CONSÓRCIO SAÚDE

CONCREMAT | MEP

MEMÓRIA DE CÁLCULO
SISTEMA DE HVAC
CER2

PROJETO EXECUTIVO

ABRIL / 2026
VERSÃO R02

CONSÓRCIO SAÚDE CONCREMAT-MEP – CNPJ 60.255.454/0001-35
Rua Joaquim Palhares, no. 40, Andar 5 – Rio de Janeiro/RJ
CEP: 20.260-080 – Fone: (21) 3535-4131
0013-PP-CER2-CLI-PE-MEC-001-022

ASSUNTO:	**MEMÓRIA DE CÁLCULO SISTEMA DE HVAC - CER2**	
LOCAL:	**DIVERSOS (PROJETO PADRÃO)**	
CONTRATANTE:	**SECRETARIA DA SAÚDE DO ESTADO DA BAHIA (SESAB)**	**CNPJ: 13.937.131/0001-41**
CONTRATADA:	**CONSÓRCIO SAÚDE CONCREMAT-MEP**	**CNPJ: 60.255.454/0001-35**

ESTATÍSTICAS:

PROJETOS PADRÃO	ÁREA ESTIMADA	ÁREA ESTIMADA DO TERRENO
UBSI TIPO I	250,00	1.000,00
UBSI TIPO II	400,00	1.000,00
UBS TIPO II	650,00	2.000,00
UBS TIPO III	750,00	2.500,00
UBS TIPO IV	930,00	3.000,00
CER TIPO II	1.650,00	4.000,00
CER TIPO III	1.910,00	5.000,00
CER TIPO IV	2.100,00	6.000,00
UA	450,00	2.000,00
CAPS I	630,00	2.000,00
CAPS III	820,00	2.500,00
LMRR REGIONAL	670,00	3.000,00
HEMOCENTRO REGIONAL	730,00	3.000,00
TOTAL	**11.940,00m²**	**37.000,00m²**

CONTRATANTE: SECRETARIA DA SAÚDE DO ESTADO DA BAHIA (SESAB)
CNPJ: 13.937.131/0001-41

AUTOR DO MEMORIAL:
JOSIMAR FRAGOSO
ENGENHEIRA MECÂNICA
CREA n° 77379BA

ESCALA: INDICADA	**DATA:** ABRIL/2026

TEXTO: CONSÓRCIO SAÚDE CONCREMAT-MEP
REVISÃO: R02

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1. APRESENTAÇÃO

Esta memória de cálculo visa apresentar os cálculos de renovação de ar, exaustão e de carga térmica para a implantação dos sistemas de climatização das Centro Especializado em Reabilitação (CER) Tipo II.

Conforme NOTIFICAÇÃO Nº 003/2026, Processo nº 019.8781.2026.0044414-60, SEI nº 00135106342 (ANEXO 1), a SESAB deliberou, de forma expressa e fundamentada, pela adoção de solução simplificada de climatização e conforto térmico, que consistente na utilização de sistemas de ar condicionado split do tipo inverter convencionais, associados à renovação de ar adequada aos ambientes, de forma a atender os requisitos técnicos previstos na ABNT NBR 7256 somente quanto ao controle de temperatura. Não foram previstos controle de umidade e filtragem nos ambientes climatizados.

Considerando que os Centro Especializado em Reabilitação (CER) objeto dos projetos serão implantadas, em sua maioria, em municípios de pequeno porte, frequentemente situados em regiões com limitações de infraestrutura técnica, restrições orçamentárias e reduzida capacidade operacional para manutenção de sistemas prediais de alta complexidade.

Considerando que a adoção integral dos sistemas de tratamento de ar previstos na ABNT NBR 7256 implica implantação, operação e manutenção de equipamentos com elevado grau de complexidade técnica, custos contínuos de manutenção especializada, necessidade de reposição de componentes e exigência de equipe técnica qualificada, fatores que podem comprometer a sustentabilidade operacional das unidades ao longo do tempo.

Considerando, ainda, que tais estabelecimentos destinam-se à prestação de serviços típicos de atenção básica à saúde, cujo perfil assistencial, nível de risco e dinâmica de funcionamento não justificam, sob a ótica da razoabilidade, economicidade e adequação ao interesse público, a adoção de sistemas completos de climatização hospitalar de alta complexidade.

Todos os esclarecimentos técnicos e formais acerca das exigências estabelecidas na ABNT NBR 7256, bem como demais normas correlatas aplicáveis a estabelecimentos assistenciais de saúde, foram passados, bem como quanto às implicações técnicas, sanitárias, operacionais e legais decorrentes da não observância integral da referida norma, especialmente no que se refere ao controle de infecção,

pressurização e renovação de ar, filtragem e classificação de ambientes críticos, segurança de pacientes e equipe assistencial.

2. NORMAS DE REFERÊNCIA

Considera-se como referências técnicas para a elaboração desta memória de cálculo as seguintes normas:

- RESOLUÇÃO ANVISA - RDC Nº 50, DE 21 DE FEVEREIRO DE 2002 - Regulamento Técnico para planejamento, programação, elaboração e avaliação de projetos físicos de estabelecimentos assistenciais de saúde;
- ABNT NBR 7256:2022 – Tratamento de ar em ambientes assistenciais de saúde (EAS) – Requisitos para projeto e execução das instalações;
- ABNT NBR 16401:2024 – Instalações Centrais de Ar Condicionado – Sistemas Centrais e Unitários – Parte 1 – Projetos de Instalações;
- ABNT NBR 16401:2024 – Instalações Centrais de Ar Condicionado – Sistemas Centrais e Unitários – Parte 2 – Parâmetros de Conforto Térmico Conforto;
- ABNT NBR 16401:2024 – Instalações Centrais de Ar Condicionado – Sistemas Centrais e Unitários – Parte 3 – Qualidade do Ar Interior;
- PORTARIA Nº 3.523, DE 28 DE AGOSTO DE 1998, do Ministério da Saúde;
- LEI Nº 13.589, DE 4 DE JANEIRO DE 2018.

3. DOCUMENTOS ESPECÍFICOS DE REFERÊNCIA

Considera-se como referências específicas para a elaboração desta memória de cálculo os seguintes documentos:

- 0013-PP-CER2-ARQ-PE-002-00-LAY– CER TIPO II – Arquitetura – Planta de Lay out;
- 0013-PP-CER2-ARQ-MDB-PEIFC – Modelagem BIM CER 2

4. PREMISSAS PARA CÁLCULO DE CARGA TÉRMICA

Para o cálculo da carga térmica foi empregando o "software" HAP 40, versão 5.1, da Carrier. O sistema HAP emprega o método de cálculo "Transfer Function" da ASHRAE e permite além do cálculo de carga térmica, a simulação hora a hora das 8.760 horas/ano.

1. Condições Externas de Ambiente

Consideramos a implantação da unidade em clima tropical, Salvador / Bahia, com frequência anual 0,4%, adotando-se para o ar exterior os parâmetros indicados pela NBR-16.401, parte 1, Anexo A, Tabela A-4, a saber:

- Temperatura bulbo seco (TBS): 32,6 ºC (verão)
- Temperatura bulbo úmido (TBU): 26,6 ºC (verão)

2. Taxas para Cálculo da Carga Térmica

- Para os itens: ocupação, equipamentos, iluminação e calor dissipado pelas pessoas foram consideradas as recomendações da ABNT NBR-16.401, parte 1, Anexo C.

3. Condições Internas para ambientes climatizados

- Pé Direito (m) = 2,70
- Temperatura de Bulbo Seco = 20 ºC a 24 ºC
- Umidade Relativa = 60% (máxima)
- Vazão mínima de ar exterior (renovações por hora) = 2,0

5. CÁLCULO DA VAZÃO DE RENOVAÇÃO – INSUFLAMENTO

Para o cálculo da vazão de ar exterior dos ambientes, foi adotada a taxa mínima de 2 (duas) renovações de ar por hora.

Segue conforme tabelas abaixo:

Ambientes				Norma	Vazão adotada		
Tipo	Pé direito	Área (m²)	N°Pessoas		Ar externo (m³/h)		N. Trocas de ar
ALMOXARIFADO/	2,7	18,7	1	NBR 16401	27	100	2,0
SALA MULTIUSO	2,7	27,3	13	NBR 16401	351	350	4,7
SALA ADM	2,7	13,86	2	NBR 16401	54	75	2,0
APOIO ADM	2,7	19,63	4	NBR 16401	108	110	2,1
SALA DE COODERNAÇÃO	2,7	13,92	5	NBR 16401	135	115	3,1
ÁREA DE ESTAR EQ.	2,7	27,86	11	NBR 16401	297	300	4,0
SALA DE REUNIÃO	2,7	36,79	21	NBR 16401	567	555	5,6
COPA/ REFEITÓRIO	2,7	27,84	14	NBR 16401	378	350	4,7
COPA/ REFEITÓRIO	2,7	41,18	20	NBR 16401	540	500	4,5
SALA DE TI	2,7	5,02		NBR 16401	0	0	0,0
ARQUIVO	2,7	12,52	2	NBR 16401	54	70	2,1
SALA DE AMAMENTAÇÃO	2,7	7,33	2	NBR 16401	54	55	2,8

CV-01	CAIXA DE VENTILAÇÃO MODELO TITAN SGSD 317, EQUIPADA COM FILTRO G4 + F8, ARRANJO 4, CLASSE 1, DESCARGA HORIZONTAL, POTÊNCIA DE 0,50 CV, PRESSÃO ESTÁTICA DISP. 300PA, VAZÃO 2.630m³/h, MOTOR DE 4 POLOS, TRIFÁSICO, 60Hz. REFERÊNCIA: SICFLUX OU EQUIVALENTE TÉCNICO.

Ambientes					Vazão adotada		
Tipo	Pé direito	Área (m²)	Pessoas	Norma	Ar externo (m³/h)		N. Trocas de ar
RECEPÇÃO/ SL ESPERA	2,7	77,88	25	NBR 16401	675	680	3,2
CONSULTÓRIO INTERD.	2,7	11	3	NBR 7256	59	60	2,0
SL. ATEND. INFATIL 01	2,7	19,94	10	NBR 7256	108	110	2,0
SL. ATEND. INFATIL 02	2,7	19,94	10	NBR 7256	108	110	2,0

SL DE ATIVIDADE DE VIDA	2,7	24,2	2	NBR 7256	131	130	2,0
SL. DE ATEND. EM GRUPO ADULTO 01	2,7	19,97	10	NBR 7256	108	110	2,0
SL. DE ATEND. EM GRUPO ADULTO 02	2,7	19,92	10	NBR 7256	108	110	2,0
SL. ESTIMULAÇÃO PREC. 01	2,7	18,8	2	NBR 7256	102	105	2,1
SL. ESTIMULAÇÃO PREC. 02	2,7	18,83	2	NBR 7256	102	105	2,1

CV-02	CAIXA DE VENTILAÇÃO MODELO FH 400, VAZÃO DE 1605 m³/h, PRESSÃO ESTÁTICA DISP. 250PA, POTÊNCIA DE 486 W, TENSÃO 220 V – 1F, COM FILTRO G4 +F8 REFERÊNCIA: SICFLUX OU EQUIVALENTE TÉCNICO

Ambientes				**Norma**	**Vazão adotada**		
Tipo	**Pé direito**	**Área (m²)**	**Pessoas**		**Ar externo (m³/h)**		**N. Trocas de ar**
GINÁSIO DE GINESIOTERAPIA	2,7	108,5	10	NBR 7256	586	590	2,0
SL. DE CINESIOTERAPIA INFANTIL	2,7	24,9	2	NBR 7256	134	135	2,0
AMBULATÓRIO ESTOMIA	2,7	12	2	NBR 7256	65	65	2,0
ACOLHIMENTO FAMILIAR	2,7	46,23	16	NBR 7256	250	250	2,0
CONSULT. MULTIPROFISSIONAL 01	2,7	10,09	3	NBR 7256	54	55	2,0
CONSULT. MULTIPROFISSIONAL 02	2,7	10,09	3	NBR 7256	54	55	2,0
CONSULT. FISIATRIA/ORTOPEDIA	2,7	11,23	3	NBR 7256	61	60	2,0
SALA DE TI	2,7	4,85		NBR 16401	0	0	0,0
SL. INTEGRAÇAO	2,7	29,79	3	NBR 7256	161	160	2,0
SL. DE ESTIMULAÇÃO	2,7	23,51	16	NBR 7256	127	130	2,0
SL DE PROCED. INTERNOS	2,7	12,82	2	NBR 7256	69	70	2,0
GUARDA DE RECURSOS	2,7	6,62	2	NBR 7256	36	35	2,0
CONSULTÓRIO NEUROLOGIA	2,7	11,13	2	NBR 7256	60	60	2,0
CONSULTÓRIO MULTIPROF. 01	2,7	11,03	2	NBR 7256	60	60	2,0
CONSULTÓRIO MULTIPROF. 02	2,7	11,09	3	NBR 7256	60	60	2,0

EQUIPAMENTO ADOTADO

CV-03	CAIXA DE VENTILAÇÃO MODELO FH 400, VAZÃO DE 1980 m³/h, PRESSÃO ESTÁTICA DISP. 250PA POTÊNCIA DE 486 W, TENSÃO 220 V – 1F, COM FILTRO G4 + F8. REFERÊNCIA: SICFLUX OU EQUIVALENTE TÉCNICO.

5. CÁLCULO DA VAZÃO DE EXAUSTÃO

Exaustão						
Mínima vazão de ar por ambiente						ADOTADA
Ambientes	**Área**	**Pé direito**	**Renovações por hora (T/h)**	**Vazão (m³/h)**	**Vazão (L/s)**	**Vazão (m³/h)**
Vest. Func. Masc.	12,79	2,7	10	345	96	**345**
Banheiro Func. PCD	4,81	2,7	10	130	36	**130**
Vest. Func. FEM	22,13	2,7	10	598	166	**600**
DML	3,76	2,7	10	102	28	**100**
COPA	27,84	2,7	10	752	209	**750**
COPA	41,18	2,7	10	1112	309	**1110**
DML	3,75	2,7	10	101	28	**100**
ARQUIVO	12,52	2,7	10	338	94	**340**
SANIT. PUB MASC PCD	3,52	2,7	10	95	26	**95**
SANIT. PUB. EM.PCD	3,39	2,7	10	92	25	**95**
BANHEIRO PCD	5,43	2,7	10	147	41	**150**
			Vazão mínima total:	3810	1058	**3815**

EX-01	CAIXA DE VENTILAÇÃO MODELO TITAN SGSD 277, PRESSÃO ESTÁTICA DISP. 350PA, VAZÃO 3815 m³/h, SEM FILTRO, ARRANJO 4, CLASSE 1, DESCARGA HORIZONTAL, POTÊNCIA DE 0,75 CV, MOTOR DE 4 POLOS, TRIFÁSICO, 60 HZ, PRESSÃO REFERÊNCIA: SICFLUX OU EQUIVALENTE TÉCNICO.

Exaustão						
Mínima vazão de ar por ambiente						ADOTADA
Ambientes	**Área**	**Pé direito**	**Renovações por hora (T/h)**	**Vazão (m³/h)**	**Vazão (L/s)**	**Vazão (m³/h)**
VEST. PÚB. MASC. PCD	5,07	2,7	10	137	38	**140**
SALA DE UTILIDADES	5,60	2,7	10	151	42	**150**
DML	3,12	2,7	10	84	23	**85**
SL HIGIENIZAÇÃO	4,46	2,7	10	120	33	**120**
SANITÁRIO OSTOMIA	4,32	2,7	10	117	32	**120**
SANIT. PÚB. FEM. PCD	3,50	2,7	10	95	26	**95**
SANIT. PÚB. MASC. PCD	3,49	2,7	10	94	26	**95**
FRALDÁRIO ADULTO	4,39	2,7	10	119	33	**120**

SANIT. PUB. PCD FRALD.	3,61	2,7	10	97	27	**100**
DML	3,46	2,7	10	93	26	**95**
			Vazão mínima total:	1108	308	**1120**

EX-02	CAIXA DE VENTILAÇÃO MODELO FH 250, PRESSÃO ESTÁTICA DISP. 250PA, VAZÃO 1200 m³/h, POTÊNCIA DE 182 W, TENSÃO 220 V – 1F, SEM FILTRO. REFERÊNCIA: SICFLUX OU EQUIVALENTE TÉCNICO.

