilation Requirements:

Space Usage **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)**
Wattage **16,00** W/m²
Ballast Multiplier **1,00**
Schedule **UNIR**

2.4. People:

Occupancy **11,0** People
Activity Level **Office Work**
Sensible **71,8** W/person
Latent **60,1** W/person
Schedule **UNIR**

2.2. Task Lighting:

Wattage **0,00** W/m²
Schedule **None**

2.5. Miscellaneous Loads:

Sensible **0** W
Schedule **None**
Latent **0** W
Schedule **None**

2.3. Electrical Equipment:

Wattage **21,50** W/m²
Schedule **UNIR**

3. Walls, Windows, Doors:

Exp.	Wall Gross Area (m ²)	Window 1 Qty.	Window 2 Qty.	Door 1 Qty.
S	13,3	1	0	0

3.1. Construction Types for Exposure S

Wall Type **Alvenaria 150mm externa**
1st Window Type **P12**

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 **22,6** 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

SESAB-UBSI-TIPO1
jca

04/14/2025
09:26

SL CURATIVO

1. General Details:

Floor Area 12,4 m²
Avg. Ceiling Height 3,0 m
Building Weight 341,8 kg/m²

1.1. OA Ventilation Requirements:

Space Usage 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)
Wattage 16,00 W/m²
Ballast Multiplier 1,00
Schedule UNIR

2.4. People:

Occupancy 1,0 Person
Activity Level Office Work
Sensible 71,8 W/person
Latent 60,1 W/person
Schedule UNIR

2.2. Task Lighting:

Wattage 0,00 W/m²
Schedule None

2.5. Miscellaneous Loads:

Sensible 0 W
Schedule None
Latent 0 W
Schedule None

2.3. Electrical Equipment:

Wattage 21,50 W/m²
Schedule UNIR

3. Walls, Windows, Doors:

Exp.	Wall Gross Area (m ²)	Window 1 Qty.	Window 2 Qty.	Door 1 Qty.
N	8,6	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	12,4	0	0

4.1. Construction Types for Exposure H

Roof Type Telha Cerâmica

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

SESAB-UBSI-TIPO1
jca

04/14/2025
09:26

SL TI

1. General Details:

Floor Area 5,2 m²
Avg. Ceiling Height 3,0 m
Building Weight 341,8 kg/m²

1.1. OA Ventilation Requirements:

Space Usage 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)
Wattage 16,00 W/m²
Ballast Multiplier 1,00
Schedule UNIR

2.4. People:

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

2.2. Task Lighting:

Wattage 0,00 W/m²
Schedule None

2.5. Miscellaneous Loads:

Sensible 0 W
Schedule None
Latent 0 W
Schedule None

2.3. Electrical Equipment:

Wattage 21,50 W/m²
Schedule UNIR

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 Cerâmica

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).

Space Input Data

SESAB-UBSI-TIPO1
jca

04/14/2025
09:26

VACINA

1. General Details:

Floor Area 10,0 m²
Avg. Ceiling Height 3,0 m
Building Weight 341,8 kg/m²

1.1. OA Ventilation Requirements:

Space Usage 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)
Wattage 16,00 W/m²
Ballast Multiplier 1,00
Schedule UNIR

2.4. People:

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

2.2. Task Lighting:

Wattage 0,00 W/m²
Schedule None

2.5. Miscellaneous Loads:

Sensible 0 W
Schedule None
Latent 0 W
Schedule None

2.3. Electrical Equipment:

Wattage 21,50 W/m²
Schedule UNIR

3. Walls, Windows, Doors:

Exp.	Wall Gross Area (m ²)	Window 1 Qty.	Window 2 Qty.	Door 1 Qty.
S	8,1	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	22,6	0	0

4.1. Construction Types for Exposure H

Roof Type Telha Cerâmica

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-TIPO1
Prepared by: jca

04/14/2025
09:42

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	870	870	235	0	80	108
February	779	779	209	0	72	97
March	881	881	239	0	80	108
April	743	743	197	0	78	104
May	608	608	156	0	80	108
June	530	530	136	0	78	104
July	488	488	125	0	80	108
August	500	500	128	0	80	108
September	593	593	154	0	78	104
October	713	713	187	0	80	108
November	784	784	208	0	78	104
December	924	924	249	0	80	108
Total	8413	8413	2223	0	944	1269

Monthly Simulation Results for CONSULTORIO

Project Name: SESAB-UBSI-TIPO1
Prepared by: jca

04/14/2025
09:42

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	822	822	220	0	108	145
February	756	756	201	0	98	131
March	879	879	237	0	108	145
April	800	800	209	0	105	140
May	701	701	178	0	108	145
June	615	615	157	0	105	140
July	607	607	154	0	108	145
August	604	604	153	0	108	145
September	654	654	168	0	105	140
October	721	721	187	0	108	145
November	744	744	196	0	105	140
December	847	847	227	0	108	145
Total	8750	8750	2288	0	1272	1709

Monthly Simulation Results for CONSULTÓRIO ODONTO

Project Name: SESAB-UBSI-TIPO1
Prepared by: jca

04/14/2025
09:42

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	886	886	236	0	101	136
February	814	814	215	0	92	123
March	949	949	253	0	101	136
April	867	867	225	0	98	132
May	753	753	191	0	101	136
June	653	653	166	0	98	132
July	635	635	161	0	101	136
August	625	625	158	0	101	136
September	683	683	175	0	98	132
October	771	771	199	0	101	136
November	790	790	207	0	98	132
December	908	908	242	0	101	136
Total	9334	9334	2429	0	1195	1606

