

Zone Sizing Summary for FC-01

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:43p. m

Air System Information

Air System Name **FC-01**
Equipment Class **TERM**
Air System Type **4P-FC**

Number of zones **1**
Floor Area **24,1** m²
Location **Concepcion, Chile**

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**

Terminal Unit Sizing Data - Cooling

Zone Name	Total Coil Load (kW)	Sens Coil Load (kW)	Coil Entering DB / WB (°C)	Coil Leaving DB / WB (°C)	Water Flow @ 5,6 K (L/s)	Time of Peak Coil Load	Zone L/(s·m²)
Zone 1	3,1	3,1	23,9 / 17,6	14,9 / 14,3	0,13	Dec 1800	11,87

Terminal Unit Sizing Data - Heating, Fan, Ventilation

Zone Name	Heating Coil Load (kW)	Heating Coil Ent/Lvg DB (°C)	Htg Coil Water Flow @11,1 K (L/s)	Fan Design Airflow (L/s)	Fan Motor (BHP)	Fan Motor (kW)	OA Vent Design Airflow (L/s)
Zone 1	2,0	16,8 / 22,5	0,04	286	0,000	0,000	60

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (kW)	Time of Peak Sensible Cooling Load	Zone Heating Load (kW)	Zone Floor Area (m²)
Zone 1	3,3	Dec 1800	0,6	24,1

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)
Zone 1							
1P 01 SALA IRA	1	3,3	Dec 1800	286	0,6	24,1	11,87

Ventilation Sizing Summary for FC-01

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:43p. m

1. Summary

Ventilation Sizing Method Sum of Space OA Airflows

2. Space Ventilation Analysis

2.1 Zone: Zone 1

Zone Name / Space Name	Mult.	Floor Area (m²)	Maximum Occupants	Maximum Supply Air (L/s)	Required Outdoor Air (L/s/person)	Required Outdoor Air (L/(s·m²))	Required Outdoor Air (L/s)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (L/s)
Zone 1									
1P 01 SALA IRA	1	24,1	2,4	286,1	10,00	1,50	0,0	0,0	60,3
Totals (incl. Space Multipliers)				286,1					60,3

Zone Sizing Summary for FC-02

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:43p. m

Air System Information

Air System Name **FC-02**
Equipment Class **TERM**
Air System Type **4P-FC**

Number of zones **1**
Floor Area **24,6** m²
Location **Concepcion, Chile**

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**

Terminal Unit Sizing Data - Cooling

Zone Name	Total Coil Load (kW)	Sens Coil Load (kW)	Coil Entering DB / WB (°C)	Coil Leaving DB / WB (°C)	Water Flow @ 5,6 K (L/s)	Time of Peak Coil Load	Zone L/(s·m²)
Zone 1	3,1	3,1	23,9 / 17,6	14,9 / 14,3	0,14	Dec 1800	11,70

Terminal Unit Sizing Data - Heating, Fan, Ventilation

Zone Name	Heating Coil Load (kW)	Heating Coil Ent/Lvg DB (°C)	Htg Coil Water Flow @11,1 K (L/s)	Fan Design Airflow (L/s)	Fan Motor (BHP)	Fan Motor (kW)	OA Vent Design Airflow (L/s)
Zone 1	1,8	17,0 / 22,2	0,04	288	0,000	0,000	62

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (kW)	Time of Peak Sensible Cooling Load	Zone Heating Load (kW)	Zone Floor Area (m²)
Zone 1	3,3	Dec 1800	0,4	24,6

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)
Zone 1							
1P 02 SALA ERA	1	3,3	Dec 1800	288	0,4	24,6	11,70

Ventilation Sizing Summary for FC-02

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:43p. m

1. Summary

Ventilation Sizing Method Sum of Space OA Airflows

2. Space Ventilation Analysis

2.1 Zone: Zone 1

Zone Name / Space Name	Mult.	Floor Area (m²)	Maximum Occupants	Maximum Supply Air (L/s)	Required Outdoor Air (L/s/person)	Required Outdoor Air (L/(s·m²))	Required Outdoor Air (L/s)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (L/s)
Zone 1									
1P 02 SALA ERA	1	24,6	2,5	287,7	10,00	1,50	0,0	0,0	61,5
Totals (incl. Space Multipliers)				287,7					61,5

Zone Sizing Summary for FC-03

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:43p. m

Air System Information

Air System Name **FC-03**
Equipment Class **TERM**
Air System Type **4P-FC**

Number of zones **1**
Floor Area **23,8** m²
Location **Concepcion, Chile**

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**

Terminal Unit Sizing Data - Cooling

Zone Name	Total Coil Load (kW)	Sens Coil Load (kW)	Coil Entering DB / WB (°C)	Coil Leaving DB / WB (°C)	Water Flow @ 5,6 K (L/s)	Time of Peak Coil Load	Zone L/(s·m²)
Zone 1	3,1	3,1	23,8 / 17,6	15,1 / 14,5	0,13	Jan 1800	12,34

Terminal Unit Sizing Data - Heating, Fan, Ventilation

Zone Name	Heating Coil Load (kW)	Heating Coil Ent/Lvg DB (°C)	Htg Coil Water Flow @11,1 K (L/s)	Fan Design Airflow (L/s)	Fan Motor (BHP)	Fan Motor (kW)	OA Vent Design Airflow (L/s)
Zone 1	2,1	16,1 / 22,2	0,05	294	0,000	0,000	75

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (kW)	Time of Peak Sensible Cooling Load	Zone Heating Load (kW)	Zone Floor Area (m²)
Zone 1	3,3	Dec 1800	0,4	23,8

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (kW)	Time of Peak Sensible Load	Air Flow (L/s)	Heating Load (kW)	Floor Area (m²)	Space L/(s·m²)
Zone 1							
1P 03 SALA TOMA DE MUEST	1	3,3	Dec 1800	294	0,4	23,8	12,34

Ventilation Sizing Summary for FC-03

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:43p. m

1. Summary

Ventilation Sizing Method Sum of Space OA Airflows

2. Space Ventilation Analysis

2.1 Zone: Zone 1

Zone Name / Space Name	Mult.	Floor Area (m²)	Maximum Occupants	Maximum Supply Air (L/s)	Required Outdoor Air (L/s/person)	Required Outdoor Air (L/(s·m²))	Required Outdoor Air (L/s)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (L/s)
Zone 1									
1P 03 SALA TOMA DE MUEST	1	23,8	4,0	293,6	10,00	1,50	0,0	0,0	75,4
Totals (incl. Space Multipliers)				293,6					75,4

Zone Sizing Summary for FC-04

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:43p. m

Air System Information

Air System Name **FC-04**
Equipment Class **TERM**
Air System Type **4P-FC**

Number of zones **1**
Floor Area **12,7** m²
Location **Concepcion, Chile**

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**

Terminal Unit Sizing Data - Cooling

Zone Name	Total Coil Load (kW)	Sens Coil Load (kW)	Coil Entering DB / WB (°C)	Coil Leaving DB / WB (°C)	Water Flow @ 5,6 K (L/s)	Time of Peak Coil Load	Zone L/(s·m²)
Zone 1	2,0	1,8	24,3 / 18,1	15,0 / 14,4	0,09	Dec 1800	12,59

Terminal Unit Sizing Data - Heating, Fan, Ventilation

Zone Name	Heating Coil Load (kW)	Heating Coil Ent/Lvg DB (°C)	Htg Coil Water Flow @11,1 K (L/s)	Fan Design Airflow (L/s)	Fan Motor (BHP)	Fan Motor (kW)	OA Vent Design Airflow (L/s)
Zone 1	0,6	19,0 / 22,1	0,01	160	0,000	0,000	18

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (kW)	Time of Peak Sensible Cooling Load	Zone Heating Load (kW)	Zone Floor Area (m²)
Zone 1	1,8	Dec 1800	0,2	12,7

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)
Zone 1							
1P 04 ESTAR SAPU	1	1,8	Dec 1800	160	0,2	12,7	12,59

Ventilation Sizing Summary for FC-04

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:43p. m

1. Summary

Ventilation Sizing Method Sum of Space OA Airflows

2. Space Ventilation Analysis

2.1 Zone: Zone 1

Zone Name / Space Name	Mult.	Floor Area (m²)	Maximum Occupants	Maximum Supply Air (L/s)	Required Outdoor Air (L/s/person)	Required Outdoor Air (L/(s·m²))	Required Outdoor Air (L/s)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (L/s)
Zone 1									
1P 04 ESTAR SAPU	1	12,7	4,2	159,9	3,00	0,40	0,0	0,0	17,8
Totals (incl. Space Multipliers)				159,9					17,8

Zone Sizing Summary for FC-07

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:43p. m

Air System Information

Air System Name **FC-07**
Equipment Class **TERM**
Air System Type **4P-FC**

Number of zones **1**
Floor Area **9,9** m²
Location **Concepcion, Chile**

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**

Terminal Unit Sizing Data - Cooling

Zone Name	Total Coil Load (kW)	Sens Coil Load (kW)	Coil Entering DB / WB (°C)	Coil Leaving DB / WB (°C)	Water Flow @ 5,6 K (L/s)	Time of Peak Coil Load	Zone L/(s·m²)
Zone 1	0,4	0,4	24,6 / 17,9	14,4 / 13,8	0,02	Feb 1500	3,05

Terminal Unit Sizing Data - Heating, Fan, Ventilation

Zone Name	Heating Coil Load (kW)	Heating Coil Ent/Lvg DB (°C)	Htg Coil Water Flow @11,1 K (L/s)	Fan Design Airflow (L/s)	Fan Motor (BHP)	Fan Motor (kW)	OA Vent Design Airflow (L/s)
Zone 1	0,3	16,5 / 25,1	0,01	30	0,000	0,000	7

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (kW)	Time of Peak Sensible Cooling Load	Zone Heating Load (kW)	Zone Floor Area (m²)
Zone 1	0,3	Mar 1900	0,2	9,9

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (kW)	Time of Peak Sensible Load	Air Flow (L/s)	Heating Load (kW)	Floor Area (m²)	Space L/(s·m²)
Zone 1							
1P 07 JEFE SOME	1	0,3	Mar 1900	30	0,2	9,9	3,05

Ventilation Sizing Summary for FC-07

Project Name: CESFAM VILLA ALEGRE
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10-08-2020
08:43p. m

1. Summary

Ventilation Sizing Method Sum of Space OA Airflows

2. Space Ventilation Analysis

2.1 Zone: Zone 1

Zone Name / Space Name	Mult.	Floor Area (m²)	Maximum Occupants	Maximum Supply Air (L/s)	Required Outdoor Air (L/s/person)	Required Outdoor Air (L/(s·m²))	Required Outdoor Air (L/s)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (L/s)
Zone 1									
1P 07 JEFE SOME	1	9,9	1,0	30,2	3,00	0,40	0,0	0,0	6,9
Totals (incl. Space Multipliers)				30,2					6,9

Zone Sizing Summary for FC-08

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:43p. m

Air System Information

Air System Name **FC-08**
Equipment Class **TERM**
Air System Type **4P-FC**

Number of zones **1**
Floor Area **15,0** m²
Location **Concepcion, Chile**

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**

Terminal Unit Sizing Data - Cooling

Zone Name	Total Coil Load (kW)	Sens Coil Load (kW)	Coil Entering DB / WB (°C)	Coil Leaving DB / WB (°C)	Water Flow @ 5,6 K (L/s)	Time of Peak Coil Load	Zone L/(s·m²)
Zone 1	1,0	1,0	24,4 / 17,2	19,8 / 15,6	0,04	Jan 1500	11,50

Terminal Unit Sizing Data - Heating, Fan, Ventilation

Zone Name	Heating Coil Load (kW)	Heating Coil Ent/Lvg DB (°C)	Htg Coil Water Flow @11,1 K (L/s)	Fan Design Airflow (L/s)	Fan Motor (BHP)	Fan Motor (kW)	OA Vent Design Airflow (L/s)
Zone 1	4,0	1,7 / 21,1	0,09	173	0,000	0,000	173

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (kW)	Time of Peak Sensible Cooling Load	Zone Heating Load (kW)	Zone Floor Area (m²)
Zone 1	0,5	Jan 1900	0,0	15,0

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (kW)	Time of Peak Sensible Load	Air Flow (L/s)	Heating Load (kW)	Floor Area (m²)	Space L/(s·m²)
Zone 1							
1P 08 BOX VACUNATO	1	0,5	Jan 1900	173	0,0	15,0	11,50

Ventilation Sizing Summary for FC-08

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:43p. m

1. Summary

Ventilation Sizing Method Sum of Space OA Airflows

2. Space Ventilation Analysis

2.1 Zone: Zone 1

Zone Name / Space Name	Mult.	Floor Area (m²)	Maximum Occupants	Maximum Supply Air (L/s)	Required Outdoor Air (L/s/person)	Required Outdoor Air (L/(s·m²))	Required Outdoor Air (L/s)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (L/s)
Zone 1									
1P 08 BOX VACUNATO	1	15,0	1,5	172,5	0,00	11,50	0,0	0,0	172,5
Totals (incl. Space Multipliers)				172,5					172,5

Zone Sizing Summary for FC-09

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:43p. m

Air System Information

Air System Name **FC-09**
Equipment Class **TERM**
Air System Type **4P-FC**

Number of zones **1**
Floor Area **15,6** m²
Location **Concepcion, Chile**

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**

Terminal Unit Sizing Data - Cooling

Zone Name	Total Coil Load (kW)	Sens Coil Load (kW)	Coil Entering DB / WB (°C)	Coil Leaving DB / WB (°C)	Water Flow @ 5,6 K (L/s)	Time of Peak Coil Load	Zone L/(s·m²)
Zone 1	0,6	0,5	25,0 / 18,0	14,4 / 13,8	0,03	Jan 1500	2,71

Terminal Unit Sizing Data - Heating, Fan, Ventilation

Zone Name	Heating Coil Load (kW)	Heating Coil Ent/Lvg DB (°C)	Htg Coil Water Flow @11,1 K (L/s)	Fan Design Airflow (L/s)	Fan Motor (BHP)	Fan Motor (kW)	OA Vent Design Airflow (L/s)
Zone 1	0,3	16,1 / 21,1	0,01	42	0,000	0,000	11

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (kW)	Time of Peak Sensible Cooling Load	Zone Heating Load (kW)	Zone Floor Area (m²)
Zone 1	0,5	Jan 1900	0,0	15,6

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)
Zone 1							
1P 09 SOME PROCEDIMIENTO	1	0,5	Jan 1900	42	0,0	15,6	2,71

Ventilation Sizing Summary for FC-09

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:43p. m

1. Summary

Ventilation Sizing Method Sum of Space OA Airflows

2. Space Ventilation Analysis

2.1 Zone: Zone 1

Zone Name / Space Name	Mult.	Floor Area (m²)	Maximum Occupants	Maximum Supply Air (L/s)	Required Outdoor Air (L/s/person)	Required Outdoor Air (L/(s·m²))	Required Outdoor Air (L/s)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (L/s)
Zone 1									
1P 09 SOME PROCEDIMIENTO	1	15,6	1,6	42,2	3,00	0,40	0,0	0,0	10,9
Totals (incl. Space Multipliers)				42,2					10,9

Zone Sizing Summary for FC-10

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:43p. m

Air System Information

Air System Name **FC-10**
Equipment Class **TERM**
Air System Type **4P-FC**

Number of zones **1**
Floor Area **19,6** m²
Location **Concepcion, Chile**

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**

Terminal Unit Sizing Data - Cooling

Zone Name	Total Coil Load (kW)	Sens Coil Load (kW)	Coil Entering DB / WB (°C)	Coil Leaving DB / WB (°C)	Water Flow @ 5,6 K (L/s)	Time of Peak Coil Load	Zone L/(s·m²)
Zone 1	2,2	2,2	24,4 / 17,9	15,9 / 14,9	0,09	Dec 1400	10,86

Terminal Unit Sizing Data - Heating, Fan, Ventilation

Zone Name	Heating Coil Load (kW)	Heating Coil Ent/Lvg DB (°C)	Htg Coil Water Flow @11,1 K (L/s)	Fan Design Airflow (L/s)	Fan Motor (BHP)	Fan Motor (kW)	OA Vent Design Airflow (L/s)
Zone 1	1,5	16,5 / 22,2	0,03	213	0,000	0,000	49

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (kW)	Time of Peak Sensible Cooling Load	Zone Heating Load (kW)	Zone Floor Area (m²)
Zone 1	2,4	Dec 0900	0,3	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)
Zone 1							
1P 10 BOX ATENCION URGEN	1	2,4	Dec 0900	213	0,3	19,6	10,86

Ventilation Sizing Summary for FC-10

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:43p. m

1. Summary

Ventilation Sizing Method Sum of Space OA Airflows

2. Space Ventilation Analysis

2.1 Zone: Zone 1

Zone Name / Space Name	Mult.	Floor Area (m²)	Maximum Occupants	Maximum Supply Air (L/s)	Required Outdoor Air (L/s/person)	Required Outdoor Air (L/(s·m²))	Required Outdoor Air (L/s)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (L/s)
Zone 1									
1P 10 BOX ATENCION URGEN	1	19,6	2,0	212,8	10,00	1,50	0,0	0,0	49,0
Totals (incl. Space Multipliers)				212,8					49,0

Zone Sizing Summary for FC-11

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:43p. m

Air System Information

Air System Name **FC-11**
Equipment Class **TERM**
Air System Type **4P-FC**

Number of zones **1**
Floor Area **24,4** m²
Location **Concepcion, Chile**

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**

Terminal Unit Sizing Data - Cooling

Zone Name	Total Coil Load (kW)	Sens Coil Load (kW)	Coil Entering DB / WB (°C)	Coil Leaving DB / WB (°C)	Water Flow @ 5,6 K (L/s)	Time of Peak Coil Load	Zone L/(s·m²)
Zone 1	2,5	2,5	24,4 / 17,9	15,9 / 14,9	0,11	Dec 1500	9,90

Terminal Unit Sizing Data - Heating, Fan, Ventilation

Zone Name	Heating Coil Load (kW)	Heating Coil Ent/Lvg DB (°C)	Htg Coil Water Flow @11,1 K (L/s)	Fan Design Airflow (L/s)	Fan Motor (BHP)	Fan Motor (kW)	OA Vent Design Airflow (L/s)
Zone 1	2,0	15,8 / 22,7	0,04	242	0,000	0,000	67

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (kW)	Time of Peak Sensible Cooling Load	Zone Heating Load (kW)	Zone Floor Area (m²)
Zone 1	2,7	Dec 0900	0,4	24,4