6. ESPECIFICAÇÃO EQUIPAMENTOS DE CLIMATIZAÇÃO

RELAÇÃO EQUIPAMENTOS SPLIT INVERTER						
Tipo	**Área (m²)**	**CARGA TÉRMICA (Kw)**	**CAPACIDADE ADOTADA (kW)**	**CAPACIDADE ADOTADA (BTU/h)**		**QTDE**
ALMOXARIFADO/	18,7	3,3	5,3	18000	Split tipo Hi-Wall, modelo: 18.000 BTU/h, Potência: 1600W - 220/1F/60Hz, condensadora de descarga vertical.	1
SALA MULTIUSO	27,3	8,8	7	24000	Split tipo Hi-Wall, modelo: 24.000 BTU/h, Potência: 2100W - 220/1F/60Hz, condensadora de descarga vertical.	1
SALA ADM	13,86	2,3	3,5	12000	Split tipo Hi-Wall, modelo: 12.000 BTU/h, Potência: 1100W - 220/1F/60Hz, condensadora de descarga vertical.	1

APOIO ADM	19,63	4,7	5,3	18000	Split tipo Hi-Wall, modelo: 18.000 BTU/h, Potência: 1600W - 220/1F/60Hz, condensadora de descarga vertical.	1
SALA DE COODERNAÇÃO	13,92	3,4	3,5	12000	Split tipo Hi-Wall, modelo: 12.000 BTU/h, Potência: 1100W - 220/1F/60Hz, condensadora de descarga vertical.	1
ÁREA DE ESTAR EQ.	27,86	7,2	7	24000	Split tipo Hi-Wall, modelo: 24.000 BTU/h, Potência: 2100W - 220/1F/60Hz, condensadora de descarga vertical.	1
SALA DE REUNIÃO	36,79	12,6	8,8	30000	Split tipo Cassete 4 vias, modelo: 30.000 BTU/h, Potência: 3400W - 220/1F/60Hz, condensadora de descarga vertical.	1
COPA/ REFEITÓRIO	27,84	9	7	24000	Split tipo Hi-Wall, modelo: 24.000 BTU/h, Potência: 2100W - 220/1F/60Hz, condensadora de descarga vertical.	1
COPA/ REFEITÓRIO	41,18	13,9	5,3	18000	Split tipo Hi-Wall, modelo: 18.000 BTU/h, Potência: 1600W - 220/1F/60Hz, condensadora de descarga vertical.	2

SALA DE TI	5,02	1,9	3,5	12000	Split tipo Hi-Wall, modelo: 12.000 BTU/h, Potência: 1100W - 220/1F/60Hz, condensadora de descarga vertical.	2
ARQUIVO	12,52	3,3	2,6	9000	Split tipo Hi-Wall, modelo: 9.000 BTU/h, Potência: 810W - 220/1F/60Hz, condensadora de descarga vertical.	1
SALA DE AMAMENTAÇÃO	7,33	1,9	2,6	9000	Split tipo Hi-Wall, modelo: 9.000 BTU/h, Potência: 810W - 220/1F/60Hz, condensadora de descarga vertical.	1
SALA DE TI	4,85	2,3	3,5	12000	Split tipo Hi-Wall, modelo: 12.000 BTU/h, Potência: 1100W - 220/1F/60Hz, condensadora de descarga vertical.	2
RECEPÇÃO/ SL ESPERA	77,88	25,7	30,1	72000	Split tipo Piso Teto vias, modelo: 36.000 BTU/h, Potência: 4300W - 220/1F/60Hz, condensadora de descarga vertical	2
CONSULTÓRIO INTERD.	11	3	4	12000	Split tipo Hi-Wall, modelo: 12.000 BTU/h, Potência: 1100W - 220/1F/60Hz, condensadora de descarga vertical.	1

SL. ATEND. INFATIL 01	19,94	5,5	5,7	24000	Split tipo Hi-Wall, modelo: 24.000 BTU/h, Potência: 2100W - 220/1F/60Hz, condensadora de descarga vertical.	1
SL DE ATIVIDADE DE VIDA	24,2	5,5	5,7	24000	Split tipo Hi-Wall, modelo: 24.000 BTU/h, Potência: 2100W - 220/1F/60Hz, condensadora de descarga vertical.	1
SL. ESTIMULAÇÃO PREC. 02	18,83	4	4	24000	Split tipo Hi-Wall, modelo: 24.000 BTU/h, Potência: 2100W - 220/1F/60Hz, condensadora de descarga vertical.	1
SL. DE ATEND. EM GRUPO ADULTO	19,92	4,9	5,7	24000	Split tipo Hi-Wall, modelo: 24.000 BTU/h, Potência: 2100W - 220/1F/60Hz, condensadora de descarga vertical.	1
SL. ESTIMULAÇÃO PREC. 01	18,8	4,1	5,7	24000	Split tipo Hi-Wall, modelo: 24.000 BTU/h, Potência: 2100W - 220/1F/60Hz, condensadora de descarga vertical.	1
GINÁSIO DE GINESIOTERAPIA	108,5	19,8	22,9	108000	Split tipo Piso Teto vias, modelo: 36.000 BTU/h, Potência: 4300W - 220/1F/60Hz, condensadora de descarga vertical	3

SL. DE CINESIOTERAPIA INFANTIL	24,9	5,7	5,7	24000	Split tipo Hi-Wall, modelo: 24.000 BTU/h, Potência: 2100W - 220/1F/60Hz, condensadora de descarga vertical.	1
AMBULATÓRIO ESTOMIA	12	3,4	4	12000	Split tipo Hi-Wall, modelo: 12.000 BTU/h, Potência: 1100W - 220/1F/60Hz, condensadora de descarga vertical.	1
ACOLHIMENTO FAMILIAR	46,23	13,5	15,1	48000	Split tipo Hi-Wall, modelo: 24.000 BTU/h, Potência: 2100W - 220/1F/60Hz, condensadora de descarga vertical.	2
CONSULT. MULTIPROFISSIONAL 01	10,09	2,5	4	12000	Split tipo Hi-Wall, modelo: 12.000 BTU/h, Potência: 1100W - 220/1F/60Hz, condensadora de descarga vertical.	1
CONSULT. MULTIPROFISSIONAL 02	10,09	3,5	4	12000	Split tipo Hi-Wall, modelo: 12.000 BTU/h, Potência: 1100W - 220/1F/60Hz, condensadora de descarga vertical.	1
CONSULT. FISIATRIA/ORTOPEDIA	11,23	3,2	4	12000	Split tipo Hi-Wall, modelo: 12.000 BTU/h, Potência: 1100W - 220/1F/60Hz, condensadora de descarga vertical.	1

SL. INTEGRAÇAO	29,79	6	7,5	24000	Split tipo Hi-Wall, modelo: 24.000 BTU/h, Potência: 2100W - 220/1F/60Hz, condensadora de descarga vertical.	1
SL. DE ESTIMULAÇÃO	23,51	7,1	7,5	24000	Split tipo Hi-Wall, modelo: 24.000 BTU/h, Potência: 2100W - 220/1F/60Hz, condensadora de descarga vertical.	1
SL DE PROCED. INTERNOS	12,82	3,6	4	12000	Split tipo Hi-Wall, modelo: 12.000 BTU/h, Potência: 1100W - 220/1F/60Hz, condensadora de descarga vertical.	1
CONSULTÓRIO NEUROLOGIA	11,13	2,9	4	12000	Split tipo Hi-Wall, modelo: 12.000 BTU/h, Potência: 1100W - 220/1F/60Hz, condensadora de descarga vertical.	1
CONSULTÓRIO MULTIPROF. 01	11,03	2,7	4	12000	Split tipo Hi-Wall, modelo: 12.000 BTU/h, Potência: 1100W - 220/1F/60Hz, condensadora de descarga vertical.	1
CONSULTÓRIO MULTIPROF. 02	11,09	3,3	4	12000	Split tipo Hi-Wall, modelo: 12.000 BTU/h, Potência: 1100W - 220/1F/60Hz, condensadora de descarga vertical.	1

7. RELATÓRIO DE CÁLCULO DE CARGA TÉRMICA

Air System Sizing Summary for 01_ALMOXARIFADO

Project Name: CER 2 12/22/2025
Prepared by: J FRAGOSO 09:18

Air System Information

Air System Name ..... **01_ALMOXARIFADO**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **18,7** 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	**3,3**	kW	Load occurs at	**Apr 1400**	
Sensible coil load	**2,5**	kW	OA DB / WB	**29,6 / 25,6**	°C
Coil L/s at Apr 1400	**218**	L/s	Entering DB / WB	**23,7 / 18,3**	°C
Max block L/s	**218**	L/s	Leaving DB / WB	**14,3 / 13,8**	°C
Sum of peak zone L/s	**218**	L/s	Coil ADP	**13,3**	°C
Sensible heat ratio	**0,740**		Bypass Factor	**0,100**	
L/(s kW)	**65,6**		Resulting RH	**57**	%
m²/kW	**5,6**		Design supply temp.	**12,8**	°C
W/m²	**178,0**		Zone T-stat Check	**1 of 1**	OK
Water flow @ 5,6 K rise	**N/A**		Max zone temperature deviation	**0,0**	K

Supply Fan Sizing Data

Actual max L/s	**218**	L/s	Fan motor BHP	**0,00**	BHP
Standard L/s	**218**	L/s	Fan motor kW	**0,00**	kW
Actual max L/(s·m²)	**11,68**	L/(s·m²)	Fan static	**0**	Pa

Outdoor Ventilation Air Data

Design airflow L/s	**28**	L/s	L/s/person	**28,00**	L/s/person
L/(s·m²)	**1,50**	L/(s·m²)			

Zone Sizing Summary for 01_ALMOXARIFADO

Project Name: CER 2 12/22/2025
Prepared by: J FRAGOSO 09:18

Air System Information

Air System Name ..... **01_ALMOXARIFADO**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **18,7** 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·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)
TÉRREO	218	218	11,68	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)
TÉRREO	2,4	May 1400	0,1	18,7

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)
TÉRREO							
.T01_ALMOXARIFADO	1	2,4	May 1400	218	0,1	18,7	11,68

Ventilation Sizing Summary for 01_ALMOXARIFADO

Project Name: CER 2 12/22/2025
Prepared by: J FRAGOSO 09:18

1. Summary

Ventilation Sizing Method ..... **Sum of Space OA Airflows**
Design Ventilation Airflow Rate ..... **28** 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)
TÉRREO									
.T01_ALMOXARIFADO	1	18,7	1,0	218,5	0,00	0,00	28,0	0,0	28,0
Totals (incl. Space Multipliers)				**218,5**					**28,0**

Air System Sizing Summary for 02_SALA MULTIUSO

Project Name: CER 2 12/22/2025
Prepared by: J FRAGOSO 09:18

Air System Information

Air System Name	**02_SALA MULTIUSO**	Number of zones	**1**
Equipment Class	**SPLT AHU**	Floor Area	**27,3** m²
Air System Type	**SZCAV**	Location	**Salvador, Brazil**

Sizing Calculation Information

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

Central Cooling Coil Sizing Data

Total coil load	**8,8**	kW	Load occurs at	**Feb 1400**	
Sensible coil load	**5,1**	kW	OA DB / WB	**31,8 / 26,8**	°C
Coil L/s at Feb 1400	**384**	L/s	Entering DB / WB	**25,1 / 20,2**	°C
Max block L/s	**384**	L/s	Leaving DB / WB	**14,0 / 13,6**	°C
Sum of peak zone L/s	**384**	L/s	Coil ADP	**12,8**	°C
Sensible heat ratio	**0,583**		Bypass Factor	**0,100**	
L/(s kW)	**43,5**		Resulting RH	**59**	%
m²/kW	**3,1**		Design supply temp.	**12,8**	°C
W/m²	**323,4**		Zone T-stat Check	**0 of 1**	OK
Water flow @ 5,6 K rise	**N/A**		Max zone temperature deviation	**0,0**	K

Supply Fan Sizing Data

Actual max L/s	**384**	L/s	Fan motor BHP	**0,00**	BHP
Standard L/s	**384**	L/s	Fan motor kW	**0,00**	kW
Actual max L/(s·m²)	**14,07**	L/(s·m²)	Fan static	**0**	Pa

Outdoor Ventilation Air Data

Design airflow L/s	**97**	L/s	L/s/person	**7,46**	L/s/person
L/(s·m²)	**3,55**	L/(s·m²)			

Zone Sizing Summary for 02_SALA MULTIUSO

Project Name: CER 2 12/22/2025
Prepared by: J FRAGOSO 09:18

Air System Information

Air System Name ..... **02_SALA MULTIUSO**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **27,3** 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·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)
TÉRREO	384	384	14,07	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)
TÉRREO	4,3	Jan 1400	0,2	27,3

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)
TÉRREO							
.T02_SALA MULTIUSO	1	4,3	Jan 1400	384	0,2	27,3	14,07

Ventilation Sizing Summary for 02_SALA MULTIUSO

Project Name: CER 2 12/22/2025
Prepared by: J FRAGOSO 09:18

1. Summary

Ventilation Sizing Method ..... **Sum of Space OA Airflows**
Design Ventilation Airflow Rate ..... **97** 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)
TÉRREO									
.T02_SALA MULTIUSO	1	27,3	13,0	384,2	0,00	0,00	97,0	0,0	97,0
Totals (incl. Space Multipliers)				**384,2**					**97,0**

Air System Sizing Summary for 03_SALA ADM

Project Name: CER 2 12/22/2025
Prepared by: J FRAGOSO 09:18

Air System Information

Air System Name	**03_SALA ADM**		Number of zones	**1**
Equipment Class	**SPLT AHU**		Floor Area	**13,9** m²
Air System Type	**SZCAV**		Location	**Salvador, Brazil**

Sizing Calculation Information

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

Central Cooling Coil Sizing Data

Total coil load	**2,3**	kW	Load occurs at	**Apr 1400**	
Sensible coil load	**1,6**	kW	OA DB / WB	**29,6 / 25,6**	°C
Coil L/s at Apr 1400	**136**	L/s	Entering DB / WB	**23,7 / 18,5**	°C
Max block L/s	**136**	L/s	Leaving DB / WB	**13,8 / 13,4**	°C
Sum of peak zone L/s	**136**	L/s	Coil ADP	**12,7**	°C
Sensible heat ratio	**0,690**		Bypass Factor	**0,100**	
L/(s kW)	**58,3**		Resulting RH	**57**	%
m²/kW	**6,0**		Design supply temp.	**12,8**	°C
W/m²	**167,4**		Zone T-stat Check	**1 of 1**	OK
Water flow @ 5,6 K rise	**N/A**		Max zone temperature deviation	**0,0**	K

Supply Fan Sizing Data

Actual max L/s	**136**	L/s	Fan motor BHP	**0,00**	BHP
Standard L/s	**135**	L/s	Fan motor kW	**0,00**	kW
Actual max L/(s·m²)	**9,75**	L/(s·m²)	Fan static	**0**	Pa

Outdoor Ventilation Air Data

Design airflow L/s	**21**	L/s	L/s/person	**10,50**	L/s/person
L/(s·m²)	**1,51**	L/(s·m²)			

Zone Sizing Summary for 03_SALA ADM

Project Name: CER 2 12/22/2025
Prepared by: J FRAGOSO 09:18

Air System Information

Air System Name ..... **03_SALA ADM**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **13,9** 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·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)
TÉRREO	136	136	9,75	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)
TÉRREO	1,5	Jun 1500	0,0	13,9

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)
TÉRREO							
.T03_SALA ADM	1	1,5	Jun 1500	136	0,0	13,9	9,75

Ventilation Sizing Summary for 03_SALA ADM

Project Name: CER 2
Prepared by: J FRAGOSO

12/22/2025
09:18

1. Summary

Ventilation Sizing Method ..... **Sum of Space OA Airflows**
Design Ventilation Airflow Rate ..... **21** 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)
TÉRREO									
.T03_SALA ADM	1	13,9	2,0	135,6	0,00	0,00	21,0	0,0	21,0
Totals (incl. Space Multipliers)				**135,6**					**21,0**