Monthly Simulation Results for COPA

Project Name: SESAB-UBSI-TIPO1
Prepared by: jca

04/14/2025
09:42

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	647	647	171	0	48	65
February	577	577	152	0	44	59
March	669	669	178	0	48	65
April	571	571	148	0	47	63
May	455	455	115	0	48	65
June	387	387	98	0	47	63
July	343	343	87	0	48	65
August	343	343	87	0	48	65
September	409	409	105	0	47	63
October	515	515	133	0	48	65
November	557	557	145	0	47	63
December	678	678	179	0	48	65
Total	6150	6150	1597	0	569	764

Monthly Simulation Results for ESTERILIZAÇÃO

Project Name: SESAB-UBSI-TIPO1
Prepared by: jca

04/14/2025
09:42

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	701	701	190	0	65	88
February	619	619	167	0	59	79
March	688	688	188	0	65	88
April	581	581	154	0	63	85
May	495	495	127	0	65	88
June	440	440	113	0	63	85
July	419	419	107	0	65	88
August	442	442	113	0	65	88
September	502	502	131	0	63	85
October	587	587	154	0	65	88
November	649	649	173	0	63	85
December	762	762	207	0	65	88
Total	6885	6885	1824	0	771	1036

Monthly Simulation Results for ESTOQUE

Project Name: SESAB-UBSI-TIPO1
Prepared by: jca

04/14/2025
09:42

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	527	527	141	0	31	42
February	487	487	130	0	28	38
March	539	539	146	0	31	42
April	447	447	118	0	30	40
May	345	345	88	0	31	42
June	287	287	74	0	30	40
July	269	269	69	0	31	42
August	285	285	73	0	31	42
September	360	360	93	0	30	40
October	428	428	112	0	31	42
November	498	498	131	0	30	40
December	574	574	154	0	31	42
Total	5046	5046	1327	0	366	492

Monthly Simulation Results for FARMÁCIA

Project Name: SESAB-UBSI-TIPO1
Prepared by: jca

04/14/2025
09:42

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	632	632	168	0	74	99
February	566	566	149	0	67	89
March	646	646	172	0	74	99
April	553	553	144	0	71	96
May	456	456	115	0	74	99
June	397	397	101	0	71	96
July	366	366	93	0	74	99
August	371	371	94	0	74	99
September	431	431	110	0	71	96
October	519	519	134	0	74	99
November	565	565	147	0	71	96
December	668	668	177	0	74	99
Total	6171	6171	1604	0	867	1165

Monthly Simulation Results for RECEPÇÃO

Project Name: SESAB-UBSI-TIPO1
Prepared by: jca

04/14/2025
09:42

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	3294	3294	876	0	185	249
February	2939	2939	778	0	167	224
March	3343	3343	892	0	185	249
April	2972	2972	772	0	179	241
May	2605	2605	665	0	185	249
June	2313	2313	594	0	179	241
July	2155	2155	554	0	185	249
August	2135	2135	551	0	185	249
September	2396	2396	624	0	179	241
October	2861	2861	744	0	185	249
November	2952	2952	779	0	179	241
December	3436	3436	916	0	185	249
Total	33401	33401	8745	0	2178	2926

Monthly Simulation Results for SALA TI

Project Name: SESAB-UBSI-TIPO1
Prepared by: jca

04/14/2025
09:42

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	575	575	154	0	43	57
February	531	531	142	0	38	52
March	587	587	159	0	43	57
April	491	491	129	0	41	55
May	386	386	99	0	43	57
June	325	325	83	0	41	55
July	303	303	77	0	43	57
August	319	319	82	0	43	57
September	397	397	103	0	41	55
October	471	471	123	0	43	57
November	541	541	143	0	41	55
December	625	625	168	0	43	57
Total	5550	5550	1460	0	501	673

Monthly Simulation Results for SL DE CURATIVOS

Project Name: SESAB-UBSI-TIPO1
Prepared by: jca

04/14/2025
09:42

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	634	634	170	0	101	136
February	584	584	155	0	92	123
March	673	673	181	0	101	136
April	615	615	161	0	98	132
May	549	549	139	0	101	136
June	487	487	124	0	98	132
July	493	493	124	0	101	136
August	495	495	125	0	101	136
September	527	527	135	0	98	132
October	565	565	146	0	101	136
November	586	586	154	0	98	132
December	657	657	176	0	101	136
Total	6865	6865	1792	0	1195	1606

Monthly Simulation Results for VACINA

Project Name: SESAB-UBSI-TIPO1
Prepared by: jca

04/14/2025
09:42

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	735	735	197	0	82	110
February	672	672	180	0	74	99
March	749	749	203	0	82	110
April	638	638	168	0	79	106
May	521	521	133	0	82	110
June	448	448	115	0	79	106
July	423	423	108	0	82	110
August	437	437	111	0	82	110
September	521	521	135	0	79	106
October	615	615	160	0	82	110
November	688	688	182	0	79	106
December	788	788	212	0	82	110
Total	7234	7234	1904	0	962	1292