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (kW)	Time of Peak Sensible Load	Air Flow (L/s)	Heating Load (kW)	Floor Area (m²)	Space L/(s·m²)
Zone 1							
1P 11 BOX CURACION Y TRA	1	2,7	Dec 0900	242	0,4	24,4	9,90

Ventilation Sizing Summary for FC-11

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:43p. m

1. Summary

Ventilation Sizing Method Sum of Space OA Airflows

2. Space Ventilation Analysis

2.1 Zone: Zone 1

Zone Name / Space Name	Mult.	Floor Area (m²)	Maximum Occupants	Maximum Supply Air (L/s)	Required Outdoor Air (L/s/person)	Required Outdoor Air (L/(s·m²))	Required Outdoor Air (L/s)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (L/s)
Zone 1									
1P 11 BOX CURACION Y TRA	1	24,4	3,1	241,6	10,00	1,50	0,0	0,0	67,1
Totals (incl. Space Multipliers)				241,6					67,1

Zone Sizing Summary for FC-12

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:43p. m

Air System Information

Air System Name **FC-12**
Equipment Class **TERM**
Air System Type **4P-FC**

Number of zones **1**
Floor Area **19,6** m²
Location **Concepcion, Chile**

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**

Terminal Unit Sizing Data - Cooling

Zone Name	Total Coil Load (kW)	Sens Coil Load (kW)	Coil Entering DB / WB (°C)	Coil Leaving DB / WB (°C)	Water Flow @ 5,6 K (L/s)	Time of Peak Coil Load	Zone L/(s·m²)
Zone 1	2,0	2,0	24,4 / 17,9	15,9 / 14,8	0,09	Dec 1400	10,08

Terminal Unit Sizing Data - Heating, Fan, Ventilation

Zone Name	Heating Coil Load (kW)	Heating Coil Ent/Lvg DB (°C)	Htg Coil Water Flow @11,1 K (L/s)	Fan Design Airflow (L/s)	Fan Motor (BHP)	Fan Motor (kW)	OA Vent Design Airflow (L/s)
Zone 1	1,5	16,3 / 22,7	0,03	198	0,000	0,000	49

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (kW)	Time of Peak Sensible Cooling Load	Zone Heating Load (kW)	Zone Floor Area (m²)
Zone 1	2,2	Dec 0900	0,3	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)
Zone 1							
1P 12 SALA PROCEDIMIENTO	1	2,2	Dec 0900	198	0,3	19,6	10,08

Ventilation Sizing Summary for FC-12

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:43p. m

1. Summary

Ventilation Sizing Method Sum of Space OA Airflows

2. Space Ventilation Analysis

2.1 Zone: Zone 1

Zone Name / Space Name	Mult.	Floor Area (m²)	Maximum Occupants	Maximum Supply Air (L/s)	Required Outdoor Air (L/s/person)	Required Outdoor Air (L/(s·m²))	Required Outdoor Air (L/s)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (L/s)
Zone 1									
1P 12 SALA PROCEDIMIENTO	1	19,6	2,0	197,6	10,00	1,50	0,0	0,0	49,0
Totals (incl. Space Multipliers)				197,6					49,0

Zone Sizing Summary for FC-13

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:43p. m

Air System Information

Air System Name **FC-13**
Equipment Class **TERM**
Air System Type **4P-FC**

Number of zones **1**
Floor Area **12,6** m²
Location **Concepcion, Chile**

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**

Terminal Unit Sizing Data - Cooling

Zone Name	Total Coil Load (kW)	Sens Coil Load (kW)	Coil Entering DB / WB (°C)	Coil Leaving DB / WB (°C)	Water Flow @ 5,6 K (L/s)	Time of Peak Coil Load	Zone L/(s·m²)
Zone 1	0,5	0,5	24,5 / 17,3	14,4 / 13,6	0,02	Jan 1500	3,00

Terminal Unit Sizing Data - Heating, Fan, Ventilation

Zone Name	Heating Coil Load (kW)	Heating Coil Ent/Lvg DB (°C)	Htg Coil Water Flow @11,1 K (L/s)	Fan Design Airflow (L/s)	Fan Motor (BHP)	Fan Motor (kW)	OA Vent Design Airflow (L/s)
Zone 1	1,0	3,3 / 24,2	0,02	38	0,000	0,000	35

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (kW)	Time of Peak Sensible Cooling Load	Zone Heating Load (kW)	Zone Floor Area (m²)
Zone 1	0,4	Dec 1900	0,1	12,6

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)
Zone 1							
1P 13 SALA DE ACOGIDA	1	0,4	Dec 1900	38	0,1	12,6	3,00

Ventilation Sizing Summary for FC-13

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:43p. m

1. Summary

Ventilation Sizing Method Sum of Space OA Airflows

2. Space Ventilation Analysis

2.1 Zone: Zone 1

Zone Name / Space Name	Mult.	Floor Area (m²)	Maximum Occupants	Maximum Supply Air (L/s)	Required Outdoor Air (L/s/person)	Required Outdoor Air (L/(s·m²))	Required Outdoor Air (L/s)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (L/s)
Zone 1									
1P 13 SALA DE ACOGIDA	1	12,6	1,6	37,8	10,00	1,50	0,0	0,0	34,7
Totals (incl. Space Multipliers)				37,8					34,7

Zone Sizing Summary for FC-14

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:43p. m

Air System Information

Air System Name **FC-14**
Equipment Class **TERM**
Air System Type **4P-FC**

Number of zones **1**
Floor Area **139,0** m²
Location **Concepcion, Chile**

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**

Terminal Unit Sizing Data - Cooling

Zone Name	Total Coil Load (kW)	Sens Coil Load (kW)	Coil Entering DB / WB (°C)	Coil Leaving DB / WB (°C)	Water Flow @ 5,6 K (L/s)	Time of Peak Coil Load	Zone L/(s·m²)
Zone 1	18,0	18,0	24,5 / 17,9	15,4 / 14,7	0,78	Feb 1500	11,88

Terminal Unit Sizing Data - Heating, Fan, Ventilation

Zone Name	Heating Coil Load (kW)	Heating Coil Ent/Lvg DB (°C)	Htg Coil Water Flow @11,1 K (L/s)	Fan Design Airflow (L/s)	Fan Motor (BHP)	Fan Motor (kW)	OA Vent Design Airflow (L/s)
Zone 1	29,1	7,1 / 21,7	0,63	1652	0,000	0,000	1195

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (kW)	Time of Peak Sensible Cooling Load	Zone Heating Load (kW)	Zone Floor Area (m²)
Zone 1	18,8	Mar 1700	0,9	139,0

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (kW)	Time of Peak Sensible Load	Air Flow (L/s)	Heating Load (kW)	Floor Area (m²)	Space L/(s·m²)
Zone 1							
1P 14 SALA DE ESPERA	1	18,8	Mar 1700	1652	0,9	139,0	11,88

Ventilation Sizing Summary for FC-14

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:43p. m

1. Summary

Ventilation Sizing Method Sum of Space OA Airflows

2. Space Ventilation Analysis

2.1 Zone: Zone 1

Zone Name / Space Name	Mult.	Floor Area (m²)	Maximum Occupants	Maximum Supply Air (L/s)	Required Outdoor Air (L/s/person)	Required Outdoor Air (L/(s·m²))	Required Outdoor Air (L/s)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (L/s)
Zone 1									
1P 14 SALA DE ESPERA	1	139,0	173,8	1651,9	6,00	1,10	0,0	0,0	1195,4
Totals (incl. Space Multipliers)				1651,9					1195,4

Zone Sizing Summary for FC-15

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:43p. m

Air System Information

Air System Name **FC-15**
Equipment Class **TERM**
Air System Type **4P-FC**

Number of zones **1**
Floor Area **139,0** m²
Location **Concepcion, Chile**

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**

Terminal Unit Sizing Data - Cooling

Zone Name	Total Coil Load (kW)	Sens Coil Load (kW)	Coil Entering DB / WB (°C)	Coil Leaving DB / WB (°C)	Water Flow @ 5,6 K (L/s)	Time of Peak Coil Load	Zone L/(s·m²)
Zone 1	18,0	18,0	24,5 / 17,9	15,4 / 14,7	0,78	Feb 1500	11,88

Terminal Unit Sizing Data - Heating, Fan, Ventilation

Zone Name	Heating Coil Load (kW)	Heating Coil Ent/Lvg DB (°C)	Htg Coil Water Flow @11,1 K (L/s)	Fan Design Airflow (L/s)	Fan Motor (BHP)	Fan Motor (kW)	OA Vent Design Airflow (L/s)
Zone 1	29,1	7,1 / 21,7	0,63	1652	0,000	0,000	1195

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (kW)	Time of Peak Sensible Cooling Load	Zone Heating Load (kW)	Zone Floor Area (m²)
Zone 1	18,8	Mar 1700	0,9	139,0

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (kW)	Time of Peak Sensible Load	Air Flow (L/s)	Heating Load (kW)	Floor Area (m²)	Space L/(s·m²)
Zone 1							
1P 14 SALA DE ESPERA	1	18,8	Mar 1700	1652	0,9	139,0	11,88

Ventilation Sizing Summary for FC-15

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:43p. m

1. Summary

Ventilation Sizing Method Sum of Space OA Airflows

2. Space Ventilation Analysis

2.1 Zone: Zone 1

Zone Name / Space Name	Mult.	Floor Area (m²)	Maximum Occupants	Maximum Supply Air (L/s)	Required Outdoor Air (L/s/person)	Required Outdoor Air (L/(s·m²))	Required Outdoor Air (L/s)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (L/s)
Zone 1									
1P 14 SALA DE ESPERA	1	139,0	173,8	1651,9	6,00	1,10	0,0	0,0	1195,4
Totals (incl. Space Multipliers)				1651,9					1195,4

Zone Sizing Summary for FC-16

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:43p. m

Air System Information

Air System Name **FC-16**
Equipment Class **TERM**
Air System Type **4P-FC**

Number of zones **1**
Floor Area **17,7** m²
Location **Concepcion, Chile**

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**

Terminal Unit Sizing Data - Cooling

Zone Name	Total Coil Load (kW)	Sens Coil Load (kW)	Coil Entering DB / WB (°C)	Coil Leaving DB / WB (°C)	Water Flow @ 5,6 K (L/s)	Time of Peak Coil Load	Zone L/(s·m²)
Zone 1	3,9	3,9	24,4 / 17,7	14,8 / 14,1	0,17	Mar 1600	18,80

Terminal Unit Sizing Data - Heating, Fan, Ventilation

Zone Name	Heating Coil Load (kW)	Heating Coil Ent/Lvg DB (°C)	Htg Coil Water Flow @11,1 K (L/s)	Fan Design Airflow (L/s)	Fan Motor (BHP)	Fan Motor (kW)	OA Vent Design Airflow (L/s)
Zone 1	0,7	20,3 / 22,1	0,02	333	0,000	0,000	12

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (kW)	Time of Peak Sensible Cooling Load	Zone Heating Load (kW)	Zone Floor Area (m²)
Zone 1	3,8	Mar 1600	0,4	17,7

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)
Zone 1							
1P 16 DESPACHO FARMACIA	1	3,8	Mar 1600	333	0,4	17,7	18,80

Ventilation Sizing Summary for FC-16

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:43p. m

1. Summary

Ventilation Sizing Method Sum of Space OA Airflows

2. Space Ventilation Analysis

2.1 Zone: Zone 1

Zone Name / Space Name	Mult.	Floor Area (m²)	Maximum Occupants	Maximum Supply Air (L/s)	Required Outdoor Air (L/s/person)	Required Outdoor Air (L/(s·m²))	Required Outdoor Air (L/s)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (L/s)
Zone 1									
1P 16 DESPACHO FARMACIA	1	17,7	1,8	332,7	3,00	0,40	0,0	0,0	12,4
Totals (incl. Space Multipliers)				332,7					12,4

Zone Sizing Summary for FC-17

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:44p. m

Air System Information

Air System Name **FC-17**
Equipment Class **TERM**
Air System Type **4P-FC**

Number of zones **1**
Floor Area **11,8** m²
Location **Concepcion, Chile**

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**

Terminal Unit Sizing Data - Cooling

Zone Name	Total Coil Load (kW)	Sens Coil Load (kW)	Coil Entering DB / WB (°C)	Coil Leaving DB / WB (°C)	Water Flow @ 5,6 K (L/s)	Time of Peak Coil Load	Zone L/(s·m²)
Zone 1	4,7	4,6	24,4 / 17,7	14,9 / 14,2	0,20	Dec 1700	33,96

Terminal Unit Sizing Data - Heating, Fan, Ventilation

Zone Name	Heating Coil Load (kW)	Heating Coil Ent/Lvg DB (°C)	Htg Coil Water Flow @11,1 K (L/s)	Fan Design Airflow (L/s)	Fan Motor (BHP)	Fan Motor (kW)	OA Vent Design Airflow (L/s)
Zone 1	0,8	20,6 / 22,4	0,02	401	0,000	0,000	8

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (kW)	Time of Peak Sensible Cooling Load	Zone Heating Load (kW)	Zone Floor Area (m²)
Zone 1	4,6	Dec 1700	0,7	11,8

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (kW)	Time of Peak Sensible Load	Air Flow (L/s)	Heating Load (kW)	Floor Area (m²)	Space L/(s·m²)
Zone 1							
1P 17 DESPACHO PNAC	1	4,6	Dec 1700	401	0,7	11,8	33,96

Ventilation Sizing Summary for FC-17

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:44p. m

1. Summary

Ventilation Sizing Method Sum of Space OA Airflows

2. Space Ventilation Analysis

2.1 Zone: Zone 1

Zone Name / Space Name	Mult.	Floor Area (m²)	Maximum Occupants	Maximum Supply Air (L/s)	Required Outdoor Air (L/s/person)	Required Outdoor Air (L/(s·m²))	Required Outdoor Air (L/s)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (L/s)
Zone 1									
1P 17 DESPACHO PNAC	1	11,8	1,2	400,7	3,00	0,40	0,0	0,0	8,3
Totals (incl. Space Multipliers)				400,7					8,3

Zone Sizing Summary for FC-18

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:44p. m

Air System Information

Air System Name **FC-18**
Equipment Class **TERM**
Air System Type **4P-FC**

Number of zones **1**
Floor Area **9,0** m²
Location **Concepcion, Chile**

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**

Terminal Unit Sizing Data - Cooling

Zone Name	Total Coil Load (kW)	Sens Coil Load (kW)	Coil Entering DB / WB (°C)	Coil Leaving DB / WB (°C)	Water Flow @ 5,6 K (L/s)	Time of Peak Coil Load	Zone L/(s·m²)
Zone 1	1,8	1,8	24,5 / 17,8	14,9 / 14,3	0,08	Mar 1600	17,31

Terminal Unit Sizing Data - Heating, Fan, Ventilation

Zone Name	Heating Coil Load (kW)	Heating Coil Ent/Lvg DB (°C)	Htg Coil Water Flow @11,1 K (L/s)	Fan Design Airflow (L/s)	Fan Motor (BHP)	Fan Motor (kW)	OA Vent Design Airflow (L/s)
Zone 1	0,3	20,4 / 22,2	0,01	156	0,000	0,000	6

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (kW)	Time of Peak Sensible Cooling Load	Zone Heating Load (kW)	Zone Floor Area (m²)
Zone 1	1,8	Mar 1600	0,2	9,0

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (kW)	Time of Peak Sensible Load	Air Flow (L/s)	Heating Load (kW)	Floor Area (m²)	Space L/(s·m²)
Zone 1							
1P 18 BOX QUIM FARM	1	1,8	Mar 1600	156	0,2	9,0	17,31

Ventilation Sizing Summary for FC-18

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:44p. m

1. Summary

Ventilation Sizing Method Sum of Space OA Airflows

2. Space Ventilation Analysis

2.1 Zone: Zone 1

Zone Name / Space Name	Mult.	Floor Area (m²)	Maximum Occupants	Maximum Supply Air (L/s)	Required Outdoor Air (L/s/person)	Required Outdoor Air (L/(s·m²))	Required Outdoor Air (L/s)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (L/s)
Zone 1									
1P 18 BOX QUIM FARM	1	9,0	0,9	155,7	3,00	0,40	0,0	0,0	6,3
Totals (incl. Space Multipliers)				155,7					6,3

Zone Sizing Summary for FC-19

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:44p. m

Air System Information

Air System Name **FC-19**
Equipment Class **TERM**
Air System Type **4P-FC**

Number of zones **1**
Floor Area **33,0** m²
Location **Concepcion, Chile**

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**

Terminal Unit Sizing Data - Cooling

Zone Name	Total Coil Load (kW)	Sens Coil Load (kW)	Coil Entering DB / WB (°C)	Coil Leaving DB / WB (°C)	Water Flow @ 5,6 K (L/s)	Time of Peak Coil Load	Zone L/(s·m²)
Zone 1	5,8	5,2	23,5 / 17,8	14,9 / 14,4	0,25	Dec 1700	15,21

Terminal Unit Sizing Data - Heating, Fan, Ventilation

Zone Name	Heating Coil Load (kW)	Heating Coil Ent/Lvg DB (°C)	Htg Coil Water Flow @11,1 K (L/s)	Fan Design Airflow (L/s)	Fan Motor (BHP)	Fan Motor (kW)	OA Vent Design Airflow (L/s)
Zone 1	6,9	10,0 / 21,5	0,15	502	0,000	0,000	284

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (kW)	Time of Peak Sensible Cooling Load	Zone Heating Load (kW)	Zone Floor Area (m²)
Zone 1	5,7	Dec 1800	0,4	33,0

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (kW)	Time of Peak Sensible Load	Air Flow (L/s)	Heating Load (kW)	Floor Area (m²)	Space L/(s·m²)
Zone 1							
1P 19 ESPERA PNAC FARMA	1	5,7	Dec 1800	502	0,4	33,0	15,21

Ventilation Sizing Summary for FC-19

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:44p. m.