Air System Sizing Summary for 04_APOIO ADM

Project Name: CER 2 12/22/2025
Prepared by: J FRAGOSO 09:18

Air System Information

Air System Name	**04_APOIO ADM**		Number of zones	**1**
Equipment Class	**SPLT AHU**		Floor Area	**19,6** m²
Air System Type	**SZCAV**		Location	**Salvador, Brazil**

Sizing Calculation Information

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

Central Cooling Coil Sizing Data

Total coil load	**4,7**	kW	Load occurs at	**Dec 1400**	
Sensible coil load	**3,4**	kW	OA DB / WB	**31,3 / 26,8**	°C
Coil L/s at Dec 1400	**299**	L/s	Entering DB / WB	**23,4 / 18,1**	°C
Max block L/s	**299**	L/s	Leaving DB / WB	**14,0 / 13,5**	°C
Sum of peak zone L/s	**299**	L/s	Coil ADP	**12,9**	°C
Sensible heat ratio	**0,734**		Bypass Factor	**0,100**	
L/(s kW)	**64,3**		Resulting RH	**57**	%
m²/kW	**4,2**		Design supply temp.	**12,8**	°C
W/m²	**237,7**		Zone T-stat Check	**1 of 1**	OK
Water flow @ 5,6 K rise	**N/A**		Max zone temperature deviation	**0,0**	K

Supply Fan Sizing Data

Actual max L/s	**299**	L/s	Fan motor BHP	**0,00**	BHP
Standard L/s	**299**	L/s	Fan motor kW	**0,00**	kW
Actual max L/(s·m²)	**15,28**	L/(s·m²)	Fan static	**0**	Pa

Outdoor Ventilation Air Data

Design airflow L/s	**31**	L/s	L/s/person	**7,75**	L/s/person
L/(s·m²)	**1,58**	L/(s·m²)			

Zone Sizing Summary for 04_APOIO ADM

Project Name: CER 2 12/22/2025
Prepared by: J FRAGOSO 09:18

Air System Information

Air System Name ..... **04_APOIO ADM**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **19,6** 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·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)
TÉRREO	299	299	15,28	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)
TÉRREO	3,3	Apr 1400	0,2	19,6

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 (m²)	Space L/(s·m²)
TÉRREO							
.T04_APOIO ADM	1	3,3	Apr 1400	299	0,2	19,6	15,28

Ventilation Sizing Summary for 04_APOIO ADM

Project Name: CER 2
Prepared by: J FRAGOSO

12/22/2025
09:18

1. Summary

Ventilation Sizing Method ..... **Sum of Space OA Airflows**
Design Ventilation Airflow Rate ..... **31** 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)
TÉRREO									
.T04_APOIO ADM	1	19,6	4,0	299,5	0,00	0,00	31,0	0,0	31,0
Totals (incl. Space Multipliers)				**299,5**					**31,0**

Air System Sizing Summary for 05_SALA DE COODERNAÇÃO

Project Name: CER 2 12/22/2025
Prepared by: J FRAGOSO 09:18

Air System Information

Air System Name	**05_SALA DE COODERNAÇÃO**	Number of zones	**1**	
Equipment Class	**SPLT AHU**	Floor Area	**13,9**	m²
Air System Type	**SZCAV**	Location	**Salvador, Brazil**	

Sizing Calculation Information

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

Central Cooling Coil Sizing Data

Total coil load	**3,4**	kW	Load occurs at	**Jan 1400**	
Sensible coil load	**2,1**	kW	OA DB / WB	**31,8 / 26,8**	°C
Coil L/s at Jan 1400	**167**	L/s	Entering DB / WB	**24,4 / 19,4**	°C
Max block L/s	**167**	L/s	Leaving DB / WB	**14,0 / 13,6**	°C
Sum of peak zone L/s	**167**	L/s	Coil ADP	**12,8**	°C
Sensible heat ratio	**0,622**		Bypass Factor	**0,100**	
L/(s kW)	**49,5**		Resulting RH	**59**	%
m²/kW	**4,1**		Design supply temp.	**12,8**	°C
W/m²	**242,6**		Zone T-stat Check	**1 of 1**	OK
Water flow @ 5,6 K rise	**N/A**		Max zone temperature deviation	**0,0**	K

Supply Fan Sizing Data

Actual max L/s	**167**	L/s	Fan motor BHP	**0,00**	BHP
Standard L/s	**167**	L/s	Fan motor kW	**0,00**	kW
Actual max L/(s·m²)	**12,01**	L/(s·m²)	Fan static	**0**	Pa

Outdoor Ventilation Air Data

Design airflow L/s	**32**	L/s	L/s/person	**6,40**	L/s/person
L/(s·m²)	**2,30**	L/(s·m²)			

Zone Sizing Summary for 05_SALA DE COODERNAÇÃO

Project Name: CER 2 12/22/2025
Prepared by: J FRAGOSO 09:18

Air System Information

Air System Name ..... **05_SALA DE COODERNAÇÃO**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **13,9** 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·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)
TÉRREO	167	167	12,01	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)
TÉRREO	1,9	Apr 1400	0,1	13,9

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)
TÉRREO							
.T05_SALA DE COODERNAÇÃO	1	1,9	Apr 1400	167	0,1	13,9	12,01

Ventilation Sizing Summary for 05_SALA DE COODERNAÇÃO

Project Name: CER 2 12/22/2025
Prepared by: J FRAGOSO 09:18

1. Summary

Ventilation Sizing Method ..... **Sum of Space OA Airflows**
Design Ventilation Airflow Rate ..... **32** 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)
TÉRREO									
.T05_SALA DE COODERNAÇÃO	1	13,9	5,0	167,0	0,00	0,00	32,0	0,0	32,0
Totals (incl. Space Multipliers)				**167,0**					**32,0**

Air System Sizing Summary for 06_ÁREA DEESTAR EQ

Project Name: CER 2 12/22/2025
Prepared by: J FRAGOSO 09:18

Air System Information

Air System Name	**06_ÁREA DEESTAR EQ**		Number of zones	**1**
Equipment Class	**SPLT AHU**		Floor Area	**27,9** m²
Air System Type	**SZCAV**		Location	**Salvador, Brazil**

Sizing Calculation Information

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

Central Cooling Coil Sizing Data

Total coil load	**7,5**	kW	Load occurs at	**Dec 1500**	
Sensible coil load	**4,3**	kW	OA DB / WB	**31,4 / 26,8**	°C
Coil L/s at Dec 1500	**322**	L/s	Entering DB / WB	**25,0 / 20,3**	°C
Max block L/s	**322**	L/s	Leaving DB / WB	**14,0 / 13,6**	°C
Sum of peak zone L/s	**322**	L/s	Coil ADP	**12,8**	°C
Sensible heat ratio	**0,573**		Bypass Factor	**0,100**	
L/(s kW)	**43,0**		Resulting RH	**60**	%
m²/kW	**3,7**		Design supply temp.	**12,8**	°C
W/m²	**268,2**		Zone T-stat Check	**1 of 1**	OK
Water flow @ 5,6 K rise	**N/A**		Max zone temperature deviation	**0,0**	K

Supply Fan Sizing Data

Actual max L/s	**322**	L/s	Fan motor BHP	**0,00**	BHP
Standard L/s	**322**	L/s	Fan motor kW	**0,00**	kW
Actual max L/(s·m²)	**11,54**	L/(s·m²)	Fan static	**0**	Pa

Outdoor Ventilation Air Data

Design airflow L/s	**83**	L/s	L/s/person	**7,55**	L/s/person
L/(s·m²)	**2,97**	L/(s·m²)			

Zone Sizing Summary for 06_ÁREA DEESTAR EQ

Project Name: CER 2 12/22/2025
Prepared by: J FRAGOSO 09:18

Air System Information

Air System Name ..... **06_ÁREA DEESTAR EQ**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **27,9** 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·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)
TÉRREO	322	322	11,54	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)
TÉRREO	3,6	Dec 1400	0,2	27,9

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)
TÉRREO							
.T06_ÁREA DEESTAR EQ	1	3,6	Dec 1400	322	0,2	27,9	11,54

Ventilation Sizing Summary for 06_ÁREA DEESTAR EQ

Project Name: CER 2 12/22/2025
Prepared by: J FRAGOSO 09:18

1. Summary

Ventilation Sizing Method ..... **Sum of Space OA Airflows**
Design Ventilation Airflow Rate ..... **83** 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)
TÉRREO									
.T06_ÁREA DEESTAR EQ	1	27,9	11,0	322,0	0,00	0,00	83,0	0,0	83,0
Totals (incl. Space Multipliers)				**322,0**					**83,0**

Air System Sizing Summary for 07_SALA DE REUNIÃO

Project Name: CER 2 12/22/2025
Prepared by: J FRAGOSO 09:18

Air System Information

Air System Name	**07_SALA DE REUNIÃO**		Number of zones	**1**
Equipment Class	**SPLT AHU**		Floor Area	**36,8** m²
Air System Type	**SZCAV**		Location	**Salvador, Brazil**

Sizing Calculation Information

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

Central Cooling Coil Sizing Data

Total coil load	**12,6**	kW	Load occurs at	**Dec 1400**	
Sensible coil load	**6,8**	kW	OA DB / WB	**31,3 / 26,8**	°C
Coil L/s at Dec 1400	**489**	L/s	Entering DB / WB	**25,5 / 21,0**	°C
Max block L/s	**489**	L/s	Leaving DB / WB	**14,0 / 13,7**	°C
Sum of peak zone L/s	**489**	L/s	Coil ADP	**12,8**	°C
Sensible heat ratio	**0,537**		Bypass Factor	**0,100**	
L/(s kW)	**38,8**		Resulting RH	**61**	%
m²/kW	**2,9**		Design supply temp.	**12,8**	°C
W/m²	**343,0**		Zone T-stat Check	**0 of 1**	OK
Water flow @ 5,6 K rise	**N/A**		Max zone temperature deviation	**0,0**	K

Supply Fan Sizing Data

Actual max L/s	**489**	L/s	Fan motor BHP	**0,00**	BHP
Standard L/s	**489**	L/s	Fan motor kW	**0,00**	kW
Actual max L/(s·m²)	**13,30**	L/(s·m²)	Fan static	**0**	Pa

Outdoor Ventilation Air Data

Design airflow L/s	**154**	L/s	L/s/person	**7,33**	L/s/person
L/(s·m²)	**4,18**	L/(s·m²)			

Zone Sizing Summary for 07_SALA DE REUNIÃO

Project Name: CER 2 12/22/2025
Prepared by: J FRAGOSO 09:18

Air System Information

Air System Name ..... **07_SALA DE REUNIÃO**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **36,8** 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·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)
TÉRREO	489	489	13,30	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 (m²)
TÉRREO	5,4	Dec 1400	0,3	36,8

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)
TÉRREO							
.T07_SALA DE REUNIÃO	1	5,4	Dec 1400	489	0,3	36,8	13,30

Ventilation Sizing Summary for 07_SALA DE REUNIÃO

Project Name: CER 2 12/22/2025
Prepared by: J FRAGOSO 09:18

1. Summary

Ventilation Sizing Method ..... **Sum of Space OA Airflows**
Design Ventilation Airflow Rate ..... **154** 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)
TÉRREO									
.T07_SALA DE REUNIÃO	1	36,8	21,0	489,4	0,00	0,00	154,0	0,0	154,0
Totals (incl. Space Multipliers)				**489,4**					**154,0**

Air System Sizing Summary for 08_COPA/ REFEITÓRIO

Project Name: CER 2 12/22/2025
Prepared by: J FRAGOSO 09:18

Air System Information

Air System Name	**08_COPA/ REFEITÓRIO**	Number of zones	**1**	
Equipment Class	**SPLT AHU**	Floor Area	**27,8**	m²
Air System Type	**SZCAV**	Location	**Salvador, Brazil**	

Sizing Calculation Information

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

Central Cooling Coil Sizing Data

Total coil load	**9,0**	kW	Load occurs at	**Jan 1400**	
Sensible coil load	**5,3**	kW	OA DB / WB	**31,8 / 26,8**	°C
Coil L/s at Jan 1400	**398**	L/s	Entering DB / WB	**25,1 / 20,2**	°C
Max block L/s	**398**	L/s	Leaving DB / WB	**14,1 / 13,7**	°C
Sum of peak zone L/s	**398**	L/s	Coil ADP	**12,9**	°C
Sensible heat ratio	**0,585**		Bypass Factor	**0,100**	
L/(s kW)	**44,3**		Resulting RH	**60**	%
m²/kW	**3,1**		Design supply temp.	**12,8**	°C
W/m²	**322,9**		Zone T-stat Check	**0 of 1**	OK
Water flow @ 5,6 K rise	**N/A**		Max zone temperature deviation	**0,1**	K

Supply Fan Sizing Data

Actual max L/s	**398**	L/s	Fan motor BHP	**0,00**	BHP
Standard L/s	**397**	L/s	Fan motor kW	**0,00**	kW
Actual max L/(s·m²)	**14,30**	L/(s·m²)	Fan static	**0**	Pa

Outdoor Ventilation Air Data

Design airflow L/s	**97**	L/s	L/s/person	**6,93**	L/s/person
L/(s·m²)	**3,49**	L/(s·m²)			

Zone Sizing Summary for 08_COPA/ REFEITÓRIO

Project Name: CER 2 12/22/2025
Prepared by: J FRAGOSO 09:18

Air System Information

Air System Name ..... **08_COPA/ REFEITÓRIO**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **27,8** 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·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)
TÉRREO	398	398	14,30	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 (m²)
TÉRREO	4,4	Jan 1400	0,2	27,8

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)
TÉRREO							
.T08_COPA/ REFEITÓRIO	1	4,4	Jan 1400	398	0,2	27,8	14,30

Ventilation Sizing Summary for 08_COPA/ REFEITÓRIO

Project Name: CER 2 12/22/2025
Prepared by: J FRAGOSO 09:18

1. Summary

Ventilation Sizing Method ..... **Sum of Space OA Airflows**
Design Ventilation Airflow Rate ..... **97** 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)
TÉRREO									
.T08_COPA/ REFEITÓRIO	1	27,8	14,0	397,6	0,00	0,00	97,0	0,0	97,0
Totals (incl. Space Multipliers)				**397,6**					**97,0**

Air System Sizing Summary for 09_COPA/ REFEITÓRIO

Project Name: CER 2 12/22/2025
Prepared by: J FRAGOSO 09:18

Air System Information

Air System Name	**09_COPA/ REFEITÓRIO**	Number of zones	**1**
Equipment Class	**SPLT AHU**	Floor Area	**41,2** m²
Air System Type	**SZCAV**	Location	**Salvador, Brazil**

Sizing Calculation Information

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

Central Cooling Coil Sizing Data

Total coil load	**13,9**	kW	Load occurs at	**Dec 1400**	
Sensible coil load	**7,9**	kW	OA DB / WB	**31,3 / 26,8**	°C
Coil L/s at Dec 1400	**585**	L/s	Entering DB / WB	**24,9 / 20,2**	°C
Max block L/s	**585**	L/s	Leaving DB / WB	**13,8 / 13,4**	°C
Sum of peak zone L/s	**585**	L/s	Coil ADP	**12,5**	°C
Sensible heat ratio	**0,569**		Bypass Factor	**0,100**	
L/(s kW)	**42,2**		Resulting RH	**59**	%
m²/kW	**3,0**		Design supply temp.	**12,8**	°C
W/m²	**336,5**		Zone T-stat Check	**1 of 1**	OK
Water flow @ 5,6 K rise	**N/A**		Max zone temperature deviation	**0,0**	K

Supply Fan Sizing Data

Actual max L/s	**585**	L/s	Fan motor BHP	**0,00**	BHP
Standard L/s	**584**	L/s	Fan motor kW	**0,00**	kW
Actual max L/(s·m²)	**14,19**	L/(s·m²)	Fan static	**0**	Pa

Outdoor Ventilation Air Data

Design airflow L/s	**154**	L/s	L/s/person	**7,70**	L/s/person
L/(s·m²)	**3,74**	L/(s·m²)			