Air System Sizing Summary for AGENTE DE SAUDE

Project Name: SESAB-UBSI-TIPO1
Prepared by: jca

04/14/2025
09:42

Air System Information

Air System Name **AGENTE DE SAUDE**
Equipment Class **SPLT AHU**
Air System Type **SZCAV**

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

Sizing Calculation Information

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

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

Central Cooling Coil Sizing Data

Total coil load **2,6** kW
Sensible coil load **2,0** 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 **0,791**
L/(s kW) **63,7**
m²/kW **3,8**
W/m² **264,2**
Water flow @ 5,6 K rise **N/A**

Load occurs at **Dec 1600**
OA DB / WB **31,5 / 25,5** °C
Entering DB / WB **25,2 / 18,9** °C
Leaving DB / WB **15,0 / 14,4** °C
Coil ADP **13,8** °C
Bypass Factor **0,100**
Resulting RH **53** %
Design supply temp. **14,1** °C
Zone T-stat Check **1 of 1** OK
Max zone temperature deviation **0,0** K

Supply Fan Sizing Data

Actual max L/s **165** L/s
Standard L/s **165** L/s
Actual max L/(s·m²) **16,84** L/(s·m²)

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

Outdoor Ventilation Air Data

Design airflow L/s **18** L/s
L/(s·m²) **1,83** L/(s·m²)

L/s/person **8,97** L/s/person

Zone Sizing Summary for AGENTE DE SAUDE

Project Name: SESAB-UBSI-TIPO1
Prepared by: jca

04/14/2025
09:42

Air System Information

Air System Name **AGENTE DE SAUDE**
Equipment Class **SPLT AHU**
Air System Type **SZCAV**

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

Sizing Calculation Information

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

Zone L/s Sizing **Sum of space airflow rates**
Space 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·m ²)	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 Peak Sensible Loads

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

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 (m ²)	Space L/(s·m ²)
Zone 1							
AGENTE DE SAUDE	1	1,9	Dec 1600	165	0,1	9,8	16,84

Ventilation Sizing Summary for AGENTE DE SAUDE

Project Name: SESAB-UBSI-TIPO1
Prepared by: jca

04/14/2025
09:42

1. Summary

Ventilation Sizing Method Sum of Space OA Airflows
Design Ventilation Airflow Rate 18 L/s

2. Space Ventilation Analysis

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

Air System Design Load Summary for AGENTE DE SAUDE

Project Name: SESAB-UBSI-TIPO1
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	18 m²	767	-	18 m²	56	-
Roof Transmission	9 m²	320	-	9 m²	8	-
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	-	1947	120	-	73	0
Zone Conditioning	-	1896	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	152	421	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	-	2048	541	-	2	0
Central Cooling Coil	-	2048	541	-	0	0
>> Total Conditioning	-	2048	541	-	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 Sizing Summary for CONSULTORIO

Project Name: SESAB-UBSI-TIPO1
Prepared by: jca

04/14/2025
09:42

Air System Information

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

Number of zones **1**
Floor Area **13,2** m²
Location **Salvador, Brazil**

Sizing Calculation Information

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

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

Central Cooling Coil Sizing Data

Total coil load **2,3** kW
Sensible coil load **1,9** 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 **0,799**
L/(s kW) **70,5**
m²/kW **5,6**
W/m² **177,4**
Water flow @ 5,6 K rise **N/A**

Load occurs at **May 1500**
OA DB / WB **28,3 / 23,9** °C
Entering DB / WB **24,9 / 19,0** °C
Leaving DB / WB **15,5 / 14,9** °C
Coil ADP **14,4** °C
Bypass Factor **0,100**
Resulting RH **55** %
Design supply temp. **14,7** °C
Zone T-stat Check **1 of 1** OK
Max zone temperature deviation **0,0** K

Supply Fan Sizing Data

Actual max L/s **165** L/s
Standard L/s **165** L/s
Actual max L/(s·m²) **12,50** L/(s·m²)

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

Outdoor Ventilation Air Data

Design airflow L/s **19** L/s
L/(s·m²) **1,44** L/(s·m²)

L/s/person **9,48** L/s/person

Zone Sizing Summary for CONSULTORIO

Project Name: SESAB-UBSI-TIPO1
Prepared by: jca

04/14/2025
09:42

Air System Information

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

Number of zones **1**
Floor Area **13,2** m²
Location **Salvador, Brazil**

Sizing Calculation Information

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

Zone L/s Sizing **Sum of space airflow rates**
Space 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·m ²)	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 (m ²)
Zone 1	1,8	May 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 (m ²)	Space L/(s·m ²)
Zone 1							
CONSULTORIO	1	1,8	May 1500	165	0,0	13,2	12,50

Ventilation Sizing Summary for CONSULTORIO

Project Name: SESAB-UBSI-TIPO1
Prepared by: jca

04/14/2025
09:42

1. Summary

Ventilation Sizing Method Sum of Space OA Airflows
Design Ventilation Airflow Rate 19 L/s