1. Summary

Ventilation Sizing Method Sum of Space OA Airflows

2. Space Ventilation Analysis

2.1 Zone: Zone 1

Zone Name / Space Name	Mult.	Floor Area (m²)	Maximum Occupants	Maximum Supply Air (L/s)	Required Outdoor Air (L/s/person)	Required Outdoor Air (L/(s·m²))	Required Outdoor Air (L/s)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (L/s)
Zone 1									
1P 19 ESPERA PNAC FARMA	1	33,0	41,3	501,8	6,00	1,10	0,0	0,0	283,8
Totals (incl. Space Multipliers)				501,8					283,8

Zone Sizing Summary for FC-20

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:44p. m

Air System Information

Air System Name **FC-20**
Equipment Class **TERM**
Air System Type **4P-FC**

Number of zones **1**
Floor Area **40,1** m²
Location **Concepcion, Chile**

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**

Terminal Unit Sizing Data - Cooling

Zone Name	Total Coil Load (kW)	Sens Coil Load (kW)	Coil Entering DB / WB (°C)	Coil Leaving DB / WB (°C)	Water Flow @ 5,6 K (L/s)	Time of Peak Coil Load	Zone L/(s·m²)
Zone 1	10,7	9,9	24,3 / 17,8	14,6 / 14,0	0,46	Mar 1500	21,23

Terminal Unit Sizing Data - Heating, Fan, Ventilation

Zone Name	Heating Coil Load (kW)	Heating Coil Ent/Lvg DB (°C)	Htg Coil Water Flow @11,1 K (L/s)	Fan Design Airflow (L/s)	Fan Motor (BHP)	Fan Motor (kW)	OA Vent Design Airflow (L/s)
Zone 1	2,7	19,5 / 22,2	0,06	851	0,000	0,000	64

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (kW)	Time of Peak Sensible Cooling Load	Zone Heating Load (kW)	Zone Floor Area (m²)
Zone 1	9,7	Mar 1600	1,3	40,1

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)
Zone 1							
1P 20 SALA MULTIUSO	1	9,7	Mar 1600	851	1,3	40,1	21,23

Ventilation Sizing Summary for FC-20

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:44p. m.

1. Summary

Ventilation Sizing Method Sum of Space OA Airflows

2. Space Ventilation Analysis

2.1 Zone: Zone 1

Zone Name / Space Name	Mult.	Floor Area (m²)	Maximum Occupants	Maximum Supply Air (L/s)	Required Outdoor Air (L/s/person)	Required Outdoor Air (L/(s·m²))	Required Outdoor Air (L/s)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (L/s)
Zone 1									
1P 20 SALA MULTIUSO	1	40,1	16,0	851,2	3,00	0,40	0,0	0,0	64,2
Totals (incl. Space Multipliers)				851,2					64,2

Zone Sizing Summary for FC-21

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:44p. m

Air System Information

Air System Name **FC-21**
Equipment Class **TERM**
Air System Type **4P-FC**

Number of zones **1**
Floor Area **9,8** m²
Location **Concepcion, Chile**

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**

Terminal Unit Sizing Data - Cooling

Zone Name	Total Coil Load (kW)	Sens Coil Load (kW)	Coil Entering DB / WB (°C)	Coil Leaving DB / WB (°C)	Water Flow @ 5,6 K (L/s)	Time of Peak Coil Load	Zone L/(s·m²)
Zone 1	0,4	0,4	24,3 / 17,7	14,8 / 14,2	0,02	Jan 1400	3,91

Terminal Unit Sizing Data - Heating, Fan, Ventilation

Zone Name	Heating Coil Load (kW)	Heating Coil Ent/Lvg DB (°C)	Htg Coil Water Flow @11,1 K (L/s)	Fan Design Airflow (L/s)	Fan Motor (BHP)	Fan Motor (kW)	OA Vent Design Airflow (L/s)
Zone 1	0,6	8,5 / 21,1	0,01	38	0,000	0,000	25

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (kW)	Time of Peak Sensible Cooling Load	Zone Heating Load (kW)	Zone Floor Area (m²)
Zone 1	0,4	Jan 1900	0,0	9,8

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (kW)	Time of Peak Sensible Load	Air Flow (L/s)	Heating Load (kW)	Floor Area (m²)	Space L/(s·m²)
Zone 1							
1P 21 OIRS	1	0,2	Jan 1900	18	0,0	6,7	2,71
1P 22 LACT PUBLICO	1	0,2	Jan 1900	20	0,0	3,1	6,50

Ventilation Sizing Summary for FC-21

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:44p. m

1. Summary

Ventilation Sizing Method Sum of Space OA Airflows

2. Space Ventilation Analysis

2.1 Zone: Zone 1

Zone Name / Space Name	Mult.	Floor Area (m²)	Maximum Occupants	Maximum Supply Air (L/s)	Required Outdoor Air (L/s/person)	Required Outdoor Air (L/(s·m²))	Required Outdoor Air (L/s)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (L/s)
Zone 1									
1P 21 OIRS	1	6,7	0,7	18,1	3,00	0,40	0,0	0,0	4,7
1P 22 LACT PUBLICO	1	3,1	1,6	20,2	10,00	1,50	0,0	0,0	20,2
Totals (incl. Space Multipliers)				38,3					24,8

Zone Sizing Summary for FC-23

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:44p. m

Air System Information

Air System Name **FC-23**
Equipment Class **TERM**
Air System Type **4P-FC**

Number of zones **1**
Floor Area **15,4** m²
Location **Concepcion, Chile**

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**

Terminal Unit Sizing Data - Cooling

Zone Name	Total Coil Load (kW)	Sens Coil Load (kW)	Coil Entering DB / WB (°C)	Coil Leaving DB / WB (°C)	Water Flow @ 5,6 K (L/s)	Time of Peak Coil Load	Zone L/(s·m²)
Zone 1	0,9	0,7	24,7 / 18,4	14,4 / 13,9	0,04	Jan 1500	3,90

Terminal Unit Sizing Data - Heating, Fan, Ventilation

Zone Name	Heating Coil Load (kW)	Heating Coil Ent/Lvg DB (°C)	Htg Coil Water Flow @11,1 K (L/s)	Fan Design Airflow (L/s)	Fan Motor (BHP)	Fan Motor (kW)	OA Vent Design Airflow (L/s)
Zone 1	0,5	14,1 / 21,1	0,01	60	0,000	0,000	22

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (kW)	Time of Peak Sensible Cooling Load	Zone Heating Load (kW)	Zone Floor Area (m²)
Zone 1	0,7	Jan 1900	0,0	15,4

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (kW)	Time of Peak Sensible Load	Air Flow (L/s)	Heating Load (kW)	Floor Area (m²)	Space L/(s·m²)
Zone 1							
1P 23 TRABAJO CLIN GRUPA	1	0,7	Jan 1900	60	0,0	15,4	3,90

Ventilation Sizing Summary for FC-23

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:44p. m

1. Summary

Ventilation Sizing Method Sum of Space OA Airflows

2. Space Ventilation Analysis

2.1 Zone: Zone 1

Zone Name / Space Name	Mult.	Floor Area (m²)	Maximum Occupants	Maximum Supply Air (L/s)	Required Outdoor Air (L/s/person)	Required Outdoor Air (L/(s·m²))	Required Outdoor Air (L/s)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (L/s)
Zone 1									
1P 23 TRABAJO CLIN GRUPA	1	15,4	5,1	60,1	3,00	0,40	0,0	0,0	21,6
Totals (incl. Space Multipliers)				60,1					21,6

Zone Sizing Summary for FC-24

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:44p. m

Air System Information

Air System Name **FC-24**
Equipment Class **TERM**
Air System Type **4P-FC**

Number of zones **1**
Floor Area **96,4** m²
Location **Concepcion, Chile**

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**

Terminal Unit Sizing Data - Cooling

Zone Name	Total Coil Load (kW)	Sens Coil Load (kW)	Coil Entering DB / WB (°C)	Coil Leaving DB / WB (°C)	Water Flow @ 5,6 K (L/s)	Time of Peak Coil Load	Zone L/(s·m²)
Zone 1	7,3	7,3	23,8 / 17,3	14,4 / 13,8	0,32	Feb 1200	6,69

Terminal Unit Sizing Data - Heating, Fan, Ventilation

Zone Name	Heating Coil Load (kW)	Heating Coil Ent/Lvg DB (°C)	Htg Coil Water Flow @11,1 K (L/s)	Fan Design Airflow (L/s)	Fan Motor (BHP)	Fan Motor (kW)	OA Vent Design Airflow (L/s)
Zone 1	5,6	14,8 / 22,0	0,12	645	0,000	0,000	209

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (kW)	Time of Peak Sensible Cooling Load	Zone Heating Load (kW)	Zone Floor Area (m²)
Zone 1	7,3	Mar 1200	0,7	96,4

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (kW)	Time of Peak Sensible Load	Air Flow (L/s)	Heating Load (kW)	Floor Area (m²)	Space L/(s·m²)
Zone 1							
1P 24 SALA REHABILITACIO	1	7,3	Mar 1200	645	0,7	96,4	6,69

Ventilation Sizing Summary for FC-24

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:44p. m

1. Summary

Ventilation Sizing Method Sum of Space OA Airflows

2. Space Ventilation Analysis

2.1 Zone: Zone 1

Zone Name / Space Name	Mult.	Floor Area (m²)	Maximum Occupants	Maximum Supply Air (L/s)	Required Outdoor Air (L/s/person)	Required Outdoor Air (L/(s·m²))	Required Outdoor Air (L/s)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (L/s)
Zone 1									
1P 24 SALA REHABILITACIO	1	96,4	6,4	644,7	10,00	1,50	0,0	0,0	208,9
Totals (incl. Space Multipliers)				644,7					208,9

Zone Sizing Summary for FC-26

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

Air System Information

Air System Name **FC-26**
Equipment Class **TERM**
Air System Type **4P-FC**

Number of zones **1**
Floor Area **15,2** m²
Location **Concepcion, Chile**

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**

Terminal Unit Sizing Data - Cooling

Zone Name	Total Coil Load (kW)	Sens Coil Load (kW)	Coil Entering DB / WB (°C)	Coil Leaving DB / WB (°C)	Water Flow @ 5,6 K (L/s)	Time of Peak Coil Load	Zone L/(s·m²)
Zone 1	2,1	2,1	23,1 / 17,0	14,4 / 13,9	0,09	Dec 0900	13,32

Terminal Unit Sizing Data - Heating, Fan, Ventilation

Zone Name	Heating Coil Load (kW)	Heating Coil Ent/Lvg DB (°C)	Htg Coil Water Flow @11,1 K (L/s)	Fan Design Airflow (L/s)	Fan Motor (BHP)	Fan Motor (kW)	OA Vent Design Airflow (L/s)
Zone 1	1,2	17,6 / 22,7	0,03	203	0,000	0,000	38

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (kW)	Time of Peak Sensible Cooling Load	Zone Heating Load (kW)	Zone Floor Area (m²)
Zone 1	2,3	Dec 0900	0,3	15,2

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (kW)	Time of Peak Sensible Load	Air Flow (L/s)	Heating Load (kW)	Floor Area (m²)	Space L/(s·m²)
Zone 1							
1P 26 PODOLOGIA	1	2,3	Dec 0900	203	0,3	15,2	13,32

Ventilation Sizing Summary for FC-26

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:44p. m.

1. Summary

Ventilation Sizing Method Sum of Space OA Airflows

2. Space Ventilation Analysis

2.1 Zone: Zone 1

Zone Name / Space Name	Mult.	Floor Area (m²)	Maximum Occupants	Maximum Supply Air (L/s)	Required Outdoor Air (L/s/person)	Required Outdoor Air (L/(s·m²))	Required Outdoor Air (L/s)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (L/s)
Zone 1									
1P 26 PODOLOGIA	1	15,2	1,5	202,5	10,00	1,50	0,0	0,0	38,0
Totals (incl. Space Multipliers)				202,5					38,0

Zone Sizing Summary for FC-27

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

Air System Information

Air System Name **FC-27**
Equipment Class **TERM**
Air System Type **4P-FC**

Number of zones **1**
Floor Area **15,2** m²
Location **Concepcion, Chile**

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**

Terminal Unit Sizing Data - Cooling

Zone Name	Total Coil Load (kW)	Sens Coil Load (kW)	Coil Entering DB / WB (°C)	Coil Leaving DB / WB (°C)	Water Flow @ 5,6 K (L/s)	Time of Peak Coil Load	Zone L/(s·m²)
Zone 1	1,8	1,8	22,9 / 17,0	14,4 / 13,9	0,08	Dec 0900	11,32

Terminal Unit Sizing Data - Heating, Fan, Ventilation

Zone Name	Heating Coil Load (kW)	Heating Coil Ent/Lvg DB (°C)	Htg Coil Water Flow @11,1 K (L/s)	Fan Design Airflow (L/s)	Fan Motor (BHP)	Fan Motor (kW)	OA Vent Design Airflow (L/s)
Zone 1	1,2	16,9 / 22,7	0,03	172	0,000	0,000	38

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (kW)	Time of Peak Sensible Cooling Load	Zone Heating Load (kW)	Zone Floor Area (m²)
Zone 1	2,0	Dec 0900	0,3	15,2

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (kW)	Time of Peak Sensible Load	Air Flow (L/s)	Heating Load (kW)	Floor Area (m²)	Space L/(s·m²)
Zone 1							
1P 27 ECOGRAFIA	1	2,0	Dec 0900	172	0,3	15,2	11,32

Ventilation Sizing Summary for FC-27

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
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1. Summary

Ventilation Sizing Method Sum of Space OA Airflows

2. Space Ventilation Analysis

2.1 Zone: Zone 1

Zone Name / Space Name	Mult.	Floor Area (m²)	Maximum Occupants	Maximum Supply Air (L/s)	Required Outdoor Air (L/s/person)	Required Outdoor Air (L/(s·m²))	Required Outdoor Air (L/s)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (L/s)
Zone 1									
1P 27 ECOGRAFIA	1	15,2	1,5	172,1	10,00	1,50	0,0	0,0	38,0
Totals (incl. Space Multipliers)				172,1					38,0

Zone Sizing Summary for FC-28

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

Air System Information

Air System Name **FC-28**
Equipment Class **TERM**
Air System Type **4P-FC**

Number of zones **1**
Floor Area **30,1** m²
Location **Concepcion, Chile**

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**

Terminal Unit Sizing Data - Cooling

Zone Name	Total Coil Load (kW)	Sens Coil Load (kW)	Coil Entering DB / WB (°C)	Coil Leaving DB / WB (°C)	Water Flow @ 5,6 K (L/s)	Time of Peak Coil Load	Zone L/(s·m²)
Zone 1	6,2	6,0	23,2 / 17,3	14,8 / 14,2	0,27	Jan 1000	19,67

Terminal Unit Sizing Data - Heating, Fan, Ventilation

Zone Name	Heating Coil Load (kW)	Heating Coil Ent/Lvg DB (°C)	Htg Coil Water Flow @11,1 K (L/s)	Fan Design Airflow (L/s)	Fan Motor (BHP)	Fan Motor (kW)	OA Vent Design Airflow (L/s)
Zone 1	4,0	17,3 / 22,9	0,09	592	0,000	0,000	120

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (kW)	Time of Peak Sensible Cooling Load	Zone Heating Load (kW)	Zone Floor Area (m²)
Zone 1	6,7	Dec 0900	1,1	30,1

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)
Zone 1							
1P 28 SALA DE ESTIMULACI	1	6,7	Dec 0900	592	1,1	30,1	19,67

Ventilation Sizing Summary for FC-28

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
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1. Summary

Ventilation Sizing Method Sum of Space OA Airflows

2. Space Ventilation Analysis

2.1 Zone: Zone 1

Zone Name / Space Name	Mult.	Floor Area (m²)	Maximum Occupants	Maximum Supply Air (L/s)	Required Outdoor Air (L/s/person)	Required Outdoor Air (L/(s·m²))	Required Outdoor Air (L/s)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (L/s)
Zone 1									
1P 28 SALA DE ESTIMULACI	1	30,1	7,5	592,2	10,00	1,50	0,0	0,0	120,4
Totals (incl. Space Multipliers)				592,2					120,4

Zone Sizing Summary for FC-31

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:44p. m

Air System Information

Air System Name **FC-31**
Equipment Class **TERM**
Air System Type **4P-FC**

Number of zones **1**
Floor Area **24,2** m²
Location **Concepcion, Chile**

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**

Terminal Unit Sizing Data - Cooling

Zone Name	Total Coil Load (kW)	Sens Coil Load (kW)	Coil Entering DB / WB (°C)	Coil Leaving DB / WB (°C)	Water Flow @ 5,6 K (L/s)	Time of Peak Coil Load	Zone L/(s·m²)
Zone 1	7,0	6,8	23,9 / 17,6	14,9 / 14,3	0,30	Dec 1800	26,03

Terminal Unit Sizing Data - Heating, Fan, Ventilation

Zone Name	Heating Coil Load (kW)	Heating Coil Ent/Lvg DB (°C)	Htg Coil Water Flow @11,1 K (L/s)	Fan Design Airflow (L/s)	Fan Motor (BHP)	Fan Motor (kW)	OA Vent Design Airflow (L/s)
Zone 1	3,7	17,5 / 22,4	0,08	630	0,000	0,000	117

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (kW)	Time of Peak Sensible Cooling Load	Zone Heating Load (kW)	Zone Floor Area (m²)
Zone 1	7,1	Dec 1700	0,9	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)
Zone 1							
2P 31 BOX CLINICO	1	4,7	Jan 1700	416	0,7	12,0	34,70
2P 32 BOX CLINICO	1	2,4	Dec 1800	213	0,3	12,2	17,49

Ventilation Sizing Summary for FC-31

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:44p. m.

1. Summary

Ventilation Sizing Method Sum of Space OA Airflows

2. Space Ventilation Analysis

2.1 Zone: Zone 1

Zone Name / Space Name	Mult.	Floor Area (m²)	Maximum Occupants	Maximum Supply Air (L/s)	Required Outdoor Air (L/s/person)	Required Outdoor Air (L/(s·m²))	Required Outdoor Air (L/s)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (L/s)
Zone 1									
2P 31 BOX CLINICO	1	12,0	4,0	416,4	10,00	1,50	0,0	0,0	58,0
2P 32 BOX CLINICO	1	12,2	4,1	213,4	10,00	1,50	0,0	0,0	59,0
Totals (incl. Space Multipliers)				629,8					117,0

Zone Sizing Summary for FC-33

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:44p. m

Air System Information

Air System Name **FC-33**
Equipment Class **TERM**
Air System Type **4P-FC**

Number of zones **1**
Floor Area **24,4** m²
Location **Concepcion, Chile**

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**

Terminal Unit Sizing Data - Cooling

Zone Name	Total Coil Load (kW)	Sens Coil Load (kW)	Coil Entering DB / WB (°C)	Coil Leaving DB / WB (°C)	Water Flow @ 5,6 K (L/s)	Time of Peak Coil Load	Zone L/(s·m²)
Zone 1	4,8	4,6	24,0 / 17,8	15,0 / 14,4	0,21	Dec 1700	17,49

Terminal Unit Sizing Data - Heating, Fan, Ventilation

Zone Name	Heating Coil Load (kW)	Heating Coil Ent/Lvg DB (°C)	Htg Coil Water Flow @11,1 K (L/s)	Fan Design Airflow (L/s)	Fan Motor (BHP)	Fan Motor (kW)	OA Vent Design Airflow (L/s)
Zone 1	3,4	15,8 / 22,4	0,07	427	0,000	0,000	118

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (kW)	Time of Peak Sensible Cooling Load	Zone Heating Load (kW)	Zone Floor Area (m²)
Zone 1	4,9	Dec 1800	0,6	24,4

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (kW)	Time of Peak Sensible Load	Air Flow (L/s)	Heating Load (kW)	Floor Area (m²)	Space L/(s·m²)
Zone 1							
2P 33 BOX CLINICO	1	2,4	Dec 1800	213	0,3	12,2	17,49
2P 34 BOX CLINICO	1	2,4	Dec 1800	213	0,3	12,2	17,49

Ventilation Sizing Summary for FC-33

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:44p. m.