Zone Sizing Summary for 09_COPA/ REFEITÓRIO

Project Name: CER 2 12/22/2025
Prepared by: J FRAGOSO 09:18

Air System Information

Air System Name ..... **09_COPA/ REFEITÓRIO**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **41,2** 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·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)
TÉRREO	585	585	14,19	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)
TÉRREO	6,5	Dec 1500	0,3	41,2

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)
TÉRREO							
.T09_COPA/ REFEITÓRIO	1	6,5	Dec 1500	585	0,3	41,2	14,19

Ventilation Sizing Summary for 09_COPA/ REFEITÓRIO

Project Name: CER 2 12/22/2025
Prepared by: J FRAGOSO 09:18

1. Summary

Ventilation Sizing Method ..... **Sum of Space OA Airflows**
Design Ventilation Airflow Rate ..... **154** 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)
TÉRREO									
.T09_COPA/ REFEITÓRIO	1	41,2	20,0	584,7	0,00	0,00	154,0	0,0	154,0
Totals (incl. Space Multipliers)				**584,7**					**154,0**

Air System Information

Air System Name	**10_SALA DE TI**		Number of zones	**1**
Equipment Class	**SPLT AHU**		Floor Area	**5,0** m²
Air System Type	**SZCAV**		Location	**Salvador, Brazil**

Sizing Calculation Information

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

Central Cooling Coil Sizing Data

Total coil load	**1,9**	kW	Load occurs at	**Feb 1400**	
Sensible coil load	**1,9**	kW	OA DB / WB	**31,8 / 26,8**	°C
Coil L/s at Feb 1400	**170**	L/s	Entering DB / WB	**22,4 / 16,3**	°C
Max block L/s	**170**	L/s	Leaving DB / WB	**13,2 / 12,7**	°C
Sum of peak zone L/s	**170**	L/s	Coil ADP	**12,2**	°C
Sensible heat ratio	**0,966**		Bypass Factor	**0,100**	
L/(s kW)	**87,4**		Resulting RH	**53**	%
m²/kW	**2,6**		Design supply temp.	**12,8**	°C
W/m²	**390,0**		Zone T-stat Check	**1 of 1**	OK
Water flow @ 5,6 K rise	**N/A**		Max zone temperature deviation	**0,0**	K

Supply Fan Sizing Data

Actual max L/s	**170**	L/s	Fan motor BHP	**0,00**	BHP
Standard L/s	**170**	L/s	Fan motor kW	**0,00**	kW
Actual max L/(s·m²)	**34,10**	L/(s·m²)	Fan static	**0**	Pa

Outdoor Ventilation Air Data

Design airflow L/s	**0**	L/s	L/s/person	**0,00**	L/s/person
L/(s·m²)	**0,00**	L/(s·m²)			

Zone Sizing Summary for 10_SALA DE TI

Project Name: CER 2 12/22/2025
Prepared by: J FRAGOSO 09:18

Air System Information

Air System Name ..... **10_SALA DE TI**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **5,0** 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·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)
TÉRREO	170	170	34,10	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)
TÉRREO	1,9	Jan 1500	0,0	5,0

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)
TÉRREO							
T10_SALA DE TI	1	1,9	Jan 1500	170	0,0	5,0	34,10

Ventilation Sizing Summary for 10_SALA DE TI

Project Name: CER 2
Prepared by: J FRAGOSO

12/22/2025
09:18

1. Summary

Ventilation Sizing Method ..... **Sum of Space OA Airflows**
Design Ventilation Airflow Rate ..... **0** 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)
TÉRREO									
T10_SALA DE TI	1	5,0	1,0	170,5	0,00	0,00	0,0	0,0	0,0
Totals (incl. Space Multipliers)				**170,5**					**0,0**

Air System Sizing Summary for 11_ARQUIVO

Project Name: CER 2 12/22/2025
Prepared by: J FRAGOSO 09:18

Air System Information

Air System Name	**11_ARQUIVO**		Number of zones	**1**
Equipment Class	**SPLT AHU**		Floor Area	**18,7** m²
Air System Type	**SZCAV**		Location	**Salvador, Brazil**

Sizing Calculation Information

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

Central Cooling Coil Sizing Data

Total coil load	**3,3**	kW	Load occurs at	**Apr 1400**	
Sensible coil load	**2,5**	kW	OA DB / WB	**29,6 / 25,6**	°C
Coil L/s at Apr 1400	**218**	L/s	Entering DB / WB	**23,7 / 18,3**	°C
Max block L/s	**218**	L/s	Leaving DB / WB	**14,3 / 13,8**	°C
Sum of peak zone L/s	**218**	L/s	Coil ADP	**13,3**	°C
Sensible heat ratio	**0,740**		Bypass Factor	**0,100**	
L/(s kW)	**65,6**		Resulting RH	**57**	%
m²/kW	**5,6**		Design supply temp.	**12,8**	°C
W/m²	**178,0**		Zone T-stat Check	**1 of 1**	OK
Water flow @ 5,6 K rise	**N/A**		Max zone temperature deviation	**0,0**	K

Supply Fan Sizing Data

Actual max L/s	**218**	L/s	Fan motor BHP	**0,00**	BHP
Standard L/s	**218**	L/s	Fan motor kW	**0,00**	kW
Actual max L/(s·m²)	**11,68**	L/(s·m²)	Fan static	**0**	Pa

Outdoor Ventilation Air Data

Design airflow L/s	**28**	L/s	L/s/person	**28,00**	L/s/person
L/(s·m²)	**1,50**	L/(s·m²)			

Zone Sizing Summary for 11_ARQUIVO

Project Name: CER 2 12/22/2025
Prepared by: J FRAGOSO 09:18

Air System Information

Air System Name ..... **11_ARQUIVO**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **18,7** 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·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)
1º PAVIMENTO	218	218	11,68	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)
1º PAVIMENTO	2,4	May 1400	0,1	18,7

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)
1º PAVIMENTO							
.T01_ALMOXARIFADO	1	2,4	May 1400	218	0,1	18,7	11,68

Ventilation Sizing Summary for 11_ARQUIVO

Project Name: CER 2
Prepared by: J FRAGOSO

12/22/2025
09:18

1. Summary

Ventilation Sizing Method ..... **Sum of Space OA Airflows**
Design Ventilation Airflow Rate ..... **28** 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)
1º PAVIMENTO									
.T01_ALMOXARIFADO	1	18,7	1,0	218,5	0,00	0,00	28,0	0,0	28,0
Totals (incl. Space Multipliers)				**218,5**					**28,0**

Air System Information

Air System Name	**12_AMAMENTAÇÃO**	Number of zones	**1**	
Equipment Class	**SPLT AHU**	Floor Area	**7,3**	m²
Air System Type	**SZCAV**	Location	**Salvador, Brazil**	

Sizing Calculation Information

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

Central Cooling Coil Sizing Data

Total coil load	**1,9**	kW	Load occurs at	**Feb 1400**	
Sensible coil load	**1,3**	kW	OA DB / WB	**31,8 / 26,8**	°C
Coil L/s at Feb 1400	**112**	L/s	Entering DB / WB	**23,7 / 18,6**	°C
Max block L/s	**112**	L/s	Leaving DB / WB	**14,0 / 13,6**	°C
Sum of peak zone L/s	**112**	L/s	Coil ADP	**13,0**	°C
Sensible heat ratio	**0,691**		Bypass Factor	**0,100**	
L/(s kW)	**59,1**		Resulting RH	**58**	%
m²/kW	**3,8**		Design supply temp.	**12,8**	°C
W/m²	**260,2**		Zone T-stat Check	**1 of 1**	OK
Water flow @ 5,6 K rise	**N/A**		Max zone temperature deviation	**0,0**	K

Supply Fan Sizing Data

Actual max L/s	**112**	L/s	Fan motor BHP	**0,00**	BHP
Standard L/s	**112**	L/s	Fan motor kW	**0,00**	kW
Actual max L/(s·m²)	**15,38**	L/(s·m²)	Fan static	**0**	Pa

Outdoor Ventilation Air Data

Design airflow L/s	**15**	L/s	L/s/person	**7,50**	L/s/person
L/(s·m²)	**2,05**	L/(s·m²)			

Zone Sizing Summary for 12_AMAMENTAÇÃO

Project Name: CER 2 12/22/2025
Prepared by: J FRAGOSO 09:18

Air System Information

Air System Name ..... **12_AMAMENTAÇÃO**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **7,3** 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·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)
TÉRREO	112	112	15,38	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)
TÉRREO	1,2	May 1400	0,1	7,3

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)
TÉRREO							
T12_AMAMENTAÇÃO	1	1,2	May 1400	112	0,1	7,3	15,38

Ventilation Sizing Summary for 12_AMAMENTAÇÃO

Project Name: CER 2
Prepared by: J FRAGOSO

12/22/2025
09:18

1. Summary

Ventilation Sizing Method ..... **Sum of Space OA Airflows**
Design Ventilation Airflow Rate ..... **15** 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)
TÉRREO									
T12_AMAMENTAÇÃO	1	7,3	2,0	112,3	0,00	0,00	15,0	0,0	15,0
Totals (incl. Space Multipliers)				**112,3**					**15,0**

Air System Sizing Summary for 13_RECEPÇÃO ESPERA

Project Name: CER 2 12/22/2025
Prepared by: J FRAGOSO 09:18

Air System Information

Air System Name	**13_RECEPÇÃO ESPERA**	Number of zones	**1**
Equipment Class	**SPLT AHU**	Floor Area	**77,9** m²
Air System Type	**SZCAV**	Location	**Salvador, Brazil**

Sizing Calculation Information

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

Central Cooling Coil Sizing Data

Total coil load	**25,7**	kW	Load occurs at	**Dec 1600**	
Sensible coil load	**16,9**	kW	OA DB / WB	**31,3 / 26,8**	°C
Coil L/s at Dec 1600	**965**	L/s	Entering DB / WB	**24,2 / 17,8**	°C
Max block L/s	**965**	L/s	Leaving DB / WB	**9,6 / 9,2**	°C
Sum of peak zone L/s	**965**	L/s	Coil ADP	**8,0**	°C
Sensible heat ratio	**0,658**		Bypass Factor	**0,100**	
L/(s kW)	**37,5**		Resulting RH	**45**	%
m²/kW	**3,0**		Design supply temp.	**12,8**	°C
W/m²	**330,0**		Zone T-stat Check	**1 of 1**	OK
Water flow @ 5,6 K rise	**N/A**		Max zone temperature deviation	**0,0**	K

Central Heating Coil Sizing Data

Max coil load	**12,9**	kW	Load occurs at	**Des Htg**	
Coil L/s at Des Htg	**965**	L/s	W/m²	**165,9**	
Max coil L/s	**965**	L/s	Ent. DB / Lvg DB	**8,7 / 19,8**	°C
Water flow @ 11,1 K drop	**N/A**				

Supply Fan Sizing Data

Actual max L/s	**965**	L/s	Fan motor BHP	**0,00**	BHP
Standard L/s	**965**	L/s	Fan motor kW	**0,00**	kW
Actual max L/(s·m²)	**12,39**	L/(s·m²)	Fan static	**0**	Pa

Outdoor Ventilation Air Data

Design airflow L/s	**189**	L/s	L/s/person	**7,56**	L/s/person
L/(s·m²)	**2,43**	L/(s·m²)			

Zone Sizing Summary for 13_RECEPÇÃO ESPERA

Project Name: CER 2 12/22/2025
Prepared by: J FRAGOSO 09:18

Air System Information

Air System Name ..... **13_RECEPÇÃO ESPERA**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **77,9** 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·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)
TÉRREO	965	965	12,39	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)
TÉRREO	10,7	May 1400	0,5	77,9

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)
TÉRREO							
T13_RECEPÇÃO ESPERA	1	10,7	May 1400	965	0,5	77,9	12,39

Ventilation Sizing Summary for 13_RECEPÇÃO ESPERA

Project Name: CER 2 12/22/2025
Prepared by: J FRAGOSO 09:18

1. Summary

Ventilation Sizing Method ..... **Sum of Space OA Airflows**
Design Ventilation Airflow Rate ..... **189** 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)
TÉRREO									
T13_RECEPÇÃO ESPERA	1	77,9	25,0	965,2	0,00	0,00	189,0	0,0	189,0
Totals (incl. Space Multipliers)				**965,2**					**189,0**

Air System Sizing Summary for 14_CONSULTÓRIO INTERD.

Project Name: CER 2 12/22/2025
Prepared by: J FRAGOSO 09:18

Air System Information

Air System Name	**14_CONSULTÓRIO INTERD.**	Number of zones	**1**
Equipment Class	**SPLT AHU**	Floor Area	**11,0** m²
Air System Type	**SZCAV**	Location	**Salvador, Brazil**

Sizing Calculation Information

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

Central Cooling Coil Sizing Data

Total coil load	**3,0**	kW	Load occurs at	**Dec 1600**	
Sensible coil load	**2,2**	kW	OA DB / WB	**31,3 / 26,8**	°C
Coil L/s at Dec 1600	**132**	L/s	Entering DB / WB	**23,6 / 16,9**	°C
Max block L/s	**132**	L/s	Leaving DB / WB	**10,0 / 9,4**	°C
Sum of peak zone L/s	**132**	L/s	Coil ADP	**8,4**	°C
Sensible heat ratio	**0,721**		Bypass Factor	**0,100**	
L/(s kW)	**43,8**		Resulting RH	**45**	%
m²/kW	**3,6**		Design supply temp.	**12,8**	°C
W/m²	**274,2**		Zone T-stat Check	**1 of 1**	OK
Water flow @ 5,6 K rise	**N/A**		Max zone temperature deviation	**0,0**	K

Central Heating Coil Sizing Data

Max coil load	**1,8**	kW	Load occurs at	**Des Htg**	
Coil L/s at Des Htg	**132**	L/s	W/m²	**160,6**	
Max coil L/s	**132**	L/s	Ent. DB / Lvg DB	**9,0 / 20,1**	°C
Water flow @ 11,1 K drop	**N/A**				

Supply Fan Sizing Data

Actual max L/s	**132**	L/s	Fan motor BHP	**0,00**	BHP
Standard L/s	**132**	L/s	Fan motor kW	**0,00**	kW
Actual max L/(s·m²)	**12,02**	L/(s·m²)	Fan static	**0**	Pa

Outdoor Ventilation Air Data

Design airflow L/s	**17**	L/s	L/s/person	**5,67**	L/s/person
L/(s·m²)	**1,55**	L/(s·m²)			

Zone Sizing Summary for 14_CONSULTÓRIO INTERD.

Project Name: CER 2 12/22/2025
Prepared by: J FRAGOSO 09:18

Air System Information

Air System Name ..... **14_CONSULTÓRIO INTERD.**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **11,0** 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·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)
TÉRREO	132	132	12,02	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)
TÉRREO	1,5	Apr 1400	0,1	11,0

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)
TÉRREO							
T14_CONSULTÓRIO INTERD.	1	1,5	Apr 1400	132	0,1	11,0	12,02

Ventilation Sizing Summary for 14_CONSULTÓRIO INTERD.