2. Space Ventilation Analysis

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

Air System Design Load Summary for CONSULTORIO

Project Name: SESAB-UBSI-TIPO1
Prepared by: jca

04/14/2025
09:42

	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	9 m²	381	-	9 m²	28	-
Roof Transmission	13 m²	306	-	13 m²	12	-
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	-	1822	120	-	49	0
Zone Conditioning	-	1783	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	89	349	19 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	-	1872	469	-	4	0
Central Cooling Coil	-	1872	469	-	0	0
>> Total Conditioning	-	1872	469	-	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 Sizing Summary for CONSULTÓRIO ODONTO

Project Name: SESAB-UBSI-TIPO1
Prepared by: jca

04/14/2025
09:42

Air System Information

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

Number of zones **1**
Floor Area **12,4** m²
Location **Salvador, Brazil**

Sizing Calculation Information

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

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

Central Cooling Coil Sizing Data

Total coil load **2,4** kW
Sensible coil load **1,8** 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 **0,744**
L/(s kW) **67,6**
m²/kW **5,1**
W/m² **196,8**
Water flow @ 5,6 K rise **N/A**

Load occurs at **May 1500**
OA DB / WB **28,3 / 23,9** °C
Entering DB / WB **25,0 / 19,6** °C
Leaving DB / WB **15,9 / 15,4** °C
Coil ADP **14,9** °C
Bypass Factor **0,100**
Resulting RH **58** %
Design supply temp. **15,2** °C
Zone T-stat Check **1 of 1** OK
Max zone temperature deviation **0,0** K

Supply Fan Sizing Data

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

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

Outdoor Ventilation Air Data

Design airflow L/s **26** L/s
L/(s·m²) **2,11** L/(s·m²)

L/s/person **8,74** L/s/person

Zone Sizing Summary for CONSULTÓRIO ODONTO

Project Name: SESAB-UBSI-TIPO1
Prepared by: jca

04/14/2025
09:42

Air System Information

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

Number of zones 1
Floor Area 12,4 m²
Location Salvador, Brazil

Sizing Calculation Information

Calculation Months Jan to Dec
Sizing Data Calculated

Zone L/s Sizing Sum of space airflow rates
Space 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·m ²)	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 (m ²)
Zone 1	1,7	Jun 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 (m ²)	Space L/(s·m ²)
Zone 1							
CONS. ODONT	1	1,7	Jun 1500	165	0,0	12,4	13,31

Ventilation Sizing Summary for CONSULTÓRIO ODONTO

Project Name: SESAB-UBSI-TIPO1
Prepared by: jca

04/14/2025
09:42

1. Summary

Ventilation Sizing Method Sum of Space OA Airflows
Design Ventilation Airflow Rate 26 L/s

2. Space Ventilation Analysis

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

Air System Design Load Summary for CONSULTÓRIO ODONTO

Project Name: SESAB-UBSI-TIPO1
Prepared by: jca

04/14/2025
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	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	6 m²	267	-	6 m²	19	-
Roof Transmission	12 m²	287	-	12 m²	12	-
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	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	-	1719	180	-	40	0
Zone Conditioning	-	1691	180	-	-1	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	124	445	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	-	1815	626	-	4	0
Central Cooling Coil	-	1815	626	-	0	0
>> Total Conditioning	-	1815	626	-	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 Sizing Summary for COPA

Project Name: SESAB-UBSI-TIPO1
Prepared by: jca

04/14/2025
09:42

Air System Information

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

Number of zones **1**
Floor Area **5,9** m²
Location **Salvador, Brazil**

Sizing Calculation Information

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

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

Central Cooling Coil Sizing Data

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 **0,721**
L/(s kW) **86,7**
m²/kW **3,1**
W/m² **322,6**
Water flow @ 5,6 K rise **N/A**

Load occurs at **Dec 1600**
OA DB / WB **31,5 / 25,5** °C
Entering DB / WB **25,5 / 21,2** °C
Leaving DB / WB **18,6 / 18,2** °C
Coil ADP **17,8** °C
Bypass Factor **0,100**
Resulting RH **69** %
Design supply temp. **17,9** °C
Zone T-stat Check **1 of 1** OK
Max zone temperature deviation **0,0** K

Supply Fan Sizing Data

Actual max L/s **165** L/s
Standard L/s **165** L/s
Actual max L/(s·m²) **27,97** L/(s·m²)

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

Outdoor Ventilation Air Data

Design airflow L/s **24** L/s
L/(s·m²) **4,11** L/(s·m²)

L/s/person **8,09** L/s/person

Zone Sizing Summary for COPA

Project Name: SESAB-UBSI-TIPO1
Prepared by: jca

04/14/2025
09:42

Air System Information

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

Number of zones 1
Floor Area 5,9 m²
Location Salvador, Brazil

Sizing Calculation Information

Calculation Months Jan to Dec
Sizing Data Calculated

Zone L/s Sizing Sum of space airflow rates
Space 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·m ²)	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	27,97	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 (m ²)
Zone 1	1,2	Dec 1600	0,0	5,9

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 (m ²)	Space L/(s·m ²)
Zone 1							
COPA	1	1,2	Dec 1600	165	0,0	5,9	27,97

Ventilation Sizing Summary for COPA

Project Name: SESAB-UBSI-TIPO1
Prepared by: jca

04/14/2025
09:42

1. Summary

Ventilation Sizing Method Sum of Space OA Airflows
Design Ventilation Airflow Rate 24 L/s