1. Summary

Ventilation Sizing Method Sum of Space OA Airflows

2. Space Ventilation Analysis

2.1 Zone: Zone 1

Zone Name / Space Name	Mult.	Floor Area (m²)	Maximum Occupants	Maximum Supply Air (L/s)	Required Outdoor Air (L/s/person)	Required Outdoor Air (L/(s·m²))	Required Outdoor Air (L/s)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (L/s)
Zone 1									
2P 33 BOX CLINICO	1	12,2	4,1	213,4	10,00	1,50	0,0	0,0	59,0
2P 34 BOX CLINICO	1	12,2	4,1	213,4	10,00	1,50	0,0	0,0	59,0
Totals (incl. Space Multipliers)				426,8					117,9

Zone Sizing Summary for FC-35

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:44p. m

Air System Information

Air System Name **FC-35**
Equipment Class **TERM**
Air System Type **4P-FC**

Number of zones **1**
Floor Area **24,4** m²
Location **Concepcion, Chile**

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**

Terminal Unit Sizing Data - Cooling

Zone Name	Total Coil Load (kW)	Sens Coil Load (kW)	Coil Entering DB / WB (°C)	Coil Leaving DB / WB (°C)	Water Flow @ 5,6 K (L/s)	Time of Peak Coil Load	Zone L/(s·m²)
Zone 1	4,8	4,6	24,0 / 17,8	15,0 / 14,4	0,21	Dec 1700	17,49

Terminal Unit Sizing Data - Heating, Fan, Ventilation

Zone Name	Heating Coil Load (kW)	Heating Coil Ent/Lvg DB (°C)	Htg Coil Water Flow @11,1 K (L/s)	Fan Design Airflow (L/s)	Fan Motor (BHP)	Fan Motor (kW)	OA Vent Design Airflow (L/s)
Zone 1	3,4	15,8 / 22,4	0,07	427	0,000	0,000	118

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (kW)	Time of Peak Sensible Cooling Load	Zone Heating Load (kW)	Zone Floor Area (m²)
Zone 1	4,9	Dec 1800	0,6	24,4

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (kW)	Time of Peak Sensible Load	Air Flow (L/s)	Heating Load (kW)	Floor Area (m²)	Space L/(s·m²)
Zone 1							
2P 35 BOX CLINICO	1	2,4	Dec 1800	213	0,3	12,2	17,49
2P 36 BOX CLINICO	1	2,4	Dec 1800	213	0,3	12,2	17,49

Ventilation Sizing Summary for FC-35

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:44p. m.

1. Summary

Ventilation Sizing Method Sum of Space OA Airflows

2. Space Ventilation Analysis

2.1 Zone: Zone 1

Zone Name / Space Name	Mult.	Floor Area (m²)	Maximum Occupants	Maximum Supply Air (L/s)	Required Outdoor Air (L/s/person)	Required Outdoor Air (L/(s·m²))	Required Outdoor Air (L/s)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (L/s)
Zone 1									
2P 35 BOX CLINICO	1	12,2	4,1	213,4	10,00	1,50	0,0	0,0	59,0
2P 36 BOX CLINICO	1	12,2	4,1	213,4	10,00	1,50	0,0	0,0	59,0
Totals (incl. Space Multipliers)				426,8					117,9

Zone Sizing Summary for FC-37

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:44p. m

Air System Information

Air System Name **FC-37**
Equipment Class **TERM**
Air System Type **4P-FC**

Number of zones **1**
Floor Area **29,8** m²
Location **Concepcion, Chile**

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**

Terminal Unit Sizing Data - Cooling

Zone Name	Total Coil Load (kW)	Sens Coil Load (kW)	Coil Entering DB / WB (°C)	Coil Leaving DB / WB (°C)	Water Flow @ 5,6 K (L/s)	Time of Peak Coil Load	Zone L/(s·m²)
Zone 1	5,6	5,5	24,3 / 17,9	15,3 / 14,7	0,24	Feb 1700	17,06

Terminal Unit Sizing Data - Heating, Fan, Ventilation

Zone Name	Heating Coil Load (kW)	Heating Coil Ent/Lvg DB (°C)	Htg Coil Water Flow @11,1 K (L/s)	Fan Design Airflow (L/s)	Fan Motor (BHP)	Fan Motor (kW)	OA Vent Design Airflow (L/s)
Zone 1	3,8	15,4 / 21,6	0,08	508	0,000	0,000	144

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (kW)	Time of Peak Sensible Cooling Load	Zone Heating Load (kW)	Zone Floor Area (m²)
Zone 1	5,8	Mar 1600	0,6	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)
Zone 1							
2P 37 BOX DENTAL	1	2,9	Mar 1600	254	0,3	14,9	17,06
2P 38 BOX DENTAL	1	2,9	Mar 1600	254	0,3	14,9	17,06

Ventilation Sizing Summary for FC-37

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:44p. m.

1. Summary

Ventilation Sizing Method Sum of Space OA Airflows

2. Space Ventilation Analysis

2.1 Zone: Zone 1

Zone Name / Space Name	Mult.	Floor Area (m²)	Maximum Occupants	Maximum Supply Air (L/s)	Required Outdoor Air (L/s/person)	Required Outdoor Air (L/(s·m²))	Required Outdoor Air (L/s)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (L/s)
Zone 1									
2P 37 BOX DENTAL	1	14,9	5,0	254,2	10,00	1,50	0,0	0,0	72,0
2P 38 BOX DENTAL	1	14,9	5,0	254,2	10,00	1,50	0,0	0,0	72,0
Totals (incl. Space Multipliers)				508,3					144,0

Zone Sizing Summary for FC-39

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:44p. m

Air System Information

Air System Name **FC-39**
Equipment Class **TERM**
Air System Type **4P-FC**

Number of zones **1**
Floor Area **30,8** m²
Location **Concepcion, Chile**

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**

Terminal Unit Sizing Data - Cooling

Zone Name	Total Coil Load (kW)	Sens Coil Load (kW)	Coil Entering DB / WB (°C)	Coil Leaving DB / WB (°C)	Water Flow @ 5,6 K (L/s)	Time of Peak Coil Load	Zone L/(s·m²)
Zone 1	1,5	1,3	24,9 / 18,3	14,4 / 13,8	0,07	Jan 1500	3,31

Terminal Unit Sizing Data - Heating, Fan, Ventilation

Zone Name	Heating Coil Load (kW)	Heating Coil Ent/Lvg DB (°C)	Htg Coil Water Flow @11,1 K (L/s)	Fan Design Airflow (L/s)	Fan Motor (BHP)	Fan Motor (kW)	OA Vent Design Airflow (L/s)
Zone 1	0,8	14,9 / 21,1	0,02	102	0,000	0,000	32

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (kW)	Time of Peak Sensible Cooling Load	Zone Heating Load (kW)	Zone Floor Area (m²)
Zone 1	1,2	Jan 1900	0,0	30,8

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (kW)	Time of Peak Sensible Load	Air Flow (L/s)	Heating Load (kW)	Floor Area (m²)	Space L/(s·m²)
Zone 1							
2P 39 TRAB CLIN GRUPAL	1	0,7	Jan 1900	60	0,0	15,4	3,90
2P 40 SOME SATELITE	1	0,5	Jan 1900	42	0,0	15,4	2,71

Ventilation Sizing Summary for FC-39

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:44p. m.

1. Summary

Ventilation Sizing Method Sum of Space OA Airflows

2. Space Ventilation Analysis

2.1 Zone: Zone 1

Zone Name / Space Name	Mult.	Floor Area (m²)	Maximum Occupants	Maximum Supply Air (L/s)	Required Outdoor Air (L/s/person)	Required Outdoor Air (L/(s·m²))	Required Outdoor Air (L/s)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (L/s)
Zone 1									
2P 39 TRAB CLIN GRUPAL	1	15,4	5,1	60,1	3,00	0,40	0,0	0,0	21,6
2P 40 SOME SATELITE	1	15,4	1,5	41,7	3,00	0,40	0,0	0,0	10,8
Totals (incl. Space Multipliers)				101,8					32,3

Zone Sizing Summary for FC-41

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:44p. m

Air System Information

Air System Name **FC-41**
Equipment Class **TERM**
Air System Type **4P-FC**

Number of zones **1**
Floor Area **24,0** m²
Location **Concepcion, Chile**

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**

Terminal Unit Sizing Data - Cooling

Zone Name	Total Coil Load (kW)	Sens Coil Load (kW)	Coil Entering DB / WB (°C)	Coil Leaving DB / WB (°C)	Water Flow @ 5,6 K (L/s)	Time of Peak Coil Load	Zone L/(s·m²)
Zone 1	5,4	5,4	24,3 / 18,2	15,9 / 15,3	0,23	Dec 1600	22,11

Terminal Unit Sizing Data - Heating, Fan, Ventilation

Zone Name	Heating Coil Load (kW)	Heating Coil Ent/Lvg DB (°C)	Htg Coil Water Flow @11,1 K (L/s)	Fan Design Airflow (L/s)	Fan Motor (BHP)	Fan Motor (kW)	OA Vent Design Airflow (L/s)
Zone 1	3,7	16,9 / 22,7	0,08	531	0,000	0,000	116

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (kW)	Time of Peak Sensible Cooling Load	Zone Heating Load (kW)	Zone Floor Area (m²)
Zone 1	5,6	Dec 1700	0,9	24,0

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (kW)	Time of Peak Sensible Load	Air Flow (L/s)	Heating Load (kW)	Floor Area (m²)	Space L/(s·m²)
Zone 1							
2P 41 BOX CLINICO	1	4,0	Dec 1800	355	0,7	12,0	29,58
2P 42 BOX CLINICO	1	2,0	Dec 0900	176	0,3	12,0	14,65

Ventilation Sizing Summary for FC-41

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:44p. m.

1. Summary

Ventilation Sizing Method Sum of Space OA Airflows

2. Space Ventilation Analysis

2.1 Zone: Zone 1

Zone Name / Space Name	Mult.	Floor Area (m²)	Maximum Occupants	Maximum Supply Air (L/s)	Required Outdoor Air (L/s/person)	Required Outdoor Air (L/(s·m²))	Required Outdoor Air (L/s)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (L/s)
Zone 1									
2P 41 BOX CLINICO	1	12,0	4,0	354,9	10,00	1,50	0,0	0,0	58,0
2P 42 BOX CLINICO	1	12,0	4,0	175,8	10,00	1,50	0,0	0,0	58,0
Totals (incl. Space Multipliers)				530,8					116,0

Zone Sizing Summary for FC-43

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:44p. m

Air System Information

Air System Name **FC-43**
Equipment Class **TERM**
Air System Type **4P-FC**

Number of zones **1**
Floor Area **12,0** m²
Location **Concepcion, Chile**

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**

Terminal Unit Sizing Data - Cooling

Zone Name	Total Coil Load (kW)	Sens Coil Load (kW)	Coil Entering DB / WB (°C)	Coil Leaving DB / WB (°C)	Water Flow @ 5,6 K (L/s)	Time of Peak Coil Load	Zone L/(s·m²)
Zone 1	1,8	1,8	24,2 / 18,1	15,7 / 15,1	0,08	Dec 1500	14,65

Terminal Unit Sizing Data - Heating, Fan, Ventilation

Zone Name	Heating Coil Load (kW)	Heating Coil Ent/Lvg DB (°C)	Htg Coil Water Flow @11,1 K (L/s)	Fan Design Airflow (L/s)	Fan Motor (BHP)	Fan Motor (kW)	OA Vent Design Airflow (L/s)
Zone 1	1,6	14,6 / 22,3	0,04	176	0,000	0,000	58

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (kW)	Time of Peak Sensible Cooling Load	Zone Heating Load (kW)	Zone Floor Area (m²)
Zone 1	2,0	Dec 0900	0,3	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)
Zone 1							
2P 43 BOX PSICOLOGO	1	2,0	Dec 0900	176	0,3	12,0	14,65

Ventilation Sizing Summary for FC-43

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:44p. m

1. Summary

Ventilation Sizing Method Sum of Space OA Airflows

2. Space Ventilation Analysis

2.1 Zone: Zone 1

Zone Name / Space Name	Mult.	Floor Area (m²)	Maximum Occupants	Maximum Supply Air (L/s)	Required Outdoor Air (L/s/person)	Required Outdoor Air (L/(s·m²))	Required Outdoor Air (L/s)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (L/s)
Zone 1									
2P 43 BOX PSICOLOGO	1	12,0	4,0	175,8	10,00	1,50	0,0	0,0	58,0
Totals (incl. Space Multipliers)				175,8					58,0

Zone Sizing Summary for FC-44

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:44p. m

Air System Information

Air System Name **FC-44**
Equipment Class **TERM**
Air System Type **4P-FC**

Number of zones **1**
Floor Area **17,8** m²
Location **Concepcion, Chile**

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**

Terminal Unit Sizing Data - Cooling

Zone Name	Total Coil Load (kW)	Sens Coil Load (kW)	Coil Entering DB / WB (°C)	Coil Leaving DB / WB (°C)	Water Flow @ 5,6 K (L/s)	Time of Peak Coil Load	Zone L/(s·m²)
Zone 1	2,9	2,9	24,4 / 18,2	16,4 / 15,4	0,13	Dec 1500	16,91

Terminal Unit Sizing Data - Heating, Fan, Ventilation

Zone Name	Heating Coil Load (kW)	Heating Coil Ent/Lvg DB (°C)	Htg Coil Water Flow @11,1 K (L/s)	Fan Design Airflow (L/s)	Fan Motor (BHP)	Fan Motor (kW)	OA Vent Design Airflow (L/s)
Zone 1	2,5	15,6 / 22,5	0,05	301	0,000	0,000	86

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (kW)	Time of Peak Sensible Cooling Load	Zone Heating Load (kW)	Zone Floor Area (m²)
Zone 1	3,4	Dec 0900	0,5	17,8

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (kW)	Time of Peak Sensible Load	Air Flow (L/s)	Heating Load (kW)	Floor Area (m²)	Space L/(s·m²)
Zone 1							
2P 44 BOX GINECOLOGICO	1	3,4	Dec 0900	301	0,5	17,8	16,91

Ventilation Sizing Summary for FC-44

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:44p. m

1. Summary

Ventilation Sizing Method Sum of Space OA Airflows

2. Space Ventilation Analysis

2.1 Zone: Zone 1

Zone Name / Space Name	Mult.	Floor Area (m²)	Maximum Occupants	Maximum Supply Air (L/s)	Required Outdoor Air (L/s/person)	Required Outdoor Air (L/(s·m²))	Required Outdoor Air (L/s)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (L/s)
Zone 1									
2P 44 BOX GINECOLOGICO	1	17,8	5,9	301,1	10,00	1,50	0,0	0,0	86,0
Totals (incl. Space Multipliers)				301,1					86,0

Zone Sizing Summary for FC-45

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

Air System Information

Air System Name **FC-45**
Equipment Class **TERM**
Air System Type **4P-FC**

Number of zones **1**
Floor Area **29,2** m²
Location **Concepcion, Chile**

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**

Terminal Unit Sizing Data - Cooling

Zone Name	Total Coil Load (kW)	Sens Coil Load (kW)	Coil Entering DB / WB (°C)	Coil Leaving DB / WB (°C)	Water Flow @ 5,6 K (L/s)	Time of Peak Coil Load	Zone L/(s·m²)
Zone 1	8,7	8,5	24,2 / 17,7	15,0 / 14,3	0,37	Feb 1700	26,08

Terminal Unit Sizing Data - Heating, Fan, Ventilation

Zone Name	Heating Coil Load (kW)	Heating Coil Ent/Lvg DB (°C)	Htg Coil Water Flow @11,1 K (L/s)	Fan Design Airflow (L/s)	Fan Motor (BHP)	Fan Motor (kW)	OA Vent Design Airflow (L/s)
Zone 1	4,4	17,6 / 22,4	0,10	762	0,000	0,000	141

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (kW)	Time of Peak Sensible Cooling Load	Zone Heating Load (kW)	Zone Floor Area (m²)
Zone 1	8,4	Feb 1700	1,1	29,2

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (kW)	Time of Peak Sensible Load	Air Flow (L/s)	Heating Load (kW)	Floor Area (m²)	Space L/(s·m²)
Zone 1							
2P 45 BOX DENTAL	1	5,0	Jan 1700	442	0,7	14,5	30,49
2P 46 BOX DENTAL	1	3,6	Mar 1600	319	0,4	14,7	21,73

Ventilation Sizing Summary for FC-45

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:44p. m.

1. Summary

Ventilation Sizing Method Sum of Space OA Airflows

2. Space Ventilation Analysis

2.1 Zone: Zone 1

Zone Name / Space Name	Mult.	Floor Area (m²)	Maximum Occupants	Maximum Supply Air (L/s)	Required Outdoor Air (L/s/person)	Required Outdoor Air (L/(s·m²))	Required Outdoor Air (L/s)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (L/s)
Zone 1									
2P 45 BOX DENTAL	1	14,5	4,8	442,2	10,00	1,50	0,0	0,0	70,1
2P 46 BOX DENTAL	1	14,7	4,9	319,5	10,00	1,50	0,0	0,0	71,1
Totals (incl. Space Multipliers)				761,7					141,1

Zone Sizing Summary for FC-47

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

Air System Information

Air System Name **FC-47**
Equipment Class **TERM**
Air System Type **4P-FC**

Number of zones **1**
Floor Area **9,3** m²
Location **Concepcion, Chile**

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**

Terminal Unit Sizing Data - Cooling

Zone Name	Total Coil Load (kW)	Sens Coil Load (kW)	Coil Entering DB / WB (°C)	Coil Leaving DB / WB (°C)	Water Flow @ 5,6 K (L/s)	Time of Peak Coil Load	Zone L/(s·m²)
Zone 1	2,9	2,8	24,0 / 17,6	14,8 / 14,2	0,13	Dec 1800	27,71

Terminal Unit Sizing Data - Heating, Fan, Ventilation

Zone Name	Heating Coil Load (kW)	Heating Coil Ent/Lvg DB (°C)	Htg Coil Water Flow @11,1 K (L/s)	Fan Design Airflow (L/s)	Fan Motor (BHP)	Fan Motor (kW)	OA Vent Design Airflow (L/s)
Zone 1	1,4	17,8 / 22,5	0,03	258	0,000	0,000	45

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (kW)	Time of Peak Sensible Cooling Load	Zone Heating Load (kW)	Zone Floor Area (m²)
Zone 1	2,9	Dec 1800	0,4	9,3

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)
Zone 1							
2P 47 RX DENTAL	1	1,5	Dec 1800	129	0,2	4,6	27,97
2P 48 SALA COMANDOS	1	1,5	Dec 1800	129	0,2	4,7	27,45

Ventilation Sizing Summary for FC-47

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:44p. m.