Project Name: CER 2 12/22/2025
Prepared by: J FRAGOSO 09:18

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)
TÉRREO									
T14_CONSULTÓRIO INTERD.	1	11,0	3,0	132,2	0,00	0,00	17,0	0,0	17,0
Totals (incl. Space Multipliers)				**132,2**					**17,0**

Air System Sizing Summary for 15_ATEND. INFATIL 01

Project Name: CER 2 12/22/2025
Prepared by: J FRAGOSO 09:18

Air System Information

Air System Name	**15_ATEND. INFATIL 01**		Number of zones	**1**	
Equipment Class	**SPLT AHU**		Floor Area	**19,9**	m²
Air System Type	**SZCAV**		Location	**Salvador, Brazil**	

Sizing Calculation Information

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

Central Cooling Coil Sizing Data

Total coil load	**5,5**	kW	Load occurs at	**Jan 1500**	
Sensible coil load	**3,8**	kW	OA DB / WB	**32,0 / 26,8**	°C
Coil L/s at Jan 1500	**239**	L/s	Entering DB / WB	**23,7 / 17,6**	°C
Max block L/s	**239**	L/s	Leaving DB / WB	**10,7 / 10,2**	°C
Sum of peak zone L/s	**239**	L/s	Coil ADP	**9,3**	°C
Sensible heat ratio	**0,684**		Bypass Factor	**0,100**	
L/(s kW)	**43,6**		Resulting RH	**50**	%
m²/kW	**3,6**		Design supply temp.	**12,8**	°C
W/m²	**275,5**		Zone T-stat Check	**1 of 1**	OK
Water flow @ 5,6 K rise	**N/A**		Max zone temperature deviation	**0,0**	K

Central Heating Coil Sizing Data

Max coil load	**2,8**	kW	Load occurs at	**Des Htg**	
Coil L/s at Des Htg	**239**	L/s	W/m²	**139,9**	
Max coil L/s	**239**	L/s	Ent. DB / Lvg DB	**10,1 / 19,8**	°C
Water flow @ 11,1 K drop	**N/A**				

Supply Fan Sizing Data

Actual max L/s	**239**	L/s	Fan motor BHP	**0,00**	BHP
Standard L/s	**239**	L/s	Fan motor kW	**0,00**	kW
Actual max L/(s·m²)	**12,02**	L/(s·m²)	Fan static	**0**	Pa

Outdoor Ventilation Air Data

Design airflow L/s	**31**	L/s	L/s/person	**3,10**	L/s/person
L/(s·m²)	**1,56**	L/(s·m²)			

Zone Sizing Summary for 15_ATEND. INFATIL 01

Project Name: CER 2 12/22/2025
Prepared by: J FRAGOSO 09:18

Air System Information

Air System Name ..... **15_ATEND. INFATIL 01**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **19,9** 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·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)
TÉRREO	239	239	12,02	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)
TÉRREO	2,7	May 1400	0,1	19,9

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)
TÉRREO							
T15_ATEND. INFATIL 01	1	2,7	May 1400	239	0,1	19,9	12,02

Ventilation Sizing Summary for 15_ATEND. INFATIL 01

Project Name: CER 2 12/22/2025
Prepared by: J FRAGOSO 09:18

1. Summary

Ventilation Sizing Method ..... **Sum of Space OA Airflows**
Design Ventilation Airflow Rate ..... **31** 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)
TÉRREO									
T15_ATEND. INFATIL 01	1	19,9	10,0	239,2	0,00	0,00	31,0	0,0	31,0
Totals (incl. Space Multipliers)				**239,2**					**31,0**

Air System Sizing Summary for 16_ATEND. INFATIL 02

Air System Information

Air System Name	**16_ATEND. INFATIL 02**	Number of zones	**1**
Equipment Class	**SPLT AHU**	Floor Area	**19,9** m²
Air System Type	**SZCAV**	Location	**Salvador, Brazil**

Sizing Calculation Information

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

Central Cooling Coil Sizing Data

Total coil load	**5,8**	kW	Load occurs at	**Dec 1500**	
Sensible coil load	**4,0**	kW	OA DB / WB	**31,4 / 26,8**	°C
Coil L/s at Dec 1500	**265**	L/s	Entering DB / WB	**23,6 / 17,5**	°C
Max block L/s	**265**	L/s	Leaving DB / WB	**11,0 / 10,5**	°C
Sum of peak zone L/s	**265**	L/s	Coil ADP	**9,6**	°C
Sensible heat ratio	**0,697**		Bypass Factor	**0,100**	
L/(s kW)	**45,8**		Resulting RH	**50**	%
m²/kW	**3,4**		Design supply temp.	**12,8**	°C
W/m²	**290,2**		Zone T-stat Check	**1 of 1**	OK
Water flow @ 5,6 K rise	**N/A**		Max zone temperature deviation	**0,0**	K

Central Heating Coil Sizing Data

Max coil load	**3,1**	kW	Load occurs at	**Des Htg**	
Coil L/s at Des Htg	**265**	L/s	W/m²	**154,7**	
Max coil L/s	**265**	L/s	Ent. DB / Lvg DB	**10,1 / 19,8**	°C
Water flow @ 11,1 K drop	**N/A**				

Supply Fan Sizing Data

Actual max L/s	**265**	L/s	Fan motor BHP	**0,00**	BHP
Standard L/s	**265**	L/s	Fan motor kW	**0,00**	kW
Actual max L/(s·m²)	**13,30**	L/(s·m²)	Fan static	**0**	Pa

Outdoor Ventilation Air Data

Design airflow L/s	**31**	L/s	L/s/person	**3,10**	L/s/person
L/(s·m²)	**1,56**	L/(s·m²)			

Zone Sizing Summary for 16_ATEND. INFATIL 02

Air System Information

Air System Name ..... **16_ATEND. INFATIL 02**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **19,9** 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·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)
TÉRREO	265	265	13,30	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 (m²)
TÉRREO	2,9	Apr 1300	0,2	19,9

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)
TÉRREO							
T16_ATEND. INFATIL 02	1	2,9	Apr 1300	265	0,2	19,9	13,30

Ventilation Sizing Summary for 16_ATEND. INFATIL 02

Project Name: CER 2 12/22/2025
Prepared by: J FRAGOSO 09:18

1. Summary

Ventilation Sizing Method ..... **Sum of Space OA Airflows**
Design Ventilation Airflow Rate ..... **31** 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)
TÉRREO									
T16_ATEND. INFATIL 02	1	19,9	10,0	264,7	0,00	0,00	31,0	0,0	31,0
Totals (incl. Space Multipliers)				**264,7**					**31,0**

Air System Sizing Summary for 17_SL. ATIVID..DE VIDA

Project Name: CER 2 12/22/2025
Prepared by: J FRAGOSO 09:18

Air System Information

Air System Name	**17_SL. ATIVID..DE VIDA**	Number of zones	**1**
Equipment Class	**SPLT AHU**	Floor Area	**24,2** m²
Air System Type	**SZCAV**	Location	**Salvador, Brazil**

Sizing Calculation Information

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

Central Cooling Coil Sizing Data

Total coil load	**5,5**	kW	Load occurs at	**Feb 1500**	
Sensible coil load	**4,0**	kW	OA DB / WB	**32,0 / 26,8**	°C
Coil L/s at Feb 1500	**255**	L/s	Entering DB / WB	**24,0 / 17,2**	°C
Max block L/s	**255**	L/s	Leaving DB / WB	**10,8 / 10,2**	°C
Sum of peak zone L/s	**255**	L/s	Coil ADP	**9,4**	°C
Sensible heat ratio	**0,735**		Bypass Factor	**0,100**	
L/(s kW)	**46,3**		Resulting RH	**45**	%
m²/kW	**4,4**		Design supply temp.	**12,8**	°C
W/m²	**227,5**		Zone T-stat Check	**1 of 1**	OK
Water flow @ 5,6 K rise	**N/A**		Max zone temperature deviation	**0,0**	K

Central Heating Coil Sizing Data

Max coil load	**3,4**	kW	Load occurs at	**Des Htg**	
Coil L/s at Des Htg	**255**	L/s	W/m²	**140,8**	
Max coil L/s	**255**	L/s	Ent. DB / Lvg DB	**9,1 / 20,2**	°C
Water flow @ 11,1 K drop	**N/A**				

Supply Fan Sizing Data

Actual max L/s	**255**	L/s	Fan motor BHP	**0,00**	BHP
Standard L/s	**255**	L/s	Fan motor kW	**0,00**	kW
Actual max L/(s·m²)	**10,54**	L/(s·m²)	Fan static	**0**	Pa

Outdoor Ventilation Air Data

Design airflow L/s	**36**	L/s	L/s/person	**18,00**	L/s/person
L/(s·m²)	**1,49**	L/(s·m²)			

Zone Sizing Summary for 17_SL. ATIVID..DE VIDA

Project Name: CER 2 12/22/2025
Prepared by: J FRAGOSO 09:18

Air System Information

Air System Name ..... **17_SL. ATIVID..DE VIDA**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **24,2** 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·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)
TÉRREO	255	255	10,54	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)
TÉRREO	2,8	Jan 1400	0,1	24,2

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)
TÉRREO							
T17_SL. ATIVID..DE VIDA	1	2,8	Jan 1400	255	0,1	24,2	10,54

Ventilation Sizing Summary for 17_SL. ATIVID..DE VIDA

Project Name: CER 2 12/22/2025
Prepared by: J FRAGOSO 09:18

1. Summary

Ventilation Sizing Method ..... **Sum of Space OA Airflows**
Design Ventilation Airflow Rate ..... **36** 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)
TÉRREO									
T17_SL. ATIVID..DE VIDA	1	24,2	2,0	255,1	0,00	0,00	36,0	0,0	36,0
Totals (incl. Space Multipliers)				**255,1**					**36,0**

Air System Sizing Summary for 18_SL. ATEND. ADULTO 01

Project Name: CER 2 12/22/2025
Prepared by: J FRAGOSO 09:18

Air System Information

Air System Name	**18_SL. ATEND. ADULTO 01**	Number of zones	**1**	
Equipment Class	**SPLT AHU**	Floor Area	**19,9**	m²
Air System Type	**SZCAV**	Location	**Salvador, Brazil**	

Sizing Calculation Information

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

Central Cooling Coil Sizing Data

Total coil load	**5,6**	kW	Load occurs at	**Dec 1500**	
Sensible coil load	**3,7**	kW	OA DB / WB	**31,4 / 26,8**	°C
Coil L/s at Dec 1500	**205**	L/s	Entering DB / WB	**24,1 / 17,5**	°C
Max block L/s	**205**	L/s	Leaving DB / WB	**9,0 / 8,5**	°C
Sum of peak zone L/s	**205**	L/s	Coil ADP	**7,3**	°C
Sensible heat ratio	**0,673**		Bypass Factor	**0,100**	
L/(s kW)	**36,8**		Resulting RH	**45**	%
m²/kW	**3,6**		Design supply temp.	**12,8**	°C
W/m²	**278,9**		Zone T-stat Check	**0 of 1**	OK
Water flow @ 5,6 K rise	**N/A**		Max zone temperature deviation	**0,0**	K

Central Heating Coil Sizing Data

Max coil load	**2,7**	kW	Load occurs at	**Des Htg**	
Coil L/s at Des Htg	**205**	L/s	W/m²	**137,5**	
Max coil L/s	**205**	L/s	Ent. DB / Lvg DB	**8,4 / 19,5**	°C
Water flow @ 11,1 K drop	**N/A**				

Supply Fan Sizing Data

Actual max L/s	**205**	L/s	Fan motor BHP	**0,00**	BHP
Standard L/s	**204**	L/s	Fan motor kW	**0,00**	kW
Actual max L/(s·m²)	**10,28**	L/(s·m²)	Fan static	**0**	Pa

Outdoor Ventilation Air Data

Design airflow L/s	**31**	L/s	L/s/person	**3,10**	L/s/person
L/(s·m²)	**1,56**	L/(s·m²)			

Zone Sizing Summary for 18_SL. ATEND. ADULTO 01

Project Name: CER 2 12/22/2025
Prepared by: J FRAGOSO 09:18

Air System Information

Air System Name ..... **18_SL. ATEND. ADULTO 01**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **19,9** 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·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)
TÉRREO	205	205	10,28	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)
TÉRREO	2,3	Jan 1400	0,1	19,9

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)
TÉRREO							
T18_SL. ATEND. ADULTO 01	1	2,3	Jan 1400	205	0,1	19,9	10,28

Ventilation Sizing Summary for 18_SL. ATEND. ADULTO 01

Project Name: CER 2 12/22/2025
Prepared by: J FRAGOSO 09:18

1. Summary

Ventilation Sizing Method ..... **Sum of Space OA Airflows**
Design Ventilation Airflow Rate ..... **31** 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)
TÉRREO									
T18_SL. ATEND. ADULTO 01	1	19,9	10,0	204,5	0,00	0,00	31,0	0,0	31,0
Totals (incl. Space Multipliers)				**204,5**					**31,0**

Air System Sizing Summary for 19_SL. ATEND. ADULTO 02

Project Name: CER 2 12/22/2025
Prepared by: J FRAGOSO 09:18

Air System Information

Air System Name	**19_SL. ATEND. ADULTO 02**		Number of zones	**1**	
Equipment Class	**SPLT AHU**		Floor Area	**19,9**	m²
Air System Type	**SZCAV**		Location	**Salvador, Brazil**	

Sizing Calculation Information

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

Central Cooling Coil Sizing Data

Total coil load	**4,9**	kW	Load occurs at	**Dec 1500**	
Sensible coil load	**3,1**	kW	OA DB / WB	**31,4 / 26,8**	°C
Coil L/s at Dec 1500	**151**	L/s	Entering DB / WB	**24,4 / 18,0**	°C
Max block L/s	**151**	L/s	Leaving DB / WB	**7,7 / 7,3**	°C
Sum of peak zone L/s	**151**	L/s	Coil ADP	**5,8**	°C
Sensible heat ratio	**0,625**		Bypass Factor	**0,100**	
L/(s kW)	**31,0**		Resulting RH	**45**	%
m²/kW	**4,1**		Design supply temp.	**12,8**	°C
W/m²	**245,1**		Zone T-stat Check	**1 of 1**	OK
Water flow @ 5,6 K rise	**N/A**		Max zone temperature deviation	**0,0**	K

Central Heating Coil Sizing Data

Max coil load	**2,0**	kW	Load occurs at	**Des Htg**	
Coil L/s at Des Htg	**151**	L/s	W/m²	**101,4**	
Max coil L/s	**151**	L/s	Ent. DB / Lvg DB	**9,3 / 20,3**	°C
Water flow @ 11,1 K drop	**N/A**				

Supply Fan Sizing Data

Actual max L/s	**151**	L/s	Fan motor BHP	**0,00**	BHP
Standard L/s	**151**	L/s	Fan motor kW	**0,00**	kW
Actual max L/(s·m²)	**7,60**	L/(s·m²)	Fan static	**0**	Pa

Outdoor Ventilation Air Data

Design airflow L/s	**31**	L/s	L/s/person	**3,10**	L/s/person
L/(s·m²)	**1,56**	L/(s·m²)			

Zone Sizing Summary for 19_SL. ATEND. ADULTO 02

Project Name: CER 2 12/22/2025
Prepared by: J FRAGOSO 09:18

Air System Information

Air System Name ..... **19_SL. ATEND. ADULTO 02**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **19,9** 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·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)
TÉRREO	151	151	7,60	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)
TÉRREO	1,7	Jan 2100	0,0	19,9

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)
TÉRREO							
T19_SL. ATEND. ADULTO 02	1	1,7	Jan 2100	151	0,0	19,9	7,60

Ventilation Sizing Summary for 19_SL. ATEND. ADULTO 02

Project Name: CER 2 12/22/2025
Prepared by: J FRAGOSO 09:18

1. Summary

Ventilation Sizing Method ..... **Sum of Space OA Airflows**
Design Ventilation Airflow Rate ..... **31** 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)
TÉRREO									
T19_SL. ATEND. ADULTO 02	1	19,9	10,0	151,3	0,00	0,00	31,0	0,0	31,0
Totals (incl. Space Multipliers)				**151,3**					**31,0**

Air System Sizing Summary for 20_SL. ESTIMUL. PREC 01

Project Name: CER 2 12/22/2025
Prepared by: J FRAGOSO 09:18

Air System Information

Air System Name	**20_SL. ESTIMUL. PREC 01**	Number of zones	**1**	
Equipment Class	**SPLT AHU**	Floor Area	**18,8**	m²
Air System Type	**SZCAV**	Location	**Salvador, Brazil**	

Sizing Calculation Information

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

Central Cooling Coil Sizing Data

Total coil load	**4,1**	kW	Load occurs at	**Dec 1500**	
Sensible coil load	**2,9**	kW	OA DB / WB	**31,4 / 26,8**	°C
Coil L/s at Dec 1500	**179**	L/s	Entering DB / WB	**23,9 / 17,3**	°C
Max block L/s	**179**	L/s	Leaving DB / WB	**10,4 / 9,9**	°C
Sum of peak zone L/s	**179**	L/s	Coil ADP	**8,9**	°C
Sensible heat ratio	**0,704**		Bypass Factor	**0,100**	
L/(s kW)	**43,3**		Resulting RH	**45**	%
m²/kW	**4,5**		Design supply temp.	**12,8**	°C
W/m²	**220,6**		Zone T-stat Check	**1 of 1**	OK
Water flow @ 5,6 K rise	**N/A**		Max zone temperature deviation	**0,0**	K