2. Space Ventilation Analysis

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	5,9	3,0	165,0	7,50	0,30	0,0	0,0	24,3
Totals (incl. Space Multipliers)				165,0					24,3

Air System Design Load Summary for COPA

Project Name: SESAB-UBSI-TIPO1
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	1 m²	182	-	1 m²	-	-
Wall Transmission	10 m²	411	-	10 m²	31	-
Roof Transmission	6 m²	210	-	6 m²	6	-
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	94 W	79	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	127 W	117	-	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	-	1195	180	-	40	0
Zone Conditioning	-	1167	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	24 L/s	206	350	24 L/s	3	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	-	1373	530	-	3	0
Central Cooling Coil	-	1373	531	-	0	0
>> Total Conditioning	-	1373	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 Sizing Summary for ESTERILIZAÇÃO

Project Name: SESAB-UBSI-TIPO1
Prepared by: jca

04/14/2025
09:42

Air System Information

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

Number of zones **1**
Floor Area **8,0** m²
Location **Salvador, Brazil**

Sizing Calculation Information

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

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

Central Cooling Coil Sizing Data

Total coil load **2,2** kW
Sensible coil load **1,9** 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 **0,869**
L/(s kW) **75,9**
m²/kW **3,7**
W/m² **271,7**
Water flow @ 5,6 K rise **N/A**

Load occurs at **Dec 1600**
OA DB / WB **31,5 / 25,5** °C
Entering DB / WB **25,0 / 18,7** °C
Leaving DB / WB **15,5 / 14,9** °C
Coil ADP **14,5** °C
Bypass Factor **0,100**
Resulting RH **54** %
Design supply temp. **14,6** °C
Zone T-stat Check **1 of 1** OK
Max zone temperature deviation **0,0** K

Supply Fan Sizing Data

Actual max L/s **165** L/s
Standard L/s **165** L/s
Actual max L/(s·m²) **20,63** L/(s·m²)

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

Outdoor Ventilation Air Data

Design airflow L/s **10** L/s
L/(s·m²) **1,24** L/(s·m²)

L/s/person **9,90** L/s/person

Zone Sizing Summary for ESTERILIZAÇÃO

Project Name: SESAB-UBSI-TIPO1
Prepared by: jca

04/14/2025
09:42

Air System Information

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

Number of zones **1**
Floor Area **8,0** m²
Location **Salvador, Brazil**

Sizing Calculation Information

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

Zone L/s Sizing **Sum of space airflow rates**
Space 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·m ²)	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	20,63	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 (m ²)
Zone 1	1,9	Dec 1600	0,0	8,0

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 (m ²)	Space L/(s·m ²)
Zone 1							
ESTERILIZAÇÃO	1	1,9	Dec 1600	165	0,0	8,0	20,63

Ventilation Sizing Summary for ESTERILIZAÇÃO

Project Name: SESAB-UBSI-TIPO1

Prepared by: jca

04/14/2025

09:42

1. Summary

Ventilation Sizing Method Sum of Space OA Airflows

Design Ventilation Airflow Rate 10 L/s

2. Space Ventilation Analysis

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

Air System Design Load Summary for ESTERILIZAÇÃO

Project Name: SESAB-UBSI-TIPO1
Prepared by: jca

04/14/2025
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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	6 m²	911	-	6 m²	-	-
Wall Transmission	5 m²	201	-	5 m²	15	-
Roof Transmission	8 m²	284	-	8 m²	7	-
Window Transmission	6 m²	131	-	6 m²	22	-
Skylight Transmission	0 m²	0	-	0 m²	0	-
Door Loads	0 m²	0	-	0 m²	0	-
Floor Transmission	8 m²	0	-	8 m²	0	-
Partitions	0 m²	0	-	0 m²	0	-
Ceiling	0 m²	0	-	0 m²	0	-
Overhead Lighting	128 W	107	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	172 W	159	-	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	-	1850	60	-	44	0
Zone Conditioning	-	1807	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	224	10 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	-	1889	284	-	2	0
Central Cooling Coil	-	1889	285	-	0	0
>> Total Conditioning	-	1889	285	-	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 Sizing Summary for ESTOQUE

Project Name: SESAB-UBSI-TIPO1
Prepared by: jca

04/14/2025
09:42

Air System Information

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

Number of zones **1**
Floor Area **3,8** m²
Location **Salvador, Brazil**

Sizing Calculation Information

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

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

Central Cooling Coil Sizing Data

Total coil load **1,9** kW
Sensible coil load **1,5** 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 **0,794**
L/(s kW) **87,6**
m²/kW **2,0**
W/m² **495,8**
Water flow @ 5,6 K rise **N/A**

Load occurs at **Dec 1500**
OA DB / WB **31,7 / 25,6** °C
Entering DB / WB **25,5 / 20,5** °C
Leaving DB / WB **17,9 / 17,5** °C
Coil ADP **17,1** °C
Bypass Factor **0,100**
Resulting RH **64** %
Design supply temp. **16,8** °C
Zone T-stat Check **0 of 1** OK
Max zone temperature deviation **0,1** K

Supply Fan Sizing Data

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

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

Outdoor Ventilation Air Data

Design airflow L/s **16** L/s
L/(s·m²) **4,25** L/(s·m²)