1. Summary

Ventilation Sizing Method Sum of Space OA Airflows

2. Space Ventilation Analysis

2.1 Zone: Zone 1

Zone Name / Space Name	Mult.	Floor Area (m²)	Maximum Occupants	Maximum Supply Air (L/s)	Required Outdoor Air (L/s/person)	Required Outdoor Air (L/(s·m²))	Required Outdoor Air (L/s)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (L/s)
Zone 1									
2P 47 RX DENTAL	1	4,6	1,5	128,6	10,00	1,50	0,0	0,0	22,2
2P 48 SALA COMANDOS	1	4,7	1,6	129,0	10,00	1,50	0,0	0,0	22,7
Totals (incl. Space Multipliers)				257,7					45,0

Zone Sizing Summary for FC-49

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

Air System Information

Air System Name **FC-49**
Equipment Class **TERM**
Air System Type **4P-FC**

Number of zones **1**
Floor Area **24,0** m²
Location **Concepcion, Chile**

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**

Terminal Unit Sizing Data - Cooling

Zone Name	Total Coil Load (kW)	Sens Coil Load (kW)	Coil Entering DB / WB (°C)	Coil Leaving DB / WB (°C)	Water Flow @ 5,6 K (L/s)	Time of Peak Coil Load	Zone L/(s·m²)
Zone 1	7,8	7,6	24,2 / 17,6	14,8 / 14,2	0,33	Mar 1600	27,93

Terminal Unit Sizing Data - Heating, Fan, Ventilation

Zone Name	Heating Coil Load (kW)	Heating Coil Ent/Lvg DB (°C)	Htg Coil Water Flow @11,1 K (L/s)	Fan Design Airflow (L/s)	Fan Motor (BHP)	Fan Motor (kW)	OA Vent Design Airflow (L/s)
Zone 1	3,7	17,8 / 22,4	0,08	670	0,000	0,000	116

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (kW)	Time of Peak Sensible Cooling Load	Zone Heating Load (kW)	Zone Floor Area (m²)
Zone 1	7,6	Mar 1600	0,9	24,0

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (kW)	Time of Peak Sensible Load	Air Flow (L/s)	Heating Load (kW)	Floor Area (m²)	Space L/(s·m²)
Zone 1							
2P 49 BOX CLINICO	1	3,0	Mar 1600	266	0,3	12,1	21,96
2P 50 BOX CLINICO	1	4,6	Mar 1600	405	0,6	11,9	34,01

Ventilation Sizing Summary for FC-49

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:44p. m.

1. Summary

Ventilation Sizing Method Sum of Space OA Airflows

2. Space Ventilation Analysis

2.1 Zone: Zone 1

Zone Name / Space Name	Mult.	Floor Area (m²)	Maximum Occupants	Maximum Supply Air (L/s)	Required Outdoor Air (L/s/person)	Required Outdoor Air (L/(s·m²))	Required Outdoor Air (L/s)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (L/s)
Zone 1									
2P 49 BOX CLINICO	1	12,1	4,0	265,7	10,00	1,50	0,0	0,0	58,5
2P 50 BOX CLINICO	1	11,9	4,0	404,7	10,00	1,50	0,0	0,0	57,5
Totals (incl. Space Multipliers)				670,3					116,0

Zone Sizing Summary for FC-51

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

Air System Information

Air System Name **FC-51**
Equipment Class **TERM**
Air System Type **4P-FC**

Number of zones **1**
Floor Area **119,0** m²
Location **Concepcion, Chile**

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**

Terminal Unit Sizing Data - Cooling

Zone Name	Total Coil Load (kW)	Sens Coil Load (kW)	Coil Entering DB / WB (°C)	Coil Leaving DB / WB (°C)	Water Flow @ 5,6 K (L/s)	Time of Peak Coil Load	Zone L/(s·m²)
Zone 1	18,6	17,8	24,2 / 18,0	15,3 / 14,7	0,80	Jan 1600	13,94

Terminal Unit Sizing Data - Heating, Fan, Ventilation

Zone Name	Heating Coil Load (kW)	Heating Coil Ent/Lvg DB (°C)	Htg Coil Water Flow @11,1 K (L/s)	Fan Design Airflow (L/s)	Fan Motor (BHP)	Fan Motor (kW)	OA Vent Design Airflow (L/s)
Zone 1	25,2	9,1 / 21,7	0,54	1659	0,000	0,000	1023

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (kW)	Time of Peak Sensible Cooling Load	Zone Heating Load (kW)	Zone Floor Area (m²)
Zone 1	18,9	Mar 1700	1,2	119,0

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (kW)	Time of Peak Sensible Load	Air Flow (L/s)	Heating Load (kW)	Floor Area (m²)	Space L/(s·m²)
Zone 1							
2P 51 SALA DE ESPERA	1	18,9	Mar 1700	1659	1,2	119,0	13,94

Ventilation Sizing Summary for FC-51

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:44p. m.

1. Summary

Ventilation Sizing Method Sum of Space OA Airflows

2. Space Ventilation Analysis

2.1 Zone: Zone 1

Zone Name / Space Name	Mult.	Floor Area (m²)	Maximum Occupants	Maximum Supply Air (L/s)	Required Outdoor Air (L/s/person)	Required Outdoor Air (L/(s·m²))	Required Outdoor Air (L/s)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (L/s)
Zone 1									
2P 51 SALA DE ESPERA	1	119,0	148,8	1659,0	6,00	1,10	0,0	0,0	1023,4
Totals (incl. Space Multipliers)				1659,0					1023,4

Zone Sizing Summary for FC-52

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:44p. m

Air System Information

Air System Name **FC-52**
Equipment Class **TERM**
Air System Type **4P-FC**

Number of zones **1**
Floor Area **119,0** m²
Location **Concepcion, Chile**

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**

Terminal Unit Sizing Data - Cooling

Zone Name	Total Coil Load (kW)	Sens Coil Load (kW)	Coil Entering DB / WB (°C)	Coil Leaving DB / WB (°C)	Water Flow @ 5,6 K (L/s)	Time of Peak Coil Load	Zone L/(s·m²)
Zone 1	18,6	17,8	24,2 / 18,0	15,3 / 14,7	0,80	Jan 1600	13,94

Terminal Unit Sizing Data - Heating, Fan, Ventilation

Zone Name	Heating Coil Load (kW)	Heating Coil Ent/Lvg DB (°C)	Htg Coil Water Flow @11,1 K (L/s)	Fan Design Airflow (L/s)	Fan Motor (BHP)	Fan Motor (kW)	OA Vent Design Airflow (L/s)
Zone 1	25,2	9,1 / 21,7	0,54	1659	0,000	0,000	1023

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (kW)	Time of Peak Sensible Cooling Load	Zone Heating Load (kW)	Zone Floor Area (m²)
Zone 1	18,9	Mar 1700	1,2	119,0

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (kW)	Time of Peak Sensible Load	Air Flow (L/s)	Heating Load (kW)	Floor Area (m²)	Space L/(s·m²)
Zone 1							
2P 51 SALA DE ESPERA	1	18,9	Mar 1700	1659	1,2	119,0	13,94

Ventilation Sizing Summary for FC-52

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:44p. m.

1. Summary

Ventilation Sizing Method Sum of Space OA Airflows

2. Space Ventilation Analysis

2.1 Zone: Zone 1

Zone Name / Space Name	Mult.	Floor Area (m²)	Maximum Occupants	Maximum Supply Air (L/s)	Required Outdoor Air (L/s/person)	Required Outdoor Air (L/(s·m²))	Required Outdoor Air (L/s)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (L/s)
Zone 1									
2P 51 SALA DE ESPERA	1	119,0	148,8	1659,0	6,00	1,10	0,0	0,0	1023,4
Totals (incl. Space Multipliers)				1659,0					1023,4

Zone Sizing Summary for FC-53

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:44p. m

Air System Information

Air System Name **FC-53**
Equipment Class **TERM**
Air System Type **4P-FC**

Number of zones **1**
Floor Area **31,4** m²
Location **Concepcion, Chile**

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**

Terminal Unit Sizing Data - Cooling

Zone Name	Total Coil Load (kW)	Sens Coil Load (kW)	Coil Entering DB / WB (°C)	Coil Leaving DB / WB (°C)	Water Flow @ 5,6 K (L/s)	Time of Peak Coil Load	Zone L/(s·m²)
Zone 1	1,6	1,3	24,9 / 18,3	14,4 / 13,8	0,07	Jan 1500	3,32

Terminal Unit Sizing Data - Heating, Fan, Ventilation

Zone Name	Heating Coil Load (kW)	Heating Coil Ent/Lvg DB (°C)	Htg Coil Water Flow @11,1 K (L/s)	Fan Design Airflow (L/s)	Fan Motor (BHP)	Fan Motor (kW)	OA Vent Design Airflow (L/s)
Zone 1	0,8	14,9 / 21,1	0,02	104	0,000	0,000	33

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (kW)	Time of Peak Sensible Cooling Load	Zone Heating Load (kW)	Zone Floor Area (m²)
Zone 1	1,2	Jan 1900	0,0	31,4

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (kW)	Time of Peak Sensible Load	Air Flow (L/s)	Heating Load (kW)	Floor Area (m²)	Space L/(s·m²)
Zone 1							
2P 52 SOME SATELITAL	1	0,5	Jan 1900	42	0,0	15,4	2,71
2P 53 TRAB CLIN GRUPAL	1	0,7	Jan 1900	62	0,0	16,0	3,90

Ventilation Sizing Summary for FC-53

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:44p. m.

1. Summary

Ventilation Sizing Method Sum of Space OA Airflows

2. Space Ventilation Analysis

2.1 Zone: Zone 1

Zone Name / Space Name	Mult.	Floor Area (m²)	Maximum Occupants	Maximum Supply Air (L/s)	Required Outdoor Air (L/s/person)	Required Outdoor Air (L/(s·m²))	Required Outdoor Air (L/s)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (L/s)
Zone 1									
2P 52 SOME SATELITAL	1	15,4	1,5	41,7	3,00	0,40	0,0	0,0	10,8
2P 53 TRAB CLIN GRUPAL	1	16,0	5,3	62,5	3,00	0,40	0,0	0,0	22,4
Totals (incl. Space Multipliers)				104,2					33,2

Zone Sizing Summary for FC-54

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:44p. m

Air System Information

Air System Name **FC-54**
Equipment Class **TERM**
Air System Type **4P-FC**

Number of zones **1**
Floor Area **20,0** m²
Location **Concepcion, Chile**

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**

Terminal Unit Sizing Data - Cooling

Zone Name	Total Coil Load (kW)	Sens Coil Load (kW)	Coil Entering DB / WB (°C)	Coil Leaving DB / WB (°C)	Water Flow @ 5,6 K (L/s)	Time of Peak Coil Load	Zone L/(s·m²)
Zone 1	1,7	1,7	24,2 / 17,6	15,0 / 14,2	0,07	Feb 1400	7,51

Terminal Unit Sizing Data - Heating, Fan, Ventilation

Zone Name	Heating Coil Load (kW)	Heating Coil Ent/Lvg DB (°C)	Htg Coil Water Flow @11,1 K (L/s)	Fan Design Airflow (L/s)	Fan Motor (BHP)	Fan Motor (kW)	OA Vent Design Airflow (L/s)
Zone 1	2,3	8,5 / 21,5	0,05	150	0,000	0,000	97

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (kW)	Time of Peak Sensible Cooling Load	Zone Heating Load (kW)	Zone Floor Area (m²)
Zone 1	1,7	Mar 1200	0,1	20,0

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (kW)	Time of Peak Sensible Load	Air Flow (L/s)	Heating Load (kW)	Floor Area (m²)	Space L/(s·m²)
Zone 1							
2P 54 BOX GINECOLOGICO	1	1,7	Mar 1200	150	0,1	20,0	7,51

Ventilation Sizing Summary for FC-54

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:44p. m.

1. Summary

Ventilation Sizing Method Sum of Space OA Airflows

2. Space Ventilation Analysis

2.1 Zone: Zone 1

Zone Name / Space Name	Mult.	Floor Area (m²)	Maximum Occupants	Maximum Supply Air (L/s)	Required Outdoor Air (L/s/person)	Required Outdoor Air (L/(s·m²))	Required Outdoor Air (L/s)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (L/s)
Zone 1									
2P 54 BOX GINECOLOGICO	1	20,0	6,7	150,2	10,00	1,50	0,0	0,0	96,7
Totals (incl. Space Multipliers)				150,2					96,7

Zone Sizing Summary for FC-55

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:44p. m

Air System Information

Air System Name **FC-55**
Equipment Class **TERM**
Air System Type **4P-FC**

Number of zones **1**
Floor Area **13,6** m²
Location **Concepcion, Chile**

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**

Terminal Unit Sizing Data - Cooling

Zone Name	Total Coil Load (kW)	Sens Coil Load (kW)	Coil Entering DB / WB (°C)	Coil Leaving DB / WB (°C)	Water Flow @ 5,6 K (L/s)	Time of Peak Coil Load	Zone L/(s·m²)
Zone 1	3,4	3,3	23,8 / 17,5	14,8 / 14,2	0,14	Mar 1200	22,65

Terminal Unit Sizing Data - Heating, Fan, Ventilation

Zone Name	Heating Coil Load (kW)	Heating Coil Ent/Lvg DB (°C)	Htg Coil Water Flow @11,1 K (L/s)	Fan Design Airflow (L/s)	Fan Motor (BHP)	Fan Motor (kW)	OA Vent Design Airflow (L/s)
Zone 1	2,0	17,0 / 22,2	0,04	308	0,000	0,000	66

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (kW)	Time of Peak Sensible Cooling Load	Zone Heating Load (kW)	Zone Floor Area (m²)
Zone 1	3,5	Mar 1200	0,4	13,6

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)
Zone 1							
2P 55 BOX CLINICO	1	3,5	Mar 1200	308	0,4	13,6	22,65

Ventilation Sizing Summary for FC-55

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:44p. m

1. Summary

Ventilation Sizing Method Sum of Space OA Airflows

2. Space Ventilation Analysis

2.1 Zone: Zone 1

Zone Name / Space Name	Mult.	Floor Area (m²)	Maximum Occupants	Maximum Supply Air (L/s)	Required Outdoor Air (L/s/person)	Required Outdoor Air (L/(s·m²))	Required Outdoor Air (L/s)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (L/s)
Zone 1									
2P 55 BOX CLINICO	1	13,6	4,5	308,0	10,00	1,50	0,0	0,0	65,7
Totals (incl. Space Multipliers)				308,0					65,7

Zone Sizing Summary for FC-56

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:44p. m

Air System Information

Air System Name **FC-56**
Equipment Class **TERM**
Air System Type **4P-FC**

Number of zones **1**
Floor Area **36,3** m²
Location **Concepcion, Chile**

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**

Terminal Unit Sizing Data - Cooling

Zone Name	Total Coil Load (kW)	Sens Coil Load (kW)	Coil Entering DB / WB (°C)	Coil Leaving DB / WB (°C)	Water Flow @ 5,6 K (L/s)	Time of Peak Coil Load	Zone L/(s·m²)
Zone 1	6,6	6,5	23,6 / 17,4	14,7 / 14,1	0,28	Mar 1200	16,74

Terminal Unit Sizing Data - Heating, Fan, Ventilation

Zone Name	Heating Coil Load (kW)	Heating Coil Ent/Lvg DB (°C)	Htg Coil Water Flow @11,1 K (L/s)	Fan Design Airflow (L/s)	Fan Motor (BHP)	Fan Motor (kW)	OA Vent Design Airflow (L/s)
Zone 1	5,0	15,6 / 22,5	0,11	608	0,000	0,000	175

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (kW)	Time of Peak Sensible Cooling Load	Zone Heating Load (kW)	Zone Floor Area (m²)
Zone 1	6,9	Mar 1200	0,8	36,3

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)
Zone 1							
2P 56 BOX CLINICO	2	2,3	Mar 1200	203	0,3	12,1	16,74
2P 57 BOX CLINICO	1	2,3	Mar 1200	203	0,3	12,1	16,74

Ventilation Sizing Summary for FC-56

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:44p. m

1. Summary

Ventilation Sizing Method Sum of Space OA Airflows

2. Space Ventilation Analysis

2.1 Zone: Zone 1

Zone Name / Space Name	Mult.	Floor Area (m²)	Maximum Occupants	Maximum Supply Air (L/s)	Required Outdoor Air (L/s/person)	Required Outdoor Air (L/(s·m²))	Required Outdoor Air (L/s)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (L/s)
Zone 1									
2P 56 BOX CLINICO	2	12,1	4,0	202,6	10,00	1,50	0,0	0,0	58,5
2P 57 BOX CLINICO	1	12,1	4,0	202,6	10,00	1,50	0,0	0,0	58,5
Totals (incl. Space Multipliers)				607,7					175,5

Zone Sizing Summary for FC-58

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:44p. m

Air System Information

Air System Name **FC-58**
Equipment Class **TERM**
Air System Type **4P-FC**

Number of zones **1**
Floor Area **12,1** m²
Location **Concepcion, Chile**

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**

Terminal Unit Sizing Data - Cooling

Zone Name	Total Coil Load (kW)	Sens Coil Load (kW)	Coil Entering DB / WB (°C)	Coil Leaving DB / WB (°C)	Water Flow @ 5,6 K (L/s)	Time of Peak Coil Load	Zone L/(s·m²)
Zone 1	2,2	2,1	23,5 / 17,4	14,7 / 14,1	0,09	Mar 1200	16,74

Terminal Unit Sizing Data - Heating, Fan, Ventilation

Zone Name	Heating Coil Load (kW)	Heating Coil Ent/Lvg DB (°C)	Htg Coil Water Flow @11,1 K (L/s)	Fan Design Airflow (L/s)	Fan Motor (BHP)	Fan Motor (kW)	OA Vent Design Airflow (L/s)
Zone 1	1,6	15,3 / 21,7	0,03	203	0,000	0,000	58

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (kW)	Time of Peak Sensible Cooling Load	Zone Heating Load (kW)	Zone Floor Area (m²)
Zone 1	2,3	Mar 1200	0,3	12,1

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)
Zone 1							
2P 58 BOX CLINICO	1	2,3	Mar 1200	203	0,3	12,1	16,74

Ventilation Sizing Summary for FC-58

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:44p. m

1. Summary

Ventilation Sizing Method Sum of Space OA Airflows

2. Space Ventilation Analysis

2.1 Zone: Zone 1

Zone Name / Space Name	Mult.	Floor Area (m²)	Maximum Occupants	Maximum Supply Air (L/s)	Required Outdoor Air (L/s/person)	Required Outdoor Air (L/(s·m²))	Required Outdoor Air (L/s)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (L/s)
Zone 1									
2P 58 BOX CLINICO	1	12,1	4,0	202,6	10,00	1,50	0,0	0,0	58,5
Totals (incl. Space Multipliers)				202,6					58,5

Zone Sizing Summary for FC-59

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:44p. m

Air System Information

Air System Name **FC-59**
Equipment Class **TERM**
Air System Type **4P-FC**

Number of zones **1**
Floor Area **28,8** m²
Location **Concepcion, Chile**

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**

Terminal Unit Sizing Data - Cooling

Zone Name	Total Coil Load (kW)	Sens Coil Load (kW)	Coil Entering DB / WB (°C)	Coil Leaving DB / WB (°C)	Water Flow @ 5,6 K (L/s)	Time of Peak Coil Load	Zone L/(s·m²)
Zone 1	4,9	4,8	24,3 / 17,5	14,4 / 13,8	0,21	Dec 0900	13,93

Terminal Unit Sizing Data - Heating, Fan, Ventilation

Zone Name	Heating Coil Load (kW)	Heating Coil Ent/Lvg DB (°C)	Htg Coil Water Flow @11,1 K (L/s)	Fan Design Airflow (L/s)	Fan Motor (BHP)	Fan Motor (kW)	OA Vent Design Airflow (L/s)
Zone 1	1,1	20,0 / 22,2	0,02	401	0,000	0,000	20

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (kW)	Time of Peak Sensible Cooling Load	Zone Heating Load (kW)	Zone Floor Area (m²)
Zone 1	4,6	Dec 0900	0,7	28,8

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (kW)	Time of Peak Sensible Load	Air Flow (L/s)	Heating Load (kW)	Floor Area (m²)	Space L/(s·m²)
Zone 1							
2P 59 ESTERILIZACION	1	4,6	Dec 0900	401	0,7	28,8	13,93

Ventilation Sizing Summary for FC-59

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:44p. m.