Central Heating Coil Sizing Data

Max coil load	**2,4**	kW	Load occurs at	**Des Htg**	
Coil L/s at Des Htg	**179**	L/s	W/m²	**127,7**	
Max coil L/s	**179**	L/s	Ent. DB / Lvg DB	**8,5 / 19,6**	°C
Water flow @ 11,1 K drop	**N/A**				

Supply Fan Sizing Data

Actual max L/s	**179**	L/s	Fan motor BHP	**0,00**	BHP
Standard L/s	**179**	L/s	Fan motor kW	**0,00**	kW
Actual max L/(s·m²)	**9,54**	L/(s·m²)	Fan static	**0**	Pa

Outdoor Ventilation Air Data

Design airflow L/s	**29**	L/s	L/s/person	**14,50**	L/s/person
L/(s·m²)	**1,54**	L/(s·m²)			

Zone Sizing Summary for 20_SL. ESTIMUL. PREC 01

Project Name: CER 2 12/22/2025
Prepared by: J FRAGOSO 09:18

Air System Information

Air System Name ..... **20_SL. ESTIMUL. PREC 01**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **18,8** 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·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)
TÉRREO	179	179	9,54	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)
TÉRREO	2,0	May 1400	0,1	18,8

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)
TÉRREO							
T20_SL. ESTIMUL. PREC 01	1	2,0	May 1400	179	0,1	18,8	9,54

Ventilation Sizing Summary for 20_SL. ESTIMUL. PREC 01

Project Name: CER 2 12/22/2025
Prepared by: J FRAGOSO 09:18

1. Summary

Ventilation Sizing Method ..... **Sum of Space OA Airflows**
Design Ventilation Airflow Rate ..... **29** 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)
TÉRREO									
T20_SL. ESTIMUL. PREC 01	1	18,8	2,0	179,4	0,00	0,00	29,0	0,0	29,0
Totals (incl. Space Multipliers)				**179,4**					**29,0**

Air System Sizing Summary for 21_SL. ESTIMUL. PREC 02

Project Name: CER 2 12/22/2025
Prepared by: J FRAGOSO 09:18

Air System Information

Air System Name	**21_SL. ESTIMUL. PREC 02**		Number of zones	**1**	
Equipment Class	**SPLT AHU**		Floor Area	**18,8**	m²
Air System Type	**SZCAV**		Location	**Salvador, Brazil**	

Sizing Calculation Information

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

Central Cooling Coil Sizing Data

Total coil load	**4,0**	kW	Load occurs at	**Dec 1600**	
Sensible coil load	**2,8**	kW	OA DB / WB	**31,3 / 26,8**	°C
Coil L/s at Dec 1600	**200**	L/s	Entering DB / WB	**23,8 / 17,7**	°C
Max block L/s	**200**	L/s	Leaving DB / WB	**12,0 / 11,5**	°C
Sum of peak zone L/s	**200**	L/s	Coil ADP	**10,7**	°C
Sensible heat ratio	**0,710**		Bypass Factor	**0,100**	
L/(s kW)	**50,3**		Resulting RH	**50**	%
m²/kW	**4,7**		Design supply temp.	**12,8**	°C
W/m²	**211,5**		Zone T-stat Check	**1 of 1**	OK
Water flow @ 5,6 K rise	**N/A**		Max zone temperature deviation	**0,0**	K

Central Heating Coil Sizing Data

Max coil load	**2,3**	kW	Load occurs at	**Des Htg**	
Coil L/s at Des Htg	**200**	L/s	W/m²	**124,0**	
Max coil L/s	**200**	L/s	Ent. DB / Lvg DB	**9,9 / 19,6**	°C
Water flow @ 11,1 K drop	**N/A**				

Supply Fan Sizing Data

Actual max L/s	**200**	L/s	Fan motor BHP	**0,00**	BHP
Standard L/s	**200**	L/s	Fan motor kW	**0,00**	kW
Actual max L/(s·m²)	**10,63**	L/(s·m²)	Fan static	**0**	Pa

Outdoor Ventilation Air Data

Design airflow L/s	**29**	L/s	L/s/person	**14,50**	L/s/person
L/(s·m²)	**1,54**	L/(s·m²)			

Zone Sizing Summary for 21_SL. ESTIMUL. PREC 02

Project Name: CER 2 12/22/2025
Prepared by: J FRAGOSO 09:18

Air System Information

Air System Name ..... **21_SL. ESTIMUL. PREC 02**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **18,8** 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·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)
TÉRREO	200	200	10,63	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 (m²)
TÉRREO	2,2	May 1400	0,1	18,8

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)
TÉRREO							
T21_SL. ESTIMUL. PREC 02	1	2,2	May 1400	200	0,1	18,8	10,63

Ventilation Sizing Summary for 21_SL. ESTIMUL. PREC 02

Project Name: CER 2
Prepared by: J FRAGOSO

12/22/2025
09:18

1. Summary

Ventilation Sizing Method ..... **Sum of Space OA Airflows**
Design Ventilation Airflow Rate ..... **29** 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)
TÉRREO									
T21_SL. ESTIMUL. PREC 02	1	18,8	2,0	199,9	0,00	0,00	29,0	0,0	29,0
Totals (incl. Space Multipliers)				**199,9**					**29,0**

Air System Sizing Summary for 22_GINÁSIO DE GINESIOT.

Project Name: CER 2 12/22/2025
Prepared by: J FRAGOSO 09:18

Air System Information

Air System Name	**22_GINÁSIO DE GINESIOT.**	Number of zones	**1**
Equipment Class	**SPLT AHU**	Floor Area	**108,5** m²
Air System Type	**SZCAV**	Location	**Salvador, Brazil**

Sizing Calculation Information

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

Central Cooling Coil Sizing Data

Total coil load	**20,6**	kW	Load occurs at	**Dec 1500**	
Sensible coil load	**14,1**	kW	OA DB / WB	**31,4 / 26,8**	°C
Coil L/s at Dec 1500	**967**	L/s	Entering DB / WB	**24,1 / 18,2**	°C
Max block L/s	**967**	L/s	Leaving DB / WB	**12,1 / 11,6**	°C
Sum of peak zone L/s	**967**	L/s	Coil ADP	**10,7**	°C
Sensible heat ratio	**0,683**		Bypass Factor	**0,100**	
L/(s kW)	**47,0**		Resulting RH	**50**	%
m²/kW	**5,3**		Design supply temp.	**12,8**	°C
W/m²	**189,8**		Zone T-stat Check	**1 of 1**	OK
Water flow @ 5,6 K rise	**N/A**		Max zone temperature deviation	**0,0**	K

Central Heating Coil Sizing Data

Max coil load	**11,3**	kW	Load occurs at	**Des Htg**	
Coil L/s at Des Htg	**967**	L/s	W/m²	**104,0**	
Max coil L/s	**967**	L/s	Ent. DB / Lvg DB	**10,1 / 19,7**	°C
Water flow @ 11,1 K drop	**N/A**				

Supply Fan Sizing Data

Actual max L/s	**967**	L/s	Fan motor BHP	**0,00**	BHP
Standard L/s	**966**	L/s	Fan motor kW	**0,00**	kW
Actual max L/(s·m²)	**8,91**	L/(s·m²)	Fan static	**0**	Pa

Outdoor Ventilation Air Data

Design airflow L/s	**164**	L/s	L/s/person	**13,67**	L/s/person
L/(s·m²)	**1,51**	L/(s·m²)			

Zone Sizing Summary for 22_GINÁSIO DE GINESIOT.

Project Name: CER 2 12/22/2025
Prepared by: J FRAGOSO 09:18

Air System Information

Air System Name ..... **22_GINÁSIO DE GINESIOT.**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **108,5** 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·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)
TÉRREO	967	967	8,91	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)
TÉRREO	10,7	Jan 1300	0,7	108,5

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)
TÉRREO							
T22_GINÁSIO DE GINESIOT.	1	10,7	Jan 1300	967	0,7	108,5	8,91

Ventilation Sizing Summary for 22_GINÁSIO DE GINESIOT.

Project Name: CER 2 12/22/2025
Prepared by: J FRAGOSO 09:18

1. Summary

Ventilation Sizing Method ..... **Sum of Space OA Airflows**
Design Ventilation Airflow Rate ..... **164** 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)
TÉRREO									
T22_GINÁSIO DE GINESIOT.	1	108,5	12,0	967,1	0,00	0,00	164,0	0,0	164,0
Totals (incl. Space Multipliers)				**967,1**					**164,0**

Air System Sizing Summary for 23_SL. DE GIN. INFANTIL

Project Name: CER 2 12/22/2025
Prepared by: J FRAGOSO 09:18

Air System Information

Air System Name	**23_SL. DE GIN. INFANTIL**	Number of zones	**1**
Equipment Class	**SPLT AHU**	Floor Area	**24,9** m²
Air System Type	**SZCAV**	Location	**Salvador, Brazil**

Sizing Calculation Information

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

Central Cooling Coil Sizing Data

Total coil load	**5,7**	kW	Load occurs at	**Feb 1500**	
Sensible coil load	**4,1**	kW	OA DB / WB	**32,0 / 26,8**	°C
Coil L/s at Feb 1500	**259**	L/s	Entering DB / WB	**23,9 / 17,2**	°C
Max block L/s	**259**	L/s	Leaving DB / WB	**10,7 / 10,1**	°C
Sum of peak zone L/s	**259**	L/s	Coil ADP	**9,2**	°C
Sensible heat ratio	**0,729**		Bypass Factor	**0,100**	
L/(s kW)	**45,7**		Resulting RH	**45**	%
m²/kW	**4,4**		Design supply temp.	**12,8**	°C
W/m²	**227,7**		Zone T-stat Check	**1 of 1**	OK
Water flow @ 5,6 K rise	**N/A**		Max zone temperature deviation	**0,0**	K

Central Heating Coil Sizing Data

Max coil load	**3,5**	kW	Load occurs at	**Des Htg**	
Coil L/s at Des Htg	**259**	L/s	W/m²	**139,0**	
Max coil L/s	**259**	L/s	Ent. DB / Lvg DB	**8,7 / 19,8**	°C
Water flow @ 11,1 K drop	**N/A**				

Supply Fan Sizing Data

Actual max L/s	**259**	L/s	Fan motor BHP	**0,00**	BHP
Standard L/s	**259**	L/s	Fan motor kW	**0,00**	kW
Actual max L/(s·m²)	**10,41**	L/(s·m²)	Fan static	**0**	Pa

Outdoor Ventilation Air Data

Design airflow L/s	**38**	L/s	L/s/person	**19,00**	L/s/person
L/(s·m²)	**1,53**	L/(s·m²)			

Zone Sizing Summary for 23_SL. DE GIN. INFANTIL

Air System Information

Air System Name ..... **23_SL. DE GIN. INFANTIL**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **24,9** 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·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)
TÉRREO	259	259	10,41	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)
TÉRREO	2,9	May 1400	0,2	24,9

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)
TÉRREO							
T23_SL. DE GIN. INFANTIL	1	2,9	May 1400	259	0,2	24,9	10,41

Ventilation Sizing Summary for 23_SL. DE GIN. INFANTIL

Project Name: CER 2 12/22/2025
Prepared by: J FRAGOSO 09:18

1. Summary

Ventilation Sizing Method ..... **Sum of Space OA Airflows**
Design Ventilation Airflow Rate ..... **38** 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)
TÉRREO									
T23_SL. DE GIN. INFANTIL	1	24,9	2,0	259,2	0,00	0,00	38,0	0,0	38,0
Totals (incl. Space Multipliers)				**259,2**					**38,0**

Air System Sizing Summary for 24_AMB. ESTOMIA

Project Name: CER 2 12/22/2025
Prepared by: J FRAGOSO 09:18

Air System Information

Air System Name	**24_AMB. ESTOMIA**	Number of zones	**1**
Equipment Class	**SPLT AHU**	Floor Area	**12,0** m²
Air System Type	**SZCAV**	Location	**Salvador, Brazil**

Sizing Calculation Information

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

Central Cooling Coil Sizing Data

Total coil load	**3,4**	kW	Load occurs at	**Dec 1500**	
Sensible coil load	**2,6**	kW	OA DB / WB	**31,4 / 26,8**	°C
Coil L/s at Dec 1500	**166**	L/s	Entering DB / WB	**23,7 / 16,8**	°C
Max block L/s	**166**	L/s	Leaving DB / WB	**10,8 / 10,2**	°C
Sum of peak zone L/s	**166**	L/s	Coil ADP	**9,3**	°C
Sensible heat ratio	**0,763**		Bypass Factor	**0,100**	
L/(s kW)	**48,9**		Resulting RH	**45**	%
m²/kW	**3,5**		Design supply temp.	**12,8**	°C
W/m²	**283,4**		Zone T-stat Check	**1 of 1**	OK
Water flow @ 5,6 K rise	**N/A**		Max zone temperature deviation	**0,0**	K

Central Heating Coil Sizing Data

Max coil load	**2,2**	kW	Load occurs at	**Des Htg**	
Coil L/s at Des Htg	**166**	L/s	W/m²	**185,3**	
Max coil L/s	**166**	L/s	Ent. DB / Lvg DB	**9,0 / 20,1**	°C
Water flow @ 11,1 K drop	**N/A**				

Supply Fan Sizing Data

Actual max L/s	**166**	L/s	Fan motor BHP	**0,00**	BHP
Standard L/s	**166**	L/s	Fan motor kW	**0,00**	kW
Actual max L/(s·m²)	**13,87**	L/(s·m²)	Fan static	**0**	Pa

Outdoor Ventilation Air Data

Design airflow L/s	**18**	L/s	L/s/person	**9,00**	L/s/person
L/(s·m²)	**1,50**	L/(s·m²)			

Zone Sizing Summary for 24_AMB. ESTOMIA

Project Name: CER 2 12/22/2025
Prepared by: J FRAGOSO 09:18

Air System Information

Air System Name ..... **24_AMB. ESTOMIA**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **12,0** 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·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)
TÉRREO	166	166	13,87	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)
TÉRREO	1,8	May 1400	0,1	12,0

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)
TÉRREO							
T24_AMB. ESTOMIA	1	1,8	May 1400	166	0,1	12,0	13,87

Ventilation Sizing Summary for 24_AMB. ESTOMIA

Project Name: CER 2 12/22/2025
Prepared by: J FRAGOSO 09:18

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)
TÉRREO									
T24_AMB. ESTOMIA	1	12,0	2,0	166,4	0,00	0,00	18,0	0,0	18,0
Totals (incl. Space Multipliers)				**166,4**					**18,0**

Air System Sizing Summary for 25_ACOLHIMENTO FAMILIA

Project Name: CER 2 12/22/2025
Prepared by: J FRAGOSO 09:18

Air System Information

Air System Name	**25_ACOLHIMENTO FAMILIA**	Number of zones	**1**
Equipment Class	**SPLT AHU**	Floor Area	**46,2** m²
Air System Type	**SZCAV**	Location	**Salvador, Brazil**

Sizing Calculation Information

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

Central Cooling Coil Sizing Data

Total coil load	**13,5**	kW	Load occurs at	**Feb 1400**	
Sensible coil load	**9,9**	kW	OA DB / WB	**31,8 / 26,8**	°C
Coil L/s at Feb 1400	**597**	L/s	Entering DB / WB	**23,6 / 16,7**	°C
Max block L/s	**597**	L/s	Leaving DB / WB	**9,8 / 9,2**	°C
Sum of peak zone L/s	**597**	L/s	Coil ADP	**8,3**	°C
Sensible heat ratio	**0,733**		Bypass Factor	**0,100**	
L/(s kW)	**44,2**		Resulting RH	**45**	%
m²/kW	**3,4**		Design supply temp.	**12,8**	°C
W/m²	**292,6**		Zone T-stat Check	**1 of 1**	OK
Water flow @ 5,6 K rise	**N/A**		Max zone temperature deviation	**0,0**	K

Central Heating Coil Sizing Data

Max coil load	**8,0**	kW	Load occurs at	**Des Htg**	
Coil L/s at Des Htg	**597**	L/s	W/m²	**172,5**	
Max coil L/s	**597**	L/s	Ent. DB / Lvg DB	**8,8 / 19,9**	°C
Water flow @ 11,1 K drop	**N/A**				