L/s/person **8,07** L/s/person

Zone Sizing Summary for ESTOQUE

Project Name: SESAB-UBSI-TIPO1
Prepared by: jca

04/14/2025
09:42

Air System Information

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

Number of zones **1**
Floor Area **3,8** m²
Location **Salvador, Brazil**

Sizing Calculation Information

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

Zone L/s Sizing **Sum of space airflow rates**
Space 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·m ²)	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 (m ²)
Zone 1	1,4	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 (m ²)	Space L/(s·m ²)
Zone 1							
ESTOQUE	1	1,4	Dec 1500	165	0,0	3,8	43,42

Ventilation Sizing Summary for ESTOQUE

Project Name: SESAB-UBSI-TIPO1
Prepared by: jca

04/14/2025
09:42

1. Summary

Ventilation Sizing Method Sum of Space OA Airflows
Design Ventilation Airflow Rate 16 L/s

2. Space Ventilation Analysis

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

Air System Design Load Summary for ESTOQUE

Project Name: SESAB-UBSI-TIPO1
Prepared by: jca

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	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	818	-	23 m²	21	-
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	-	1409	120	-	37	0
Zone Conditioning	-	1362	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	134	268	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	-	1496	388	-	2	0
Central Cooling Coil	-	1496	388	-	0	0
>> Total Conditioning	-	1496	388	-	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 Sizing Summary for FARMÁCIA

Project Name: SESAB-UBSI-TIPO1
Prepared by: jca

04/14/2025
09:42

Air System Information

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

Number of zones **1**
Floor Area **9,0** m²
Location **Salvador, Brazil**

Sizing Calculation Information

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

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

Central Cooling Coil Sizing Data

Total coil load **1,8** 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 **0,781**
L/(s kW) **90,7**
m²/kW **4,9**
W/m² **202,2**
Water flow @ 5,6 K rise **N/A**

Load occurs at **Dec 1600**
OA DB / WB **31,5 / 25,5** °C
Entering DB / WB **25,4 / 20,7** °C
Leaving DB / WB **18,2 / 17,8** °C
Coil ADP **17,5** °C
Bypass Factor **0,100**
Resulting RH **66** %
Design supply temp. **17,2** °C
Zone T-stat Check **1 of 1** OK
Max zone temperature deviation **0,0** K

Supply Fan Sizing Data

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

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

Outdoor Ventilation Air Data

Design airflow L/s **18** L/s
L/(s·m²) **1,97** L/(s·m²)

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

Zone Sizing Summary for FARMÁCIA

Project Name: SESAB-UBSI-TIPO1
Prepared by: jca

04/14/2025
09:42

Air System Information

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

Number of zones **1**
Floor Area **9,0** m²
Location **Salvador, Brazil**

Sizing Calculation Information

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

Zone L/s Sizing **Sum of space airflow rates**
Space 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·m ²)	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 (m ²)
Zone 1	1,3	Dec 1600	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 (m ²)	Space L/(s·m ²)
Zone 1							
FARMÁCIA	1	1,3	Dec 1600	165	0,0	9,0	18,33

Ventilation Sizing Summary for FARMÁCIA

Project Name: SESAB-UBSI-TIPO1

Prepared by: jca

04/14/2025

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1. Summary

Ventilation Sizing Method Sum of Space OA Airflows

Design Ventilation Airflow Rate 18 L/s

2. Space Ventilation Analysis

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

Air System Design Load Summary for FARMÁCIA

Project Name: SESAB-UBSI-TIPO1
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	1 m²	182	-	1 m²	-	-
Wall Transmission	9 m²	390	-	9 m²	29	-
Roof Transmission	9 m²	320	-	9 m²	8	-
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	9 m²	0	-	9 m²	0	-
Partitions	0 m²	0	-	0 m²	0	-
Ceiling	0 m²	0	-	0 m²	0	-
Overhead Lighting	144 W	120	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	194 W	179	-	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	-	1330	120	-	42	0
Zone Conditioning	-	1275	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	146	279	18 L/s	3	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	-	1421	399	-	4	0
Central Cooling Coil	-	1421	399	-	0	0
>> Total Conditioning	-	1421	399	-	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 Sizing Summary for RECEPÇÃO

Project Name: SESAB-UBSI-TIPO1
Prepared by: jca

04/14/2025
09:42

Air System Information

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

Number of zones **1**
Floor Area **22,6** m²
Location **Salvador, Brazil**

Sizing Calculation Information

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

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

Central Cooling Coil Sizing Data

Total coil load **8,3** kW
Sensible coil load **4,6** 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 **0,557**
L/(s kW) **20,0**
m²/kW **2,7**
W/m² **365,4**
Water flow @ 5,6 K rise **N/A**

Load occurs at **Dec 1500**
OA DB / WB **31,7 / 25,6** °C
Entering DB / WB **28,4 / 21,3** °C
Leaving DB / WB **5,3 / 5,2** °C
Coil ADP **2,7** °C
Bypass Factor **0,100**
Resulting RH **35** %
Design supply temp. **4,2** °C
Zone T-stat Check **1 of 1** OK
Max zone temperature deviation **0,0** K

Supply Fan Sizing Data

Actual max L/s **165** L/s
Standard L/s **165** L/s
Actual max L/(s·m²) **7,30** L/(s·m²)