1. Summary

Ventilation Sizing Method Sum of Space OA Airflows

2. Space Ventilation Analysis

2.1 Zone: Zone 1

Zone Name / Space Name	Mult.	Floor Area (m²)	Maximum Occupants	Maximum Supply Air (L/s)	Required Outdoor Air (L/s/person)	Required Outdoor Air (L/(s·m²))	Required Outdoor Air (L/s)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (L/s)
Zone 1									
2P 59 ESTERILIZACION	1	28,8	2,9	401,3	3,00	0,40	0,0	0,0	20,2
Totals (incl. Space Multipliers)				401,3					20,2

Zone Sizing Summary for FC-60

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

Air System Information

Air System Name **FC-60**
Equipment Class **TERM**
Air System Type **4P-FC**

Number of zones **1**
Floor Area **12,0** m²
Location **Concepcion, Chile**

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**

Terminal Unit Sizing Data - Cooling

Zone Name	Total Coil Load (kW)	Sens Coil Load (kW)	Coil Entering DB / WB (°C)	Coil Leaving DB / WB (°C)	Water Flow @ 5,6 K (L/s)	Time of Peak Coil Load	Zone L/(s·m²)
Zone 1	1,8	1,8	24,2 / 18,1	15,7 / 15,1	0,08	Dec 1500	14,65

Terminal Unit Sizing Data - Heating, Fan, Ventilation

Zone Name	Heating Coil Load (kW)	Heating Coil Ent/Lvg DB (°C)	Htg Coil Water Flow @11,1 K (L/s)	Fan Design Airflow (L/s)	Fan Motor (BHP)	Fan Motor (kW)	OA Vent Design Airflow (L/s)
Zone 1	1,6	14,6 / 22,3	0,04	176	0,000	0,000	58

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (kW)	Time of Peak Sensible Cooling Load	Zone Heating Load (kW)	Zone Floor Area (m²)
Zone 1	2,0	Dec 0900	0,3	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)
Zone 1							
2P 60 BOX PSICOLOGO	1	2,0	Dec 0900	176	0,3	12,0	14,65

Ventilation Sizing Summary for FC-60

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:44p. m.

1. Summary

Ventilation Sizing Method Sum of Space OA Airflows

2. Space Ventilation Analysis

2.1 Zone: Zone 1

Zone Name / Space Name	Mult.	Floor Area (m²)	Maximum Occupants	Maximum Supply Air (L/s)	Required Outdoor Air (L/s/person)	Required Outdoor Air (L/(s·m²))	Required Outdoor Air (L/s)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (L/s)
Zone 1									
2P 60 BOX PSICOLOGO	1	12,0	4,0	175,8	10,00	1,50	0,0	0,0	58,0
Totals (incl. Space Multipliers)				175,8					58,0

Zone Sizing Summary for FC-61

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

Air System Information

Air System Name **FC-61**
Equipment Class **TERM**
Air System Type **4P-FC**

Number of zones **1**
Floor Area **24,0** m²
Location **Concepcion, Chile**

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**

Terminal Unit Sizing Data - Cooling

Zone Name	Total Coil Load (kW)	Sens Coil Load (kW)	Coil Entering DB / WB (°C)	Coil Leaving DB / WB (°C)	Water Flow @ 5,6 K (L/s)	Time of Peak Coil Load	Zone L/(s·m ²)
Zone 1	5,5	5,3	22,9 / 17,2	14,6 / 14,1	0,24	Dec 1000	22,06

Terminal Unit Sizing Data - Heating, Fan, Ventilation

Zone Name	Heating Coil Load (kW)	Heating Coil Ent/Lvg DB (°C)	Htg Coil Water Flow @11,1 K (L/s)	Fan Design Airflow (L/s)	Fan Motor (BHP)	Fan Motor (kW)	OA Vent Design Airflow (L/s)
Zone 1	3,6	16,7 / 22,4	0,08	529	0,000	0,000	116

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (kW)	Time of Peak Sensible Cooling Load	Zone Heating Load (kW)	Zone Floor Area (m ²)
Zone 1	5,9	Dec 0900	0,9	24,0

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (kW)	Time of Peak Sensible Load	Air Flow (L/s)	Heating Load (kW)	Floor Area (m ²)	Space L/(s·m ²)
Zone 1							
2P 61 BOX CLINICO	1	2,0	Dec 0900	176	0,3	12,0	14,65
2P 62 BOX CLINICO	1	4,0	Jan 1000	354	0,7	12,0	29,47

Ventilation Sizing Summary for FC-61

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:44p. m.

1. Summary

Ventilation Sizing Method Sum of Space OA Airflows

2. Space Ventilation Analysis

2.1 Zone: Zone 1

Zone Name / Space Name	Mult.	Floor Area (m²)	Maximum Occupants	Maximum Supply Air (L/s)	Required Outdoor Air (L/s/person)	Required Outdoor Air (L/(s·m²))	Required Outdoor Air (L/s)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (L/s)
Zone 1									
2P 61 BOX CLINICO	1	12,0	4,0	175,8	10,00	1,50	0,0	0,0	58,0
2P 62 BOX CLINICO	1	12,0	4,0	353,6	10,00	1,50	0,0	0,0	58,0
Totals (incl. Space Multipliers)				529,4					116,0

Zone Sizing Summary for FC-63

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:44p. m

Air System Information

Air System Name **FC-63**
Equipment Class **TERM**
Air System Type **4P-FC**

Number of zones **1**
Floor Area **24,2** m²
Location **Concepcion, Chile**

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**

Terminal Unit Sizing Data - Cooling

Zone Name	Total Coil Load (kW)	Sens Coil Load (kW)	Coil Entering DB / WB (°C)	Coil Leaving DB / WB (°C)	Water Flow @ 5,6 K (L/s)	Time of Peak Coil Load	Zone L/(s·m²)
Zone 1	7,5	7,2	24,1 / 17,7	14,8 / 14,2	0,32	Dec 1700	26,59

Terminal Unit Sizing Data - Heating, Fan, Ventilation

Zone Name	Heating Coil Load (kW)	Heating Coil Ent/Lvg DB (°C)	Htg Coil Water Flow @11,1 K (L/s)	Fan Design Airflow (L/s)	Fan Motor (BHP)	Fan Motor (kW)	OA Vent Design Airflow (L/s)
Zone 1	3,7	17,4 / 22,1	0,08	644	0,000	0,000	117

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (kW)	Time of Peak Sensible Cooling Load	Zone Heating Load (kW)	Zone Floor Area (m²)
Zone 1	7,2	Dec 1700	1,0	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)
Zone 1							
3P 63 BOX CLINICO	1	4,8	Jan 1700	424	0,7	12,0	35,34
3P 64 BOX CLINICO	1	2,5	Dec 1800	219	0,3	12,2	17,99

Ventilation Sizing Summary for FC-63

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:44p. m.

1. Summary

Ventilation Sizing Method Sum of Space OA Airflows

2. Space Ventilation Analysis

2.1 Zone: Zone 1

Zone Name / Space Name	Mult.	Floor Area (m²)	Maximum Occupants	Maximum Supply Air (L/s)	Required Outdoor Air (L/s/person)	Required Outdoor Air (L/(s·m²))	Required Outdoor Air (L/s)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (L/s)
Zone 1									
3P 63 BOX CLINICO	1	12,0	4,0	424,1	10,00	1,50	0,0	0,0	58,0
3P 64 BOX CLINICO	1	12,2	4,1	219,5	10,00	1,50	0,0	0,0	59,0
Totals (incl. Space Multipliers)				643,6					117,0

Zone Sizing Summary for FC-65

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:44p. m

Air System Information

Air System Name **FC-65**
Equipment Class **TERM**
Air System Type **4P-FC**

Number of zones **1**
Floor Area **24,4** m²
Location **Concepcion, Chile**

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**

Terminal Unit Sizing Data - Cooling

Zone Name	Total Coil Load (kW)	Sens Coil Load (kW)	Coil Entering DB / WB (°C)	Coil Leaving DB / WB (°C)	Water Flow @ 5,6 K (L/s)	Time of Peak Coil Load	Zone L/(s·m²)
Zone 1	4,8	4,7	23,8 / 17,7	15,0 / 14,4	0,21	Dec 1800	17,99

Terminal Unit Sizing Data - Heating, Fan, Ventilation

Zone Name	Heating Coil Load (kW)	Heating Coil Ent/Lvg DB (°C)	Htg Coil Water Flow @11,1 K (L/s)	Fan Design Airflow (L/s)	Fan Motor (BHP)	Fan Motor (kW)	OA Vent Design Airflow (L/s)
Zone 1	3,4	15,7 / 22,1	0,07	439	0,000	0,000	118

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (kW)	Time of Peak Sensible Cooling Load	Zone Heating Load (kW)	Zone Floor Area (m²)
Zone 1	5,0	Dec 1800	0,7	24,4

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (kW)	Time of Peak Sensible Load	Air Flow (L/s)	Heating Load (kW)	Floor Area (m²)	Space L/(s·m²)
Zone 1							
3P 65 BOX CLINICO	1	2,5	Dec 1800	219	0,3	12,2	17,99
3P 66 BOX CLINICO	1	2,5	Dec 1800	219	0,3	12,2	17,99

Ventilation Sizing Summary for FC-65

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:44p. m.

1. Summary

Ventilation Sizing Method Sum of Space OA Airflows

2. Space Ventilation Analysis

2.1 Zone: Zone 1

Zone Name / Space Name	Mult.	Floor Area (m²)	Maximum Occupants	Maximum Supply Air (L/s)	Required Outdoor Air (L/s/person)	Required Outdoor Air (L/(s·m²))	Required Outdoor Air (L/s)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (L/s)
Zone 1									
3P 65 BOX CLINICO	1	12,2	4,1	219,5	10,00	1,50	0,0	0,0	59,0
3P 66 BOX CLINICO	1	12,2	4,1	219,5	10,00	1,50	0,0	0,0	59,0
Totals (incl. Space Multipliers)				438,9					117,9

Zone Sizing Summary for FC-67

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:44p. m

Air System Information

Air System Name **FC-67**
Equipment Class **TERM**
Air System Type **4P-FC**

Number of zones **1**
Floor Area **24,2** m²
Location **Concepcion, Chile**

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**

Terminal Unit Sizing Data - Cooling

Zone Name	Total Coil Load (kW)	Sens Coil Load (kW)	Coil Entering DB / WB (°C)	Coil Leaving DB / WB (°C)	Water Flow @ 5,6 K (L/s)	Time of Peak Coil Load	Zone L/(s·m²)
Zone 1	5,0	4,8	24,0 / 17,7	15,0 / 14,4	0,21	Dec 1700	18,10

Terminal Unit Sizing Data - Heating, Fan, Ventilation

Zone Name	Heating Coil Load (kW)	Heating Coil Ent/Lvg DB (°C)	Htg Coil Water Flow @11,1 K (L/s)	Fan Design Airflow (L/s)	Fan Motor (BHP)	Fan Motor (kW)	OA Vent Design Airflow (L/s)
Zone 1	3,3	15,8 / 22,1	0,07	438	0,000	0,000	117

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (kW)	Time of Peak Sensible Cooling Load	Zone Heating Load (kW)	Zone Floor Area (m²)
Zone 1	5,0	Dec 1800	0,7	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)
Zone 1							
3P 67 BOX CLINICO	1	2,5	Dec 1800	219	0,3	12,0	18,22
3P 68 BOX CLINICO	1	2,5	Dec 1800	219	0,3	12,2	17,99

Ventilation Sizing Summary for FC-67

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:44p. m.

1. Summary

Ventilation Sizing Method Sum of Space OA Airflows

2. Space Ventilation Analysis

2.1 Zone: Zone 1

Zone Name / Space Name	Mult.	Floor Area (m²)	Maximum Occupants	Maximum Supply Air (L/s)	Required Outdoor Air (L/s/person)	Required Outdoor Air (L/(s·m²))	Required Outdoor Air (L/s)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (L/s)
Zone 1									
3P 67 BOX CLINICO	1	12,0	4,0	218,6	10,00	1,50	0,0	0,0	58,0
3P 68 BOX CLINICO	1	12,2	4,1	219,5	10,00	1,50	0,0	0,0	59,0
Totals (incl. Space Multipliers)				438,1					117,0

Zone Sizing Summary for FC-69

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:44p. m

Air System Information

Air System Name **FC-69**
Equipment Class **TERM**
Air System Type **4P-FC**

Number of zones **1**
Floor Area **29,8** m²
Location **Concepcion, Chile**

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**

Terminal Unit Sizing Data - Cooling

Zone Name	Total Coil Load (kW)	Sens Coil Load (kW)	Coil Entering DB / WB (°C)	Coil Leaving DB / WB (°C)	Water Flow @ 5,6 K (L/s)	Time of Peak Coil Load	Zone L/(s·m²)
Zone 1	8,5	8,3	24,2 / 17,7	14,8 / 14,2	0,36	Mar 1600	24,57

Terminal Unit Sizing Data - Heating, Fan, Ventilation

Zone Name	Heating Coil Load (kW)	Heating Coil Ent/Lvg DB (°C)	Htg Coil Water Flow @11,1 K (L/s)	Fan Design Airflow (L/s)	Fan Motor (BHP)	Fan Motor (kW)	OA Vent Design Airflow (L/s)
Zone 1	4,5	17,2 / 22,4	0,10	732	0,000	0,000	144

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (kW)	Time of Peak Sensible Cooling Load	Zone Heating Load (kW)	Zone Floor Area (m²)
Zone 1	8,3	Mar 1600	1,2	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)
Zone 1							
3P 69 BOX DENTAL	1	3,0	Mar 1600	261	0,3	14,9	17,54
3P 70 BOX DENTAL	1	5,4	Mar 1600	471	0,8	14,9	31,60

Ventilation Sizing Summary for FC-69

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:44p. m.

1. Summary

Ventilation Sizing Method Sum of Space OA Airflows

2. Space Ventilation Analysis

2.1 Zone: Zone 1

Zone Name / Space Name	Mult.	Floor Area (m²)	Maximum Occupants	Maximum Supply Air (L/s)	Required Outdoor Air (L/s/person)	Required Outdoor Air (L/(s·m²))	Required Outdoor Air (L/s)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (L/s)
Zone 1									
3P 69 BOX DENTAL	1	14,9	5,0	261,4	10,00	1,50	0,0	0,0	72,0
3P 70 BOX DENTAL	1	14,9	5,0	470,8	10,00	1,50	0,0	0,0	72,0
Totals (incl. Space Multipliers)				732,2					144,0

Zone Sizing Summary for FC-71

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:44p. m

Air System Information

Air System Name **FC-71**
Equipment Class **TERM**
Air System Type **4P-FC**

Number of zones **1**
Floor Area **30,8** m²
Location **Concepcion, Chile**

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**

Terminal Unit Sizing Data - Cooling

Zone Name	Total Coil Load (kW)	Sens Coil Load (kW)	Coil Entering DB / WB (°C)	Coil Leaving DB / WB (°C)	Water Flow @ 5,6 K (L/s)	Time of Peak Coil Load	Zone L/(s·m²)
Zone 1	1,8	1,5	24,9 / 18,2	14,4 / 13,8	0,08	Jan 1500	3,92

Terminal Unit Sizing Data - Heating, Fan, Ventilation

Zone Name	Heating Coil Load (kW)	Heating Coil Ent/Lvg DB (°C)	Htg Coil Water Flow @11,1 K (L/s)	Fan Design Airflow (L/s)	Fan Motor (BHP)	Fan Motor (kW)	OA Vent Design Airflow (L/s)
Zone 1	0,9	15,9 / 22,0	0,02	121	0,000	0,000	32

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (kW)	Time of Peak Sensible Cooling Load	Zone Heating Load (kW)	Zone Floor Area (m²)
Zone 1	1,4	Dec 1500	0,1	30,8

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (kW)	Time of Peak Sensible Load	Air Flow (L/s)	Heating Load (kW)	Floor Area (m²)	Space L/(s·m²)
Zone 1							
3P 71 TRABAJ CLINIC GRUP	1	0,8	Jan 1600	69	0,1	15,4	4,48
3P 72 SOME SATELITE	1	0,6	Dec 1500	52	0,1	15,4	3,36

Ventilation Sizing Summary for FC-71

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:44p. m.