Supply Fan Sizing Data

Actual max L/s	**597**	L/s	Fan motor BHP	**0,00**	BHP
Standard L/s	**596**	L/s	Fan motor kW	**0,00**	kW
Actual max L/(s·m²)	**12,92**	L/(s·m²)	Fan static	**0**	Pa

Outdoor Ventilation Air Data

Design airflow L/s	**69**	L/s	L/s/person	**4,31**	L/s/person
L/(s·m²)	**1,49**	L/(s·m²)			

Zone Sizing Summary for 25_ACOLHIMENTO FAMILIA

Project Name: CER 2 12/22/2025
Prepared by: J FRAGOSO 09:18

Air System Information

Air System Name ..... **25_ACOLHIMENTO FAMILIA**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **46,2** 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·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)
TÉRREO	597	597	12,92	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)
TÉRREO	6,6	May 1400	0,3	46,2

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)
TÉRREO							
T25_ACOLHIMENTO FAMILIA	1	6,6	May 1400	597	0,3	46,2	12,92

Ventilation Sizing Summary for 25_ACOLHIMENTO FAMILIA

Project Name: CER 2 12/22/2025
Prepared by: J FRAGOSO 09:18

1. Summary

Ventilation Sizing Method ..... **Sum of Space OA Airflows**
Design Ventilation Airflow Rate ..... **69** 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)
TÉRREO									
T25_ACOLHIMENTO FAMILIA	1	46,2	16,0	596,9	0,00	0,00	69,0	0,0	69,0
Totals (incl. Space Multipliers)				**596,9**					**69,0**

Air System Sizing Summary for 26_CONS. MULTPROF. 01

Project Name: CER 2 12/22/2025
Prepared by: J FRAGOSO 09:18

Air System Information

Air System Name	**26_CONS. MULTPROF. 01**	Number of zones	**1**
Equipment Class	**SPLT AHU**	Floor Area	**10,1** m²
Air System Type	**SZCAV**	Location	**Salvador, Brazil**

Sizing Calculation Information

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

Central Cooling Coil Sizing Data

Total coil load	**2,5**	kW	Load occurs at	**Dec 1400**	
Sensible coil load	**1,8**	kW	OA DB / WB	**31,3 / 26,8**	°C
Coil L/s at Dec 1400	**106**	L/s	Entering DB / WB	**23,9 / 17,2**	°C
Max block L/s	**106**	L/s	Leaving DB / WB	**9,9 / 9,4**	°C
Sum of peak zone L/s	**106**	L/s	Coil ADP	**8,4**	°C
Sensible heat ratio	**0,701**		Bypass Factor	**0,100**	
L/(s kW)	**41,5**		Resulting RH	**45**	%
m²/kW	**4,0**		Design supply temp.	**12,8**	°C
W/m²	**251,9**		Zone T-stat Check	**1 of 1**	OK
Water flow @ 5,6 K rise	**N/A**		Max zone temperature deviation	**0,0**	K

Central Heating Coil Sizing Data

Max coil load	**1,4**	kW	Load occurs at	**Des Htg**	
Coil L/s at Des Htg	**106**	L/s	W/m²	**139,5**	
Max coil L/s	**106**	L/s	Ent. DB / Lvg DB	**8,7 / 19,8**	°C
Water flow @ 11,1 K drop	**N/A**				

Supply Fan Sizing Data

Actual max L/s	**106**	L/s	Fan motor BHP	**0,00**	BHP
Standard L/s	**105**	L/s	Fan motor kW	**0,00**	kW
Actual max L/(s·m²)	**10,45**	L/(s·m²)	Fan static	**0**	Pa

Outdoor Ventilation Air Data

Design airflow L/s	**15**	L/s	L/s/person	**5,00**	L/s/person
L/(s·m²)	**1,49**	L/(s·m²)			

Zone Sizing Summary for 26_CONS. MULTPROF. 01

Project Name: CER 2 12/22/2025
Prepared by: J FRAGOSO 09:18

Air System Information

Air System Name ..... **26_CONS. MULTPROF. 01**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **10,1** 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·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)
TÉRREO	106	106	10,45	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)
TÉRREO	1,2	Jan 1400	0,1	10,1

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)
TÉRREO							
T26_CONS. MULTPROF. 01	1	1,2	Jan 1400	106	0,1	10,1	10,45

Ventilation Sizing Summary for 26_CONS. MULTPROF. 01

Project Name: CER 2 12/22/2025
Prepared by: J FRAGOSO 09:18

1. Summary

Ventilation Sizing Method ..... **Sum of Space OA Airflows**
Design Ventilation Airflow Rate ..... **15** 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)
TÉRREO									
T26_CONS. MULTPROF. 01	1	10,1	3,0	105,5	0,00	0,00	15,0	0,0	15,0
Totals (incl. Space Multipliers)				**105,5**					**15,0**

Air System Sizing Summary for 27_CONS. MULTPROF. 02

Project Name: CER 2 12/22/2025
Prepared by: J FRAGOSO 09:18

Air System Information

Air System Name	**27_CONS. MULTPROF. 02**		Number of zones	**1**
Equipment Class	**SPLT AHU**		Floor Area	**10,1** m²
Air System Type	**SZCAV**		Location	**Salvador, Brazil**

Sizing Calculation Information

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

Central Cooling Coil Sizing Data

Total coil load	**3,5**	kW	Load occurs at	**Dec 1500**	
Sensible coil load	**2,7**	kW	OA DB / WB	**31,4 / 26,8**	°C
Coil L/s at Dec 1500	**173**	L/s	Entering DB / WB	**23,2 / 16,3**	°C
Max block L/s	**173**	L/s	Leaving DB / WB	**10,3 / 9,7**	°C
Sum of peak zone L/s	**173**	L/s	Coil ADP	**8,8**	°C
Sensible heat ratio	**0,780**		Bypass Factor	**0,100**	
L/(s kW)	**49,9**		Resulting RH	**45**	%
m²/kW	**2,9**		Design supply temp.	**12,8**	°C
W/m²	**343,9**		Zone T-stat Check	**1 of 1**	OK
Water flow @ 5,6 K rise	**N/A**		Max zone temperature deviation	**0,0**	K

Central Heating Coil Sizing Data

Max coil load	**2,3**	kW	Load occurs at	**Des Htg**	
Coil L/s at Des Htg	**173**	L/s	W/m²	**228,7**	
Max coil L/s	**173**	L/s	Ent. DB / Lvg DB	**8,8 / 19,8**	°C
Water flow @ 11,1 K drop	**N/A**				

Supply Fan Sizing Data

Actual max L/s	**173**	L/s	Fan motor BHP	**0,00**	BHP
Standard L/s	**173**	L/s	Fan motor kW	**0,00**	kW
Actual max L/(s·m²)	**17,15**	L/(s·m²)	Fan static	**0**	Pa

Outdoor Ventilation Air Data

Design airflow L/s	**15**	L/s	L/s/person	**5,00**	L/s/person
L/(s·m²)	**1,49**	L/(s·m²)			

Zone Sizing Summary for 27_CONS. MULTPROF. 02

Project Name: CER 2 12/22/2025
Prepared by: J FRAGOSO 09:18

Air System Information

Air System Name ..... **27_CONS. MULTPROF. 02**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **10,1** 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·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)
TÉRREO	173	173	17,15	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)
TÉRREO	1,9	May 1400	0,1	10,1

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)
TÉRREO							
T27_CONS. MULTPROF. 02	1	1,9	May 1400	173	0,1	10,1	17,15

Ventilation Sizing Summary for 27_CONS. MULTPROF. 02

Project Name: CER 2 12/22/2025
Prepared by: J FRAGOSO 09:18

1. Summary

Ventilation Sizing Method ..... **Sum of Space OA Airflows**
Design Ventilation Airflow Rate ..... **15** 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)
TÉRREO									
T27_CONS. MULTPROF. 02	1	10,1	3,0	173,2	0,00	0,00	15,0	0,0	15,0
Totals (incl. Space Multipliers)				**173,2**					**15,0**

Air System Sizing Summary for 28_CONS. FISIATRIA/ORTO

Project Name: CER 2 12/22/2025
Prepared by: J FRAGOSO 09:18

Air System Information

Air System Name	**28_CONS. FISIATRIA/ORTO**	Number of zones	**1**	
Equipment Class	**SPLT AHU**	Floor Area	**8,9**	m²
Air System Type	**SZCAV**	Location	**Salvador, Brazil**	

Sizing Calculation Information

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

Central Cooling Coil Sizing Data

Total coil load	**3,2**	kW	Load occurs at	**Feb 1500**	
Sensible coil load	**2,4**	kW	OA DB / WB	**32,0 / 26,8**	°C
Coil L/s at Feb 1500	**149**	L/s	Entering DB / WB	**23,6 / 16,7**	°C
Max block L/s	**149**	L/s	Leaving DB / WB	**10,1 / 9,6**	°C
Sum of peak zone L/s	**149**	L/s	Coil ADP	**8,7**	°C
Sensible heat ratio	**0,745**		Bypass Factor	**0,100**	
L/(s kW)	**46,0**		Resulting RH	**45**	%
m²/kW	**2,7**		Design supply temp.	**12,8**	°C
W/m²	**364,9**		Zone T-stat Check	**1 of 1**	OK
Water flow @ 5,6 K rise	**N/A**		Max zone temperature deviation	**0,0**	K

Central Heating Coil Sizing Data

Max coil load	**2,0**	kW	Load occurs at	**Des Htg**	
Coil L/s at Des Htg	**149**	L/s	W/m²	**224,0**	
Max coil L/s	**149**	L/s	Ent. DB / Lvg DB	**8,6 / 19,7**	°C
Water flow @ 11,1 K drop	**N/A**				

Supply Fan Sizing Data

Actual max L/s	**149**	L/s	Fan motor BHP	**0,00**	BHP
Standard L/s	**149**	L/s	Fan motor kW	**0,00**	kW
Actual max L/(s·m²)	**16,78**	L/(s·m²)	Fan static	**0**	Pa

Outdoor Ventilation Air Data

Design airflow L/s	**17**	L/s	L/s/person	**5,67**	L/s/person
L/(s·m²)	**1,91**	L/(s·m²)			

Zone Sizing Summary for 28_CONS. FISIATRIA/ORTO

Project Name: CER 2 12/22/2025
Prepared by: J FRAGOSO 09:18

Air System Information

Air System Name ..... **28_CONS. FISIATRIA/ORTO**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **8,9** 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·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)
TÉRREO	149	149	16,78	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)
TÉRREO	1,7	Dec 1500	0,1	8,9

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)
TÉRREO							
T28_CONS. FISIATRIA/ORTO	1	1,7	Dec 1500	149	0,1	8,9	16,78

Ventilation Sizing Summary for 28_CONS. FISIATRIA/ORTO

Project Name: CER 2 12/22/2025
Prepared by: J FRAGOSO 09:18

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)
TÉRREO									
T28_CONS. FISIATRIA/ORTO	1	8,9	3,0	149,3	0,00	0,00	17,0	0,0	17,0
Totals (incl. Space Multipliers)				**149,3**					**17,0**

Air System Sizing Summary for 29_SALA DE TI

Air System Information

Air System Name	**29_SALA DE TI**	Number of zones	**1**
Equipment Class	**SPLT AHU**	Floor Area	**4,9** m²
Air System Type	**SZCAV**	Location	**Salvador, Brazil**

Sizing Calculation Information

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

Central Cooling Coil Sizing Data

Total coil load	**2,3**	kW	Load occurs at	**Dec 1700**	
Sensible coil load	**2,3**	kW	OA DB / WB	**30,8 / 26,7**	°C
Coil L/s at Dec 1700	**163**	L/s	Entering DB / WB	**23,1 / 15,5**	°C
Max block L/s	**163**	L/s	Leaving DB / WB	**11,5 / 10,8**	°C
Sum of peak zone L/s	**163**	L/s	Coil ADP	**10,2**	°C
Sensible heat ratio	**0,972**		Bypass Factor	**0,100**	
L/(s kW)	**69,6**		Resulting RH	**45**	%
m²/kW	**2,1**		Design supply temp.	**12,8**	°C
W/m²	**477,5**		Zone T-stat Check	**0 of 1**	OK
Water flow @ 5,6 K rise	**N/A**		Max zone temperature deviation	**0,3**	K

Central Heating Coil Sizing Data

Max coil load	**2,2**	kW	Load occurs at	**Des Htg**	
Coil L/s at Des Htg	**163**	L/s	W/m²	**441,8**	
Max coil L/s	**163**	L/s	Ent. DB / Lvg DB	**8,5 / 19,5**	°C
Water flow @ 11,1 K drop	**N/A**				

Supply Fan Sizing Data

Actual max L/s	**163**	L/s	Fan motor BHP	**0,00**	BHP
Standard L/s	**163**	L/s	Fan motor kW	**0,00**	kW
Actual max L/(s·m²)	**33,24**	L/(s·m²)	Fan static	**0**	Pa

Outdoor Ventilation Air Data

Design airflow L/s	**0**	L/s	L/s/person	**0,00**	L/s/person
L/(s·m²)	**0,00**	L/(s·m²)			

Zone Sizing Summary for 29_SALA DE TI

Project Name: CER 2 12/22/2025
Prepared by: J FRAGOSO 09:18

Air System Information

Air System Name ..... **29_SALA DE TI**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **4,9** 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·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)
TÉRREO	163	163	33,24	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)
TÉRREO	1,8	Jan 1400	0,0	4,9

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)
TÉRREO							
T29_SALA DE TI	1	1,8	Jan 1400	163	0,0	4,9	33,24

Ventilation Sizing Summary for 29_SALA DE TI

Project Name: CER 2 12/22/2025
Prepared by: J FRAGOSO 09:18

1. Summary

Ventilation Sizing Method ..... **Sum of Space OA Airflows**
Design Ventilation Airflow Rate ..... **0** 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)
TÉRREO									
T29_SALA DE TI	1	4,9	1,0	162,9	0,00	0,00	0,0	0,0	0,0
Totals (incl. Space Multipliers)				**162,9**					**0,0**

Air System Sizing Summary for 30_SL INTREGAÇÃO

Project Name: CER 2 12/22/2025
Prepared by: J FRAGOSO 09:18

Air System Information

Air System Name	**30_SL INTREGAÇÃO**	Number of zones	**1**
Equipment Class	**SPLT AHU**	Floor Area	**29,8** m²
Air System Type	**SZCAV**	Location	**Salvador, Brazil**

Sizing Calculation Information

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

Central Cooling Coil Sizing Data

Total coil load	**6,0**	kW	Load occurs at	**Jan 1500**	
Sensible coil load	**4,2**	kW	OA DB / WB	**32,0 / 26,8**	°C
Coil L/s at Jan 1500	**253**	L/s	Entering DB / WB	**24,2 / 17,6**	°C
Max block L/s	**253**	L/s	Leaving DB / WB	**10,5 / 10,0**	°C
Sum of peak zone L/s	**253**	L/s	Coil ADP	**9,0**	°C
Sensible heat ratio	**0,696**		Bypass Factor	**0,100**	
L/(s kW)	**42,1**		Resulting RH	**45**	%
m²/kW	**5,0**		Design supply temp.	**12,8**	°C
W/m²	**201,4**		Zone T-stat Check	**1 of 1**	OK
Water flow @ 5,6 K rise	**N/A**		Max zone temperature deviation	**0,0**	K

Central Heating Coil Sizing Data

Max coil load	**3,4**	kW	Load occurs at	**Des Htg**	
Coil L/s at Des Htg	**253**	L/s	W/m²	**113,3**	
Max coil L/s	**253**	L/s	Ent. DB / Lvg DB	**8,8 / 19,9**	°C
Water flow @ 11,1 K drop	**N/A**				

Supply Fan Sizing Data

Actual max L/s	**253**	L/s	Fan motor BHP	**0,00**	BHP
Standard L/s	**253**	L/s	Fan motor kW	**0,00**	kW
Actual max L/(s·m²)	**8,48**	L/(s·m²)	Fan static	**0**	Pa

Outdoor Ventilation Air Data

Design airflow L/s	**44**	L/s	L/s/person	**14,67**	L/s/person
L/(s·m²)	**1,48**	L/(s·m²)			