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

Outdoor Ventilation Air Data

Design airflow L/s **89** L/s
L/(s·m²) **3,95** L/(s·m²)

L/s/person **8,12** L/s/person

Zone Sizing Summary for RECEPÇÃO

Project Name: SESAB-UBSI-TIPO1
Prepared by: jca

04/14/2025
09:42

Air System Information

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

Number of zones **1**
Floor Area **22,6** m²
Location **Salvador, Brazil**

Sizing Calculation Information

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

Zone L/s Sizing **Sum of space airflow rates**
Space 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·m ²)	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	7,30	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 (m ²)
Zone 1	3,9	Dec 1500	0,1	22,6

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 (m ²)	Space L/(s·m ²)
Zone 1							
RECEPÇÃO	1	3,9	Dec 1500	165	0,1	22,6	7,30

Ventilation Sizing Summary for RECEPÇÃO

Project Name: SESAB-UBSI-TIPO1
Prepared by: jca

04/14/2025
09:42

1. Summary

Ventilation Sizing Method Sum of Space OA Airflows
Design Ventilation Airflow Rate 89 L/s

2. Space Ventilation Analysis

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	22,6	11,0	165,0	7,50	0,30	0,0	0,0	89,3
Totals (incl. Space Multipliers)				165,0					89,3

Air System Design Load Summary for RECEPÇÃO

Project Name: SESAB-UBSI-TIPO1
Prepared by: jca

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	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	13 m²	1923	-	13 m²	-	-
Wall Transmission	0 m²	16	-	0 m²	1	-
Roof Transmission	23 m²	338	-	23 m²	9	-
Window Transmission	13 m²	277	-	13 m²	46	-
Skylight Transmission	0 m²	0	-	0 m²	0	-
Door Loads	0 m²	0	-	0 m²	0	-
Floor Transmission	23 m²	0	-	23 m²	0	-
Partitions	0 m²	0	-	0 m²	0	-
Ceiling	0 m²	0	-	0 m²	0	-
Overhead Lighting	362 W	297	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	486 W	447	-	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	-	3911	661	-	56	0
Zone Conditioning	-	3840	661	-	-9	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	89 L/s	762	2994	89 L/s	11	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	-	4602	3655	-	2	0
Central Cooling Coil	-	4602	3655	-	0	0
>> Total Conditioning	-	4602	3655	-	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 Sizing Summary for SALA TI

Project Name: SESAB-UBSI-TIPO1
Prepared by: jca

04/14/2025
09:42

Air System Information

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

Number of zones **1**
Floor Area **5,2** m²
Location **Salvador, Brazil**

Sizing Calculation Information

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

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

Central Cooling Coil Sizing Data

Total coil load **2,0** kW
Sensible coil load **1,6** 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 **0,794**
L/(s kW) **82,3**
m²/kW **2,6**
W/m² **385,6**
Water flow @ 5,6 K rise **N/A**

Load occurs at **Jan 1600**
OA DB / WB **32,0 / 25,5** °C
Entering DB / WB **25,2 / 20,0** °C
Leaving DB / WB **17,2 / 16,7** °C
Coil ADP **16,3** °C
Bypass Factor **0,100**
Resulting RH **62** %
Design supply temp. **16,4** °C
Zone T-stat Check **1 of 1** OK
Max zone temperature deviation **0,0** K

Supply Fan Sizing Data

Actual max L/s **165** L/s
Standard L/s **165** L/s
Actual max L/(s·m²) **31,73** L/(s·m²)

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

Outdoor Ventilation Air Data

Design airflow L/s **17** L/s
L/(s·m²) **3,18** L/(s·m²)

L/s/person **8,28** L/s/person

Zone Sizing Summary for SALA TI

Project Name: SESAB-UBSI-TIPO1
Prepared by: jca

04/14/2025
09:42

Air System Information

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

Number of zones **1**
Floor Area **5,2** m²
Location **Salvador, Brazil**

Sizing Calculation Information

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

Zone L/s Sizing **Sum of space airflow rates**
Space 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·m ²)	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	31,73	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 (m ²)
Zone 1	1,5	Dec 1500	0,0	5,2

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 (m ²)	Space L/(s·m ²)
Zone 1							
SL TI	1	1,5	Dec 1500	165	0,0	5,2	31,73

Ventilation Sizing Summary for SALA TI

Project Name: SESAB-UBSI-TIPO1
Prepared by: jca

04/14/2025
09:42

1. Summary

Ventilation Sizing Method Sum of Space OA Airflows
Design Ventilation Airflow Rate 17 L/s

2. Space Ventilation Analysis

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	5,2	2,0	165,0	7,50	0,30	0,0	0,0	16,6
Totals (incl. Space Multipliers)				165,0					16,6

Air System Design Load Summary for SALA TI

Project Name: SESAB-UBSI-TIPO1
Prepared by: jca

04/14/2025
09:42

	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	148	-	1 m²	-	-
Wall Transmission	4 m²	175	-	4 m²	14	-
Roof Transmission	23 m²	825	-	23 m²	21	-
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	83 W	69	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	112 W	103	-	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	-	1463	120	-	40	0
Zone Conditioning	-	1440	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	17 L/s	152	293	17 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	-	1592	413	-	2	0
Central Cooling Coil	-	1592	413	-	0	0
>> Total Conditioning	-	1592	413	-	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 Sizing Summary for SL DE CURATIVOS