1. Summary

Ventilation Sizing Method Sum of Space OA Airflows

2. Space Ventilation Analysis

2.1 Zone: Zone 1

Zone Name / Space Name	Mult.	Floor Area (m²)	Maximum Occupants	Maximum Supply Air (L/s)	Required Outdoor Air (L/s/person)	Required Outdoor Air (L/(s·m²))	Required Outdoor Air (L/s)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (L/s)
Zone 1									
3P 71 TRABAJ CLINIC GRUP	1	15,4	5,1	69,0	3,00	0,40	0,0	0,0	21,6
3P 72 SOME SATELITE	1	15,4	1,5	51,7	3,00	0,40	0,0	0,0	10,8
Totals (incl. Space Multipliers)				120,8					32,3

Zone Sizing Summary for FC-72

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:44p. m

Air System Information

Air System Name **FC-72**
Equipment Class **TERM**
Air System Type **4P-FC**

Number of zones **1**
Floor Area **100,0** m²
Location **Concepcion, Chile**

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**

Terminal Unit Sizing Data - Cooling

Zone Name	Total Coil Load (kW)	Sens Coil Load (kW)	Coil Entering DB / WB (°C)	Coil Leaving DB / WB (°C)	Water Flow @ 5,6 K (L/s)	Time of Peak Coil Load	Zone L/(s·m²)
Zone 1	20,3	18,3	24,3 / 18,0	14,9 / 14,3	0,87	Feb 1600	16,20

Terminal Unit Sizing Data - Heating, Fan, Ventilation

Zone Name	Heating Coil Load (kW)	Heating Coil Ent/Lvg DB (°C)	Htg Coil Water Flow @11,1 K (L/s)	Fan Design Airflow (L/s)	Fan Motor (BHP)	Fan Motor (kW)	OA Vent Design Airflow (L/s)
Zone 1	21,8	10,7 / 21,9	0,47	1620	0,000	0,000	860

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (kW)	Time of Peak Sensible Cooling Load	Zone Heating Load (kW)	Zone Floor Area (m²)
Zone 1	18,4	Mar 1600	2,0	100,0

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (kW)	Time of Peak Sensible Load	Air Flow (L/s)	Heating Load (kW)	Floor Area (m²)	Space L/(s·m²)
Zone 1							
3P 73 SALA DE ESPERA	1	18,4	Mar 1600	1620	2,0	100,0	16,20

Ventilation Sizing Summary for FC-72

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:44p. m.

1. Summary

Ventilation Sizing Method Sum of Space OA Airflows

2. Space Ventilation Analysis

2.1 Zone: Zone 1

Zone Name / Space Name	Mult.	Floor Area (m²)	Maximum Occupants	Maximum Supply Air (L/s)	Required Outdoor Air (L/s/person)	Required Outdoor Air (L/(s·m²))	Required Outdoor Air (L/s)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (L/s)
Zone 1									
3P 73 SALA DE ESPERA	1	100,0	125,0	1619,8	6,00	1,10	0,0	0,0	860,0
Totals (incl. Space Multipliers)				1619,8					860,0

Zone Sizing Summary for FC-73

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:44p. m

Air System Information

Air System Name **FC-73**
Equipment Class **TERM**
Air System Type **4P-FC**

Number of zones **1**
Floor Area **100,0** m²
Location **Concepcion, Chile**

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**

Terminal Unit Sizing Data - Cooling

Zone Name	Total Coil Load (kW)	Sens Coil Load (kW)	Coil Entering DB / WB (°C)	Coil Leaving DB / WB (°C)	Water Flow @ 5,6 K (L/s)	Time of Peak Coil Load	Zone L/(s·m²)
Zone 1	20,3	18,3	24,3 / 18,0	14,9 / 14,3	0,87	Feb 1600	16,20

Terminal Unit Sizing Data - Heating, Fan, Ventilation

Zone Name	Heating Coil Load (kW)	Heating Coil Ent/Lvg DB (°C)	Htg Coil Water Flow @11,1 K (L/s)	Fan Design Airflow (L/s)	Fan Motor (BHP)	Fan Motor (kW)	OA Vent Design Airflow (L/s)
Zone 1	21,8	10,7 / 21,9	0,47	1620	0,000	0,000	860

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (kW)	Time of Peak Sensible Cooling Load	Zone Heating Load (kW)	Zone Floor Area (m²)
Zone 1	18,4	Mar 1600	2,0	100,0

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (kW)	Time of Peak Sensible Load	Air Flow (L/s)	Heating Load (kW)	Floor Area (m²)	Space L/(s·m²)
Zone 1							
3P 73 SALA DE ESPERA	1	18,4	Mar 1600	1620	2,0	100,0	16,20

Ventilation Sizing Summary for FC-73

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:44p. m

1. Summary

Ventilation Sizing Method Sum of Space OA Airflows

2. Space Ventilation Analysis

2.1 Zone: Zone 1

Zone Name / Space Name	Mult.	Floor Area (m²)	Maximum Occupants	Maximum Supply Air (L/s)	Required Outdoor Air (L/s/person)	Required Outdoor Air (L/(s·m²))	Required Outdoor Air (L/s)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (L/s)
Zone 1									
3P 73 SALA DE ESPERA	1	100,0	125,0	1619,8	6,00	1,10	0,0	0,0	860,0
Totals (incl. Space Multipliers)				1619,8					860,0

Zone Sizing Summary for FC-74

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:44p. m

Air System Information

Air System Name **FC-74**
Equipment Class **TERM**
Air System Type **4P-FC**

Number of zones **1**
Floor Area **24,0** m²
Location **Concepcion, Chile**

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**

Terminal Unit Sizing Data - Cooling

Zone Name	Total Coil Load (kW)	Sens Coil Load (kW)	Coil Entering DB / WB (°C)	Coil Leaving DB / WB (°C)	Water Flow @ 5,6 K (L/s)	Time of Peak Coil Load	Zone L/(s·m²)
Zone 1	5,8	5,7	24,2 / 18,0	15,4 / 14,8	0,25	Dec 1600	22,44

Terminal Unit Sizing Data - Heating, Fan, Ventilation

Zone Name	Heating Coil Load (kW)	Heating Coil Ent/Lvg DB (°C)	Htg Coil Water Flow @11,1 K (L/s)	Fan Design Airflow (L/s)	Fan Motor (BHP)	Fan Motor (kW)	OA Vent Design Airflow (L/s)
Zone 1	3,8	17,0 / 22,8	0,08	539	0,000	0,000	116

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (kW)	Time of Peak Sensible Cooling Load	Zone Heating Load (kW)	Zone Floor Area (m²)
Zone 1	5,8	Dec 1700	1,0	24,0

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (kW)	Time of Peak Sensible Load	Air Flow (L/s)	Heating Load (kW)	Floor Area (m²)	Space L/(s·m²)
Zone 1							
3P 74 BOX CLINICO	1	4,1	Dec 1800	361	0,7	12,0	30,07
3P 75 BOX CLINICO	1	2,0	Dec 0900	178	0,3	12,0	14,81

Ventilation Sizing Summary for FC-74

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:44p. m

1. Summary

Ventilation Sizing Method Sum of Space OA Airflows

2. Space Ventilation Analysis

2.1 Zone: Zone 1

Zone Name / Space Name	Mult.	Floor Area (m²)	Maximum Occupants	Maximum Supply Air (L/s)	Required Outdoor Air (L/s/person)	Required Outdoor Air (L/(s·m²))	Required Outdoor Air (L/s)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (L/s)
Zone 1									
3P 74 BOX CLINICO	1	12,0	4,0	360,9	10,00	1,50	0,0	0,0	58,0
3P 75 BOX CLINICO	1	12,0	4,0	177,8	10,00	1,50	0,0	0,0	58,0
Totals (incl. Space Multipliers)				538,7					116,0

Zone Sizing Summary for FC-76

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:44p. m

Air System Information

Air System Name **FC-76**
Equipment Class **TERM**
Air System Type **4P-FC**

Number of zones **1**
Floor Area **12,0** m²
Location **Concepcion, Chile**

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**

Terminal Unit Sizing Data - Cooling

Zone Name	Total Coil Load (kW)	Sens Coil Load (kW)	Coil Entering DB / WB (°C)	Coil Leaving DB / WB (°C)	Water Flow @ 5,6 K (L/s)	Time of Peak Coil Load	Zone L/(s·m²)
Zone 1	1,8	1,8	24,4 / 18,2	15,9 / 15,2	0,08	Dec 1500	14,81

Terminal Unit Sizing Data - Heating, Fan, Ventilation

Zone Name	Heating Coil Load (kW)	Heating Coil Ent/Lvg DB (°C)	Htg Coil Water Flow @11,1 K (L/s)	Fan Design Airflow (L/s)	Fan Motor (BHP)	Fan Motor (kW)	OA Vent Design Airflow (L/s)
Zone 1	1,6	14,6 / 22,3	0,04	178	0,000	0,000	58

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (kW)	Time of Peak Sensible Cooling Load	Zone Heating Load (kW)	Zone Floor Area (m²)
Zone 1	2,0	Dec 0900	0,3	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)
Zone 1							
3P 76 BOX PSICOLOGO	1	2,0	Dec 0900	178	0,3	12,0	14,81

Ventilation Sizing Summary for FC-76

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:44p. m.

1. Summary

Ventilation Sizing Method Sum of Space OA Airflows

2. Space Ventilation Analysis

2.1 Zone: Zone 1

Zone Name / Space Name	Mult.	Floor Area (m²)	Maximum Occupants	Maximum Supply Air (L/s)	Required Outdoor Air (L/s/person)	Required Outdoor Air (L/(s·m²))	Required Outdoor Air (L/s)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (L/s)
Zone 1									
3P 76 BOX PSICOLOGO	1	12,0	4,0	177,8	10,00	1,50	0,0	0,0	58,0
Totals (incl. Space Multipliers)				177,8					58,0

Zone Sizing Summary for FC-77

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

Air System Information

Air System Name **FC-77**
Equipment Class **TERM**
Air System Type **4P-FC**

Number of zones **1**
Floor Area **17,8** m²
Location **Concepcion, Chile**

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**

Terminal Unit Sizing Data - Cooling

Zone Name	Total Coil Load (kW)	Sens Coil Load (kW)	Coil Entering DB / WB (°C)	Coil Leaving DB / WB (°C)	Water Flow @ 5,6 K (L/s)	Time of Peak Coil Load	Zone L/(s·m ²)
Zone 1	3,1	3,1	24,3 / 18,2	15,9 / 15,2	0,13	Dec 1400	17,08

Terminal Unit Sizing Data - Heating, Fan, Ventilation

Zone Name	Heating Coil Load (kW)	Heating Coil Ent/Lvg DB (°C)	Htg Coil Water Flow @11,1 K (L/s)	Fan Design Airflow (L/s)	Fan Motor (BHP)	Fan Motor (kW)	OA Vent Design Airflow (L/s)
Zone 1	2,5	15,4 / 22,4	0,05	304	0,000	0,000	86

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (kW)	Time of Peak Sensible Cooling Load	Zone Heating Load (kW)	Zone Floor Area (m ²)
Zone 1	3,5	Dec 0900	0,6	17,8

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (kW)	Time of Peak Sensible Load	Air Flow (L/s)	Heating Load (kW)	Floor Area (m ²)	Space L/(s·m ²)
Zone 1							
3P 77 BOX GINECOLOGICO	1	3,5	Dec 0900	304	0,6	17,8	17,08

Ventilation Sizing Summary for FC-77

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:44p. m.

1. Summary

Ventilation Sizing Method Sum of Space OA Airflows

2. Space Ventilation Analysis

2.1 Zone: Zone 1

Zone Name / Space Name	Mult.	Floor Area (m²)	Maximum Occupants	Maximum Supply Air (L/s)	Required Outdoor Air (L/s/person)	Required Outdoor Air (L/(s·m²))	Required Outdoor Air (L/s)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (L/s)
Zone 1									
3P 77 BOX GINECOLOGICO	1	17,8	5,9	304,0	10,00	1,50	0,0	0,0	86,0
Totals (incl. Space Multipliers)				304,0					86,0

Zone Sizing Summary for FC-78

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

Air System Information

Air System Name **FC-78**
Equipment Class **TERM**
Air System Type **4P-FC**

Number of zones **1**
Floor Area **50,0** m²
Location **Concepcion, Chile**

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**

Terminal Unit Sizing Data - Cooling

Zone Name	Total Coil Load (kW)	Sens Coil Load (kW)	Coil Entering DB / WB (°C)	Coil Leaving DB / WB (°C)	Water Flow @ 5,6 K (L/s)	Time of Peak Coil Load	Zone L/(s·m ²)
Zone 1	13,9	12,3	24,2 / 18,0	14,8 / 14,2	0,60	Mar 1600	21,67

Terminal Unit Sizing Data - Heating, Fan, Ventilation

Zone Name	Heating Coil Load (kW)	Heating Coil Ent/Lvg DB (°C)	Htg Coil Water Flow @11,1 K (L/s)	Fan Design Airflow (L/s)	Fan Motor (BHP)	Fan Motor (kW)	OA Vent Design Airflow (L/s)
Zone 1	6,3	17,5 / 22,3	0,14	1083	0,000	0,000	203

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (kW)	Time of Peak Sensible Cooling Load	Zone Heating Load (kW)	Zone Floor Area (m ²)
Zone 1	12,3	Mar 1600	1,5	50,0

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (kW)	Time of Peak Sensible Load	Air Flow (L/s)	Heating Load (kW)	Floor Area (m ²)	Space L/(s·m ²)
Zone 1							
3P 78 CAFETERIA	1	12,3	Mar 1600	1083	1,5	50,0	21,67

Ventilation Sizing Summary for FC-78

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:44p. m.

1. Summary

Ventilation Sizing Method Sum of Space OA Airflows

2. Space Ventilation Analysis

2.1 Zone: Zone 1

Zone Name / Space Name	Mult.	Floor Area (m²)	Maximum Occupants	Maximum Supply Air (L/s)	Required Outdoor Air (L/s/person)	Required Outdoor Air (L/(s·m²))	Required Outdoor Air (L/s)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (L/s)
Zone 1									
3P 78 CAFETERIA	1	50,0	41,7	1083,4	3,80	0,90	0,0	0,0	203,3
Totals (incl. Space Multipliers)				1083,4					203,3

Zone Sizing Summary for FC-79

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:44p. m

Air System Information

Air System Name **FC-79**
Equipment Class **TERM**
Air System Type **4P-FC**

Number of zones **1**
Floor Area **8,1** m²
Location **Concepcion, Chile**

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**

Terminal Unit Sizing Data - Cooling

Zone Name	Total Coil Load (kW)	Sens Coil Load (kW)	Coil Entering DB / WB (°C)	Coil Leaving DB / WB (°C)	Water Flow @ 5,6 K (L/s)	Time of Peak Coil Load	Zone L/(s·m²)
Zone 1	1,4	1,4	24,3 / 17,5	14,4 / 13,8	0,06	Mar 1200	14,10

Terminal Unit Sizing Data - Heating, Fan, Ventilation

Zone Name	Heating Coil Load (kW)	Heating Coil Ent/Lvg DB (°C)	Htg Coil Water Flow @11,1 K (L/s)	Fan Design Airflow (L/s)	Fan Motor (BHP)	Fan Motor (kW)	OA Vent Design Airflow (L/s)
Zone 1	0,3	20,2 / 22,5	0,01	114	0,000	0,000	6

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (kW)	Time of Peak Sensible Cooling Load	Zone Heating Load (kW)	Zone Floor Area (m²)
Zone 1	1,3	Mar 1200	0,2	8,1

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)
Zone 1							
3P 79 SALA LAC FUNC	1	1,3	Mar 1200	114	0,2	8,1	14,10

Ventilation Sizing Summary for FC-79

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:44p. m.

1. Summary

Ventilation Sizing Method Sum of Space OA Airflows

2. Space Ventilation Analysis

2.1 Zone: Zone 1

Zone Name / Space Name	Mult.	Floor Area (m²)	Maximum Occupants	Maximum Supply Air (L/s)	Required Outdoor Air (L/s/person)	Required Outdoor Air (L/(s·m²))	Required Outdoor Air (L/s)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (L/s)
Zone 1									
3P 79 SALA LAC FUNC	1	8,1	0,8	114,2	3,00	0,40	0,0	0,0	5,7
Totals (incl. Space Multipliers)				114,2					5,7

Zone Sizing Summary for FC-80

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:44p. m

Air System Information

Air System Name **FC-80**
Equipment Class **TERM**
Air System Type **4P-FC**

Number of zones **1**
Floor Area **19,8** m²
Location **Concepcion, Chile**

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**

Terminal Unit Sizing Data - Cooling

Zone Name	Total Coil Load (kW)	Sens Coil Load (kW)	Coil Entering DB / WB (°C)	Coil Leaving DB / WB (°C)	Water Flow @ 5,6 K (L/s)	Time of Peak Coil Load	Zone L/(s·m²)
Zone 1	2,9	2,8	24,2 / 17,5	14,4 / 13,8	0,12	Feb 1100	11,94

Terminal Unit Sizing Data - Heating, Fan, Ventilation

Zone Name	Heating Coil Load (kW)	Heating Coil Ent/Lvg DB (°C)	Htg Coil Water Flow @11,1 K (L/s)	Fan Design Airflow (L/s)	Fan Motor (BHP)	Fan Motor (kW)	OA Vent Design Airflow (L/s)
Zone 1	0,7	20,0 / 22,5	0,02	236	0,000	0,000	14

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (kW)	Time of Peak Sensible Cooling Load	Zone Heating Load (kW)	Zone Floor Area (m²)
Zone 1	2,7	Mar 1200	0,4	19,8

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (kW)	Time of Peak Sensible Load	Air Flow (L/s)	Heating Load (kW)	Floor Area (m²)	Space L/(s·m²)
Zone 1							
3P 80 OFICINA TEC SIGGES	1	2,7	Mar 1200	236	0,4	19,8	11,94

Ventilation Sizing Summary for FC-80

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:44p. m.