Zone Sizing Summary for 30_SL INTREGAÇÃO

Project Name: CER 2 12/22/2025
Prepared by: J FRAGOSO 09:18

Air System Information

Air System Name ..... **30_SL INTREGAÇÃO**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **29,8** 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·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)
TÉRREO	253	253	8,48	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)
TÉRREO	2,8	Apr 1400	0,2	29,8

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)
TÉRREO							
T30_SL INTREGAÇÃO	1	2,8	Apr 1400	253	0,2	29,8	8,48

Ventilation Sizing Summary for 30_SL INTREGAÇÃO

Project Name: CER 2 12/22/2025
Prepared by: J FRAGOSO 09:18

1. Summary

Ventilation Sizing Method ..... **Sum of Space OA Airflows**
Design Ventilation Airflow Rate ..... **44** 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)
TÉRREO									
T30_SL INTREGAÇÃO	1	29,8	3,0	252,7	0,00	0,00	44,0	0,0	44,0
Totals (incl. Space Multipliers)				**252,7**					**44,0**

Air System Sizing Summary for 31_SL ESTIMULAÇÃO

Project Name: CER 2 — 12/22/2025
Prepared by: J FRAGOSO — 09:18

Air System Information

Air System Name	**31_SL ESTIMULAÇÃO**	Number of zones	**1**	
Equipment Class	**SPLT AHU**	Floor Area	**23,5**	m²
Air System Type	**SZCAV**	Location	**Salvador, Brazil**	

Sizing Calculation Information

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

Central Cooling Coil Sizing Data

Total coil load	**7,1**	kW	Load occurs at	**Jan 1700**	
Sensible coil load	**4,8**	kW	OA DB / WB	**31,4 / 26,7**	°C
Coil L/s at Jan 1700	**297**	L/s	Entering DB / WB	**23,6 / 17,4**	°C
Max block L/s	**297**	L/s	Leaving DB / WB	**10,2 / 9,7**	°C
Sum of peak zone L/s	**297**	L/s	Coil ADP	**8,7**	°C
Sensible heat ratio	**0,676**		Bypass Factor	**0,100**	
L/(s kW)	**41,8**		Resulting RH	**50**	%
m²/kW	**3,3**		Design supply temp.	**12,8**	°C
W/m²	**302,4**		Zone T-stat Check	**1 of 1**	OK
Water flow @ 5,6 K rise	**N/A**		Max zone temperature deviation	**0,0**	K

Central Heating Coil Sizing Data

Max coil load	**2,5**	kW	Load occurs at	**Jul 0600**	
Coil L/s at Jul 0600	**297**	L/s	W/m²	**105,6**	
Max coil L/s	**297**	L/s	Ent. DB / Lvg DB	**10,4 / 17,3**	°C
Water flow @ 11,1 K drop	**N/A**				

Supply Fan Sizing Data

Actual max L/s	**297**	L/s	Fan motor BHP	**0,00**	BHP
Standard L/s	**297**	L/s	Fan motor kW	**0,00**	kW
Actual max L/(s·m²)	**12,66**	L/(s·m²)	Fan static	**0**	Pa

Outdoor Ventilation Air Data

Design airflow L/s	**36**	L/s	L/s/person	**2,25**	L/s/person
L/(s·m²)	**1,53**	L/(s·m²)			

Zone Sizing Summary for 31_SL ESTIMULAÇÃO

Project Name: CER 2 12/22/2025
Prepared by: J FRAGOSO 09:18

Air System Information

Air System Name ..... **31_SL ESTIMULAÇÃO**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **23,5** 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·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)
TÉRREO	297	297	12,66	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)
TÉRREO	3,3	May 1400	0,0	23,5

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)
TÉRREO							
T31_SL ESTIMULAÇÃO	1	3,3	May 1400	297	0,0	23,5	12,66

Ventilation Sizing Summary for 31_SL ESTIMULAÇÃO

Project Name: CER 2 12/22/2025
Prepared by: J FRAGOSO 09:18

1. Summary

Ventilation Sizing Method ..... **Sum of Space OA Airflows**
Design Ventilation Airflow Rate ..... **36** 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)
TÉRREO									
T31_SL ESTIMULAÇÃO	1	23,5	16,0	297,4	0,00	0,00	36,0	0,0	36,0
Totals (incl. Space Multipliers)				**297,4**					**36,0**

Air System Sizing Summary for 32_SL DE PROCED. INTERN

Air System Information

Air System Name	**32_SL DE PROCED. INTERN**	Number of zones	**1**
Equipment Class	**SPLT AHU**	Floor Area	**12,8** m²
Air System Type	**SZCAV**	Location	**Salvador, Brazil**

Sizing Calculation Information

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

Central Cooling Coil Sizing Data

Total coil load	**3,6**	kW	Load occurs at	**Dec 1500**	
Sensible coil load	**2,8**	kW	OA DB / WB	**31,4 / 26,8**	°C
Coil L/s at Dec 1500	**178**	L/s	Entering DB / WB	**23,5 / 16,6**	°C
Max block L/s	**178**	L/s	Leaving DB / WB	**10,6 / 10,0**	°C
Sum of peak zone L/s	**178**	L/s	Coil ADP	**9,2**	°C
Sensible heat ratio	**0,765**		Bypass Factor	**0,100**	
L/(s kW)	**49,2**		Resulting RH	**45**	%
m²/kW	**3,5**		Design supply temp.	**12,8**	°C
W/m²	**282,4**		Zone T-stat Check	**1 of 1**	OK
Water flow @ 5,6 K rise	**N/A**		Max zone temperature deviation	**0,0**	K

Central Heating Coil Sizing Data

Max coil load	**2,4**	kW	Load occurs at	**Des Htg**	
Coil L/s at Des Htg	**178**	L/s	W/m²	**185,4**	
Max coil L/s	**178**	L/s	Ent. DB / Lvg DB	**8,8 / 19,8**	°C
Water flow @ 11,1 K drop	**N/A**				

Supply Fan Sizing Data

Actual max L/s	**178**	L/s	Fan motor BHP	**0,00**	BHP
Standard L/s	**178**	L/s	Fan motor kW	**0,00**	kW
Actual max L/(s·m²)	**13,90**	L/(s·m²)	Fan static	**0**	Pa

Outdoor Ventilation Air Data

Design airflow L/s	**19**	L/s	L/s/person	**9,50**	L/s/person
L/(s·m²)	**1,48**	L/(s·m²)			

Zone Sizing Summary for 32_SL DE PROCED. INTERN

Project Name: CER 2 12/22/2025
Prepared by: J FRAGOSO 09:18

Air System Information

Air System Name ..... **32_SL DE PROCED. INTERN**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **12,8** 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·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)
TÉRREO	178	178	13,90	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)
TÉRREO	2,0	May 1400	0,1	12,8

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)
TÉRREO							
T32_SL DE PROCED. INTERN	1	2,0	May 1400	178	0,1	12,8	13,90

Ventilation Sizing Summary for 32_SL DE PROCED. INTERN

Project Name: CER 2 12/22/2025
Prepared by: J FRAGOSO 09:18

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)
TÉRREO									
T32_SL DE PROCED. INTERN	1	12,8	2,0	177,9	0,00	0,00	19,0	0,0	19,0
Totals (incl. Space Multipliers)				**177,9**					**19,0**

Air System Sizing Summary for 33_CONSULTÓRIO NEUROL.

Project Name: CER 2 12/22/2025
Prepared by: J FRAGOSO 09:18

Air System Information

Air System Name	**33_CONSULTÓRIO NEUROL.**	Number of zones	**1**
Equipment Class	**SPLT AHU**	Floor Area	**11,1** m²
Air System Type	**SZCAV**	Location	**Salvador, Brazil**

Sizing Calculation Information

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

Central Cooling Coil Sizing Data

Total coil load	**2,9**	kW	Load occurs at	**Feb 1600**	
Sensible coil load	**2,1**	kW	OA DB / WB	**31,8 / 26,8**	°C
Coil L/s at Feb 1600	**131**	L/s	Entering DB / WB	**23,7 / 16,9**	°C
Max block L/s	**131**	L/s	Leaving DB / WB	**10,4 / 9,8**	°C
Sum of peak zone L/s	**131**	L/s	Coil ADP	**8,9**	°C
Sensible heat ratio	**0,735**		Bypass Factor	**0,100**	
L/(s kW)	**45,6**		Resulting RH	**45**	%
m²/kW	**3,9**		Design supply temp.	**12,8**	°C
W/m²	**259,0**		Zone T-stat Check	**1 of 1**	OK
Water flow @ 5,6 K rise	**N/A**		Max zone temperature deviation	**0,0**	K

Central Heating Coil Sizing Data

Max coil load	**1,7**	kW	Load occurs at	**Des Htg**	
Coil L/s at Des Htg	**131**	L/s	W/m²	**157,6**	
Max coil L/s	**131**	L/s	Ent. DB / Lvg DB	**8,8 / 19,8**	°C
Water flow @ 11,1 K drop	**N/A**				

Supply Fan Sizing Data

Actual max L/s	**131**	L/s	Fan motor BHP	**0,00**	BHP
Standard L/s	**131**	L/s	Fan motor kW	**0,00**	kW
Actual max L/(s·m²)	**11,81**	L/(s·m²)	Fan static	**0**	Pa

Outdoor Ventilation Air Data

Design airflow L/s	**17**	L/s	L/s/person	**8,50**	L/s/person
L/(s·m²)	**1,53**	L/(s·m²)			

Zone Sizing Summary for 33_CONSULTÓRIO NEUROL.

Project Name: CER 2 12/22/2025
Prepared by: J FRAGOSO 09:18

Air System Information

Air System Name ..... **33_CONSULTÓRIO NEUROL.**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **11,1** 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·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)
TÉRREO	131	131	11,81	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)
TÉRREO	1,5	Apr 1400	0,1	11,1

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)
TÉRREO							
T33_CONSULTÓRIO NEUROL.	1	1,5	Apr 1400	131	0,1	11,1	11,81

Ventilation Sizing Summary for 33_CONSULTÓRIO NEUROL.

Project Name: CER 2 12/22/2025
Prepared by: J FRAGOSO 09:18

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)
TÉRREO									
T33_CONSULTÓRIO NEUROL.	1	11,1	2,0	131,1	0,00	0,00	17,0	0,0	17,0
Totals (incl. Space Multipliers)				**131,1**					**17,0**

Air System Sizing Summary for 34_CONSULT MULTIPROF 01

Project Name: CER 2 12/22/2025
Prepared by: J FRAGOSO 09:18

Air System Information

Air System Name	**34_CONSULT MULTIPROF 01**	Number of zones	**1**
Equipment Class	**SPLT AHU**	Floor Area	**11,1** m²
Air System Type	**SZCAV**	Location	**Salvador, Brazil**

Sizing Calculation Information

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

Central Cooling Coil Sizing Data

Total coil load	**2,7**	kW	Load occurs at	**Jan 1500**	
Sensible coil load	**1,9**	kW	OA DB / WB	**32,0 / 26,8**	°C
Coil L/s at Jan 1500	**117**	L/s	Entering DB / WB	**24,0 / 17,3**	°C
Max block L/s	**117**	L/s	Leaving DB / WB	**10,4 / 9,8**	°C
Sum of peak zone L/s	**117**	L/s	Coil ADP	**8,9**	°C
Sensible heat ratio	**0,717**		Bypass Factor	**0,100**	
L/(s kW)	**43,6**		Resulting RH	**45**	%
m²/kW	**4,1**		Design supply temp.	**12,8**	°C
W/m²	**241,0**		Zone T-stat Check	**1 of 1**	OK
Water flow @ 5,6 K rise	**N/A**		Max zone temperature deviation	**0,0**	K

Central Heating Coil Sizing Data

Max coil load	**1,6**	kW	Load occurs at	**Des Htg**	
Coil L/s at Des Htg	**117**	L/s	W/m²	**140,1**	
Max coil L/s	**117**	L/s	Ent. DB / Lvg DB	**8,7 / 19,8**	°C
Water flow @ 11,1 K drop	**N/A**				

Supply Fan Sizing Data

Actual max L/s	**117**	L/s	Fan motor BHP	**0,00**	BHP
Standard L/s	**116**	L/s	Fan motor kW	**0,00**	kW
Actual max L/(s·m²)	**10,50**	L/(s·m²)	Fan static	**0**	Pa

Outdoor Ventilation Air Data

Design airflow L/s	**17**	L/s	L/s/person	**8,50**	L/s/person
L/(s·m²)	**1,53**	L/(s·m²)			

Zone Sizing Summary for 34_CONSULT MULTIPROF 01

Project Name: CER 2 12/22/2025
Prepared by: J FRAGOSO 09:18

Air System Information

Air System Name ..... **34_CONSULT MULTIPROF 01**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **11,1** 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·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)
TÉRREO	117	117	10,50	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)
TÉRREO	1,3	Apr 1400	0,1	11,1

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)
TÉRREO							
T34_CONSULT MULTIPROF 01	1	1,3	Apr 1400	117	0,1	11,1	10,50

Ventilation Sizing Summary for 34_CONSULT MULTIPROF 01

Project Name: CER 2 12/22/2025
Prepared by: J FRAGOSO 09:18

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)
TÉRREO									
T34_CONSULT MULTIPROF 01	1	11,1	2,0	116,6	0,00	0,00	17,0	0,0	17,0
Totals (incl. Space Multipliers)				**116,6**					**17,0**

Air System Sizing Summary for 35_CONSULT MULTIPROF 02

Project Name: CER 2 12/22/2025
Prepared by: J FRAGOSO 09:18

Air System Information

Air System Name	**35_CONSULT MULTIPROF 02**	Number of zones	**1**
Equipment Class	**SPLT AHU**	Floor Area	**11,1** m²
Air System Type	**SZCAV**	Location	**Salvador, Brazil**

Sizing Calculation Information

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

Central Cooling Coil Sizing Data

Total coil load	**3,3**	kW	Load occurs at	**Feb 1500**	
Sensible coil load	**2,5**	kW	OA DB / WB	**32,0 / 26,8**	°C
Coil L/s at Feb 1500	**163**	L/s	Entering DB / WB	**23,7 / 16,7**	°C
Max block L/s	**163**	L/s	Leaving DB / WB	**10,8 / 10,2**	°C
Sum of peak zone L/s	**163**	L/s	Coil ADP	**9,3**	°C
Sensible heat ratio	**0,771**		Bypass Factor	**0,100**	
L/(s kW)	**49,4**		Resulting RH	**45**	%
m²/kW	**3,4**		Design supply temp.	**12,8**	°C
W/m²	**297,7**		Zone T-stat Check	**1 of 1**	OK
Water flow @ 5,6 K rise	**N/A**		Max zone temperature deviation	**0,0**	K

Central Heating Coil Sizing Data

Max coil load	**2,2**	kW	Load occurs at	**Des Htg**	
Coil L/s at Des Htg	**163**	L/s	W/m²	**196,1**	
Max coil L/s	**163**	L/s	Ent. DB / Lvg DB	**8,8 / 19,8**	°C
Water flow @ 11,1 K drop	**N/A**				

Supply Fan Sizing Data

Actual max L/s	**163**	L/s	Fan motor BHP	**0,00**	BHP
Standard L/s	**163**	L/s	Fan motor kW	**0,00**	kW
Actual max L/(s·m²)	**14,71**	L/(s·m²)	Fan static	**0**	Pa

Outdoor Ventilation Air Data

Design airflow L/s	**17**	L/s	L/s/person	**8,50**	L/s/person
L/(s·m²)	**1,53**	L/(s·m²)			

Zone Sizing Summary for 35_CONSULT MULTIPROF 02

Project Name: CER 2 12/22/2025
Prepared by: J FRAGOSO 09:18

Air System Information

Air System Name ..... **35_CONSULT MULTIPROF 02**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **11,1** 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·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)
TÉRREO	163	163	14,71	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)
TÉRREO	1,8	Dec 1500	0,1	11,1

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)
TÉRREO							
T35_CONSULT MULTIPROF 02	1	1,8	Dec 1500	163	0,1	11,1	14,71

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)	Ou (% c
TÉRREO								
T35_CONSULT MULTIPROF 02	1	11,1	2,0	163,2	0,00	0,00	17,0	
Totals (incl. Space Multipliers)				**163,2**				