Project Name: SESAB-UBSI-TIPO1
Prepared by: jca

04/14/2025
09:42

Air System Information

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

Number of zones **1**
Floor Area **12,4** m²
Location **Salvador, Brazil**

Sizing Calculation Information

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

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

Central Cooling Coil Sizing Data

Total coil load **1,9** 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 **0,869**
L/(s kW) **87,8**
m²/kW **6,6**
W/m² **151,5**
Water flow @ 5,6 K rise **N/A**

Load occurs at **May 1500**
OA DB / WB **28,3 / 23,9** °C
Entering DB / WB **24,7 / 19,2** °C
Leaving DB / WB **16,5 / 16,0** °C
Coil ADP **15,6** °C
Bypass Factor **0,100**
Resulting RH **59** %
Design supply temp. **15,8** °C
Zone T-stat Check **1 of 1** OK
Max zone temperature deviation **0,0** K

Supply Fan Sizing Data

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

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

Outdoor Ventilation Air Data

Design airflow L/s **11** L/s
L/(s·m²) **0,90** L/(s·m²)

L/s/person **11,22** L/s/person

Zone Sizing Summary for SL DE CURATIVOS

Project Name: SESAB-UBSI-TIPO1
Prepared by: jca

04/14/2025
09:42

Air System Information

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

Number of zones **1**
Floor Area **12,4** m²
Location **Salvador, Brazil**

Sizing Calculation Information

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

Zone L/s Sizing **Sum of space airflow rates**
Space 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·m ²)	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 (m ²)
Zone 1	1,6	Jun 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 (m ²)	Space L/(s·m ²)
Zone 1							
SL CURATIVO	1	1,6	Jun 1500	165	0,0	12,4	13,31

Ventilation Sizing Summary for SL DE CURATIVOS

Project Name: SESAB-UBSI-TIPO1
Prepared by: jca

04/14/2025
09:42

1. Summary

Ventilation Sizing Method Sum of Space OA Airflows
Design Ventilation Airflow Rate 11 L/s

2. Space Ventilation Analysis

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

Air System Design Load Summary for SL DE CURATIVOS

Project Name: SESAB-UBSI-TIPO1
Prepared by: jca

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	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	6 m²	267	-	6 m²	19	-
Roof Transmission	12 m²	287	-	12 m²	12	-
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	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	-	1608	60	-	40	0
Zone Conditioning	-	1580	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	53	186	11 L/s	3	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	-	1633	246	-	4	0
Central Cooling Coil	-	1633	246	-	0	0
>> Total Conditioning	-	1633	246	-	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 Sizing Summary for VACINA

Project Name: SESAB-UBSI-TIPO1
Prepared by: jca

04/14/2025
09:42

Air System Information

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

Number of zones **1**
Floor Area **10,0** m²
Location **Salvador, Brazil**

Sizing Calculation Information

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

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

Central Cooling Coil Sizing Data

Total coil load **2,3** kW
Sensible coil load **1,8** 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 **0,789**
L/(s kW) **71,5**
m²/kW **4,3**
W/m² **231,3**
Water flow @ 5,6 K rise **N/A**

Load occurs at **Dec 1600**
OA DB / WB **31,5 / 25,5** °C
Entering DB / WB **25,5 / 19,7** °C
Leaving DB / WB **16,4 / 15,8** °C
Coil ADP **15,4** °C
Bypass Factor **0,100**
Resulting RH **58** %
Design supply temp. **15,1** °C
Zone T-stat Check **0 of 1** OK
Max zone temperature deviation **0,1** K

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)

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

Outdoor Ventilation Air Data

Design airflow L/s **18** L/s
L/(s·m²) **1,80** L/(s·m²)

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

Zone Sizing Summary for VACINA

Project Name: SESAB-UBSI-TIPO1
Prepared by: jca

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09:43

Air System Information

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

Number of zones **1**
Floor Area **10,0** m²
Location **Salvador, Brazil**

Sizing Calculation Information

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

Zone L/s Sizing **Sum of space airflow rates**
Space 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·m ²)	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 (m ²)
Zone 1	1,7	Dec 1600	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 (m ²)	Space L/(s·m ²)
Zone 1							
VACINA	1	1,7	Dec 1600	165	0,0	10,0	16,53

Ventilation Sizing Summary for VACINA

Project Name: SESAB-UBSI-TIPO1
Prepared by: jca

04/14/2025
09:43

1. Summary

Ventilation Sizing Method Sum of Space OA Airflows
Design Ventilation Airflow Rate 18 L/s

2. Space Ventilation Analysis

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

Air System Design Load Summary for VACINA

Project Name: SESAB-UBSI-TIPO1
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	1 m²	182	-	1 m²	-	-
Wall Transmission	7 m²	292	-	7 m²	22	-
Roof Transmission	23 m²	803	-	23 m²	21	-
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	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	-	1748	120	-	47	0
Zone Conditioning	-	1676	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	145	367	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	-	1822	487	-	3	0
Central Cooling Coil	-	1822	487	-	0	0
>> Total Conditioning	-	1822	487	-	0	0
Key:	Positive values are clg loads Negative values are htg loads			Positive values are htg loads Negative values are clg loads		