1. Summary

Ventilation Sizing Method Sum of Space OA Airflows

2. Space Ventilation Analysis

2.1 Zone: Zone 1

Zone Name / Space Name	Mult.	Floor Area (m²)	Maximum Occupants	Maximum Supply Air (L/s)	Required Outdoor Air (L/s/person)	Required Outdoor Air (L/(s·m²))	Required Outdoor Air (L/s)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (L/s)
Zone 1									
3P 80 OFICINA TEC SIGGES	1	19,8	2,0	236,4	3,00	0,40	0,0	0,0	13,9
Totals (incl. Space Multipliers)				236,4					13,9

Zone Sizing Summary for FC-81

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:44p. m

Air System Information

Air System Name **FC-81**
Equipment Class **TERM**
Air System Type **4P-FC**

Number of zones **1**
Floor Area **23,0** m²
Location **Concepcion, Chile**

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**

Terminal Unit Sizing Data - Cooling

Zone Name	Total Coil Load (kW)	Sens Coil Load (kW)	Coil Entering DB / WB (°C)	Coil Leaving DB / WB (°C)	Water Flow @ 5,6 K (L/s)	Time of Peak Coil Load	Zone L/(s·m²)
Zone 1	3,4	3,3	24,6 / 17,8	14,9 / 14,3	0,15	Mar 1200	12,41

Terminal Unit Sizing Data - Heating, Fan, Ventilation

Zone Name	Heating Coil Load (kW)	Heating Coil Ent/Lvg DB (°C)	Htg Coil Water Flow @11,1 K (L/s)	Fan Design Airflow (L/s)	Fan Motor (BHP)	Fan Motor (kW)	OA Vent Design Airflow (L/s)
Zone 1	0,8	20,0 / 22,3	0,02	286	0,000	0,000	16

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (kW)	Time of Peak Sensible Cooling Load	Zone Heating Load (kW)	Zone Floor Area (m²)
Zone 1	3,2	Mar 1200	0,4	23,0

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (kW)	Time of Peak Sensible Load	Air Flow (L/s)	Heating Load (kW)	Floor Area (m²)	Space L/(s·m²)
Zone 1							
3P 81 SALA INFORMES PRO	1	3,2	Mar 1200	286	0,4	23,0	12,41

Ventilation Sizing Summary for FC-81

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:44p. m.

1. Summary

Ventilation Sizing Method Sum of Space OA Airflows

2. Space Ventilation Analysis

2.1 Zone: Zone 1

Zone Name / Space Name	Mult.	Floor Area (m²)	Maximum Occupants	Maximum Supply Air (L/s)	Required Outdoor Air (L/s/person)	Required Outdoor Air (L/(s·m²))	Required Outdoor Air (L/s)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (L/s)
Zone 1									
3P 81 SALA INFORMES PRO	1	23,0	2,3	285,5	3,00	0,40	0,0	0,0	16,1
Totals (incl. Space Multipliers)				285,5					16,1

Zone Sizing Summary for FC-83

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:44p. m

Air System Information

Air System Name **FC-83**
Equipment Class **TERM**
Air System Type **4P-FC**

Number of zones **1**
Floor Area **6,6** m²
Location **Concepcion, Chile**

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**

Terminal Unit Sizing Data - Cooling

Zone Name	Total Coil Load (kW)	Sens Coil Load (kW)	Coil Entering DB / WB (°C)	Coil Leaving DB / WB (°C)	Water Flow @ 5,6 K (L/s)	Time of Peak Coil Load	Zone L/(s·m²)
Zone 1	2,6	2,5	24,4 / 17,6	14,8 / 14,1	0,11	Mar 1100	33,18

Terminal Unit Sizing Data - Heating, Fan, Ventilation

Zone Name	Heating Coil Load (kW)	Heating Coil Ent/Lvg DB (°C)	Htg Coil Water Flow @11,1 K (L/s)	Fan Design Airflow (L/s)	Fan Motor (BHP)	Fan Motor (kW)	OA Vent Design Airflow (L/s)
Zone 1	0,5	20,7 / 22,4	0,01	219	0,000	0,000	5

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (kW)	Time of Peak Sensible Cooling Load	Zone Heating Load (kW)	Zone Floor Area (m²)
Zone 1	2,5	Mar 1200	0,3	6,6

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)
Zone 1							
3P 83 SALA TIC	1	2,5	Mar 1200	219	0,3	6,6	33,18

Ventilation Sizing Summary for FC-83

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:44p. m

1. Summary

Ventilation Sizing Method Sum of Space OA Airflows

2. Space Ventilation Analysis

2.1 Zone: Zone 1

Zone Name / Space Name	Mult.	Floor Area (m²)	Maximum Occupants	Maximum Supply Air (L/s)	Required Outdoor Air (L/s/person)	Required Outdoor Air (L/(s·m²))	Required Outdoor Air (L/s)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (L/s)
Zone 1									
3P 83 SALA TIC	1	6,6	0,7	219,0	3,00	0,40	0,0	0,0	4,6
Totals (incl. Space Multipliers)				219,0					4,6

Zone Sizing Summary for FC-84

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:44p. m

Air System Information

Air System Name **FC-84**
Equipment Class **TERM**
Air System Type **4P-FC**

Number of zones **1**
Floor Area **11,7** m²
Location **Concepcion, Chile**

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**

Terminal Unit Sizing Data - Cooling

Zone Name	Total Coil Load (kW)	Sens Coil Load (kW)	Coil Entering DB / WB (°C)	Coil Leaving DB / WB (°C)	Water Flow @ 5,6 K (L/s)	Time of Peak Coil Load	Zone L/(s·m²)
Zone 1	2,0	2,0	24,3 / 17,5	14,4 / 13,8	0,09	Dec 0900	14,18

Terminal Unit Sizing Data - Heating, Fan, Ventilation

Zone Name	Heating Coil Load (kW)	Heating Coil Ent/Lvg DB (°C)	Htg Coil Water Flow @11,1 K (L/s)	Fan Design Airflow (L/s)	Fan Motor (BHP)	Fan Motor (kW)	OA Vent Design Airflow (L/s)
Zone 1	0,5	19,9 / 22,5	0,01	166	0,000	0,000	8

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (kW)	Time of Peak Sensible Cooling Load	Zone Heating Load (kW)	Zone Floor Area (m²)
Zone 1	1,9	Dec 0900	0,3	11,7

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)
Zone 1							
3P 84 OF LINEA 800	1	1,9	Dec 0900	166	0,3	11,7	14,18

Ventilation Sizing Summary for FC-84

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:44p. m

1. Summary

Ventilation Sizing Method Sum of Space OA Airflows

2. Space Ventilation Analysis

2.1 Zone: Zone 1

Zone Name / Space Name	Mult.	Floor Area (m²)	Maximum Occupants	Maximum Supply Air (L/s)	Required Outdoor Air (L/s/person)	Required Outdoor Air (L/(s·m²))	Required Outdoor Air (L/s)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (L/s)
Zone 1									
3P 84 OF LINEA 800	1	11,7	1,2	165,9	3,00	0,40	0,0	0,0	8,2
Totals (incl. Space Multipliers)				165,9					8,2

Zone Sizing Summary for FC-85

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:44p. m

Air System Information

Air System Name **FC-85**
Equipment Class **TERM**
Air System Type **4P-FC**

Number of zones **1**
Floor Area **9,8** m²
Location **Concepcion, Chile**

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**

Terminal Unit Sizing Data - Cooling

Zone Name	Total Coil Load (kW)	Sens Coil Load (kW)	Coil Entering DB / WB (°C)	Coil Leaving DB / WB (°C)	Water Flow @ 5,6 K (L/s)	Time of Peak Coil Load	Zone L/(s·m²)
Zone 1	2,1	2,1	24,5 / 17,7	14,8 / 14,2	0,09	Dec 0900	18,00

Terminal Unit Sizing Data - Heating, Fan, Ventilation

Zone Name	Heating Coil Load (kW)	Heating Coil Ent/Lvg DB (°C)	Htg Coil Water Flow @11,1 K (L/s)	Fan Design Airflow (L/s)	Fan Motor (BHP)	Fan Motor (kW)	OA Vent Design Airflow (L/s)
Zone 1	0,5	20,2 / 22,6	0,01	176	0,000	0,000	7

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (kW)	Time of Peak Sensible Cooling Load	Zone Heating Load (kW)	Zone Floor Area (m²)
Zone 1	2,0	Dec 0900	0,4	9,8

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (kW)	Time of Peak Sensible Load	Air Flow (L/s)	Heating Load (kW)	Floor Area (m²)	Space L/(s·m²)
Zone 1							
3P 85 SECRETARIA	1	2,0	Dec 0900	176	0,4	9,8	18,00

Ventilation Sizing Summary for FC-85

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:44p. m

1. Summary

Ventilation Sizing Method Sum of Space OA Airflows

2. Space Ventilation Analysis

2.1 Zone: Zone 1

Zone Name / Space Name	Mult.	Floor Area (m²)	Maximum Occupants	Maximum Supply Air (L/s)	Required Outdoor Air (L/s/person)	Required Outdoor Air (L/(s·m²))	Required Outdoor Air (L/s)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (L/s)
Zone 1									
3P 85 SECRETARIA	1	9,8	1,0	176,4	3,00	0,40	0,0	0,0	6,9
Totals (incl. Space Multipliers)				176,4					6,9

Zone Sizing Summary for FC-86

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:44p. m

Air System Information

Air System Name **FC-86**
Equipment Class **TERM**
Air System Type **4P-FC**

Number of zones **1**
Floor Area **11,9** m²
Location **Concepcion, Chile**

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**

Terminal Unit Sizing Data - Cooling

Zone Name	Total Coil Load (kW)	Sens Coil Load (kW)	Coil Entering DB / WB (°C)	Coil Leaving DB / WB (°C)	Water Flow @ 5,6 K (L/s)	Time of Peak Coil Load	Zone L/(s·m²)
Zone 1	2,5	2,5	24,5 / 17,7	14,8 / 14,2	0,11	Dec 0900	17,81

Terminal Unit Sizing Data - Heating, Fan, Ventilation

Zone Name	Heating Coil Load (kW)	Heating Coil Ent/Lvg DB (°C)	Htg Coil Water Flow @11,1 K (L/s)	Fan Design Airflow (L/s)	Fan Motor (BHP)	Fan Motor (kW)	OA Vent Design Airflow (L/s)
Zone 1	0,6	20,1 / 22,5	0,01	212	0,000	0,000	8

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (kW)	Time of Peak Sensible Cooling Load	Zone Heating Load (kW)	Zone Floor Area (m²)
Zone 1	2,4	Dec 0900	0,4	11,9

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (kW)	Time of Peak Sensible Load	Air Flow (L/s)	Heating Load (kW)	Floor Area (m²)	Space L/(s·m²)
Zone 1							
3P 86 SUBDIRECTOR ADM	1	2,4	Dec 0900	212	0,4	11,9	17,81

Ventilation Sizing Summary for FC-86

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:44p. m.

1. Summary

Ventilation Sizing Method Sum of Space OA Airflows

2. Space Ventilation Analysis

2.1 Zone: Zone 1

Zone Name / Space Name	Mult.	Floor Area (m²)	Maximum Occupants	Maximum Supply Air (L/s)	Required Outdoor Air (L/s/person)	Required Outdoor Air (L/(s·m²))	Required Outdoor Air (L/s)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (L/s)
Zone 1									
3P 86 SUBDIRECTOR ADM	1	11,9	1,2	212,0	3,00	0,40	0,0	0,0	8,3
Totals (incl. Space Multipliers)				212,0					8,3

Zone Sizing Summary for FC-87

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

Air System Information

Air System Name **FC-87**
Equipment Class **TERM**
Air System Type **4P-FC**

Number of zones **1**
Floor Area **14,4** m²
Location **Concepcion, Chile**

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**

Terminal Unit Sizing Data - Cooling

Zone Name	Total Coil Load (kW)	Sens Coil Load (kW)	Coil Entering DB / WB (°C)	Coil Leaving DB / WB (°C)	Water Flow @ 5,6 K (L/s)	Time of Peak Coil Load	Zone L/(s·m²)
Zone 1	4,5	4,4	24,4 / 17,6	14,7 / 14,1	0,19	Dec 1000	26,36

Terminal Unit Sizing Data - Heating, Fan, Ventilation

Zone Name	Heating Coil Load (kW)	Heating Coil Ent/Lvg DB (°C)	Htg Coil Water Flow @11,1 K (L/s)	Fan Design Airflow (L/s)	Fan Motor (BHP)	Fan Motor (kW)	OA Vent Design Airflow (L/s)
Zone 1	1,1	20,8 / 23,1	0,02	380	0,000	0,000	10

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (kW)	Time of Peak Sensible Cooling Load	Zone Heating Load (kW)	Zone Floor Area (m²)
Zone 1	4,3	Dec 1000	0,8	14,4

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (kW)	Time of Peak Sensible Load	Air Flow (L/s)	Heating Load (kW)	Floor Area (m²)	Space L/(s·m²)
Zone 1							
3P 87 OF DIRECTOR	1	4,3	Dec 1000	380	0,8	14,4	26,36

Ventilation Sizing Summary for FC-87

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:44p. m.

1. Summary

Ventilation Sizing Method Sum of Space OA Airflows

2. Space Ventilation Analysis

2.1 Zone: Zone 1

Zone Name / Space Name	Mult.	Floor Area (m²)	Maximum Occupants	Maximum Supply Air (L/s)	Required Outdoor Air (L/s/person)	Required Outdoor Air (L/(s·m²))	Required Outdoor Air (L/s)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (L/s)
Zone 1									
3P 87 OF DIRECTOR	1	14,4	1,4	379,6	3,00	0,40	0,0	0,0	10,1
Totals (incl. Space Multipliers)				379,6					10,1

Zone Sizing Summary for UI-05

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

Air System Information

Air System Name UI-05
Equipment Class SPLT AHU
Air System Type SZCAV

Number of zones 1
Floor Area 11,2 m²
Location Concepcion, Chile

Sizing Calculation Information

Calculation Months Jan to Dec
Sizing Data Calculated

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

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (L/s)	Minimum Supply Airflow (L/s)	Zone L/(s·m ²)	Reheat Coil Load (kW)	Reheat Coil Water L/s @ 11,1 K	Zone Htg Unit Coil Load (kW)	Zone Htg Unit Water L/s @ 11,1 K	Mixing Box Fan Airflow (L/s)
Zone 1	210	210	18,71	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 (m ²)
Zone 1	2,4	Dec 1800	0,3	11,2

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (kW)	Time of Peak Sensible Load	Air Flow (L/s)	Heating Load (kW)	Floor Area (m ²)	Space L/(s·m ²)
Zone 1							
1P 05 SALA GUARDIAS Y CH	1	2,4	Dec 1800	210	0,3	11,2	18,71

Ventilation Sizing Summary for UI-05

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:44p. m.

1. Summary

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

2. Space Ventilation Analysis

Zone Name / Space Name	Mult.	Floor Area (m²)	Maximum Occupants	Maximum Supply Air (L/s)	Required Outdoor Air (L/s/person)	Required Outdoor Air (L/(s·m²))	Required Outdoor Air (L/s)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (L/s)
Zone 1									
1P 05 SALA GUARDIAS Y CH	1	11,2	3,7	209,6	3,00	0,40	0,0	0,0	15,7
Totals (incl. Space Multipliers)				209,6					15,7

Zone Sizing Summary for UI-06.

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:45p. m

Air System Information

Air System Name UI-06.
Equipment Class SPLT AHU
Air System Type SZCAV

Number of zones 1
Floor Area 7,8 m²
Location Concepcion, Chile

Sizing Calculation Information

Calculation Months Jan to Dec
Sizing Data Calculated

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

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (L/s)	Minimum Supply Airflow (L/s)	Zone L/(s·m ²)	Reheat Coil Load (kW)	Reheat Coil Water L/s @ 11,1 K	Zone Htg Unit Coil Load (kW)	Zone Htg Unit Water L/s @ 11,1 K	Mixing Box Fan Airflow (L/s)
Zone 1	17	17	2,19	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 (m ²)
Zone 1	0,2	Jan 1900	0,0	7,8

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (kW)	Time of Peak Sensible Load	Air Flow (L/s)	Heating Load (kW)	Floor Area (m ²)	Space L/(s·m ²)
Zone 1							
1P 06 BODEGA FARMACOS SA	1	0,2	Jan 1900	17	0,0	7,8	2,19

Ventilation Sizing Summary for UI-06.

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:45p. m.

1. Summary

Ventilation Sizing Method Sum of Space OA Airflows
Design Ventilation Airflow Rate 12 L/s

2. Space Ventilation Analysis

Zone Name / Space Name	Mult.	Floor Area (m²)	Maximum Occupants	Maximum Supply Air (L/s)	Required Outdoor Air (L/s/person)	Required Outdoor Air (L/(s·m²))	Required Outdoor Air (L/s)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (L/s)
Zone 1									
1P 06 BODEGA FARMACOS SA	1	7,8	0,0	17,1	0,00	1,50	0,0	0,0	11,7
Totals (incl. Space Multipliers)				17,1					11,7

Zone Sizing Summary for UI-25

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:45p. m

Air System Information

Air System Name UI-25
Equipment Class SPLT AHU
Air System Type SZCAV

Number of zones 1
Floor Area 19,8 m²
Location Concepcion, Chile

Sizing Calculation Information

Calculation Months Jan to Dec
Sizing Data Calculated

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

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (L/s)	Minimum Supply Airflow (L/s)	Zone L/(s·m ²)	Reheat Coil Load (kW)	Reheat Coil Water L/s @ 11,1 K	Zone Htg Unit Coil Load (kW)	Zone Htg Unit Water L/s @ 11,1 K	Mixing Box Fan Airflow (L/s)
Zone 1	250	250	12,60	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 (m ²)
Zone 1	2,8	Mar 1200	0,3	19,8

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (kW)	Time of Peak Sensible Load	Air Flow (L/s)	Heating Load (kW)	Floor Area (m ²)	Space L/(s·m ²)
Zone 1							
1P 25 ACT VIDA DIARIA	1	2,8	Mar 1200	250	0,3	19,8	12,60

Ventilation Sizing Summary for UI-25

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:45p. m.

1. Summary

Ventilation Sizing Method Sum of Space OA Airflows
Design Ventilation Airflow Rate 50 L/s

2. Space Ventilation Analysis

Zone Name / Space Name	Mult.	Floor Area (m²)	Maximum Occupants	Maximum Supply Air (L/s)	Required Outdoor Air (L/s/person)	Required Outdoor Air (L/(s·m²))	Required Outdoor Air (L/s)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (L/s)
Zone 1									
1P 25 ACT VIDA DIARIA	1	19,8	6,6	249,6	3,00	1,50	0,0	0,0	49,5
Totals (incl. Space Multipliers)				249,6					49,5

Zone Sizing Summary for UI-29

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

Air System Information

Air System Name UI-29
Equipment Class SPLT AHU
Air System Type SZCAV

Number of zones 1
Floor Area 30,1 m²
Location Concepcion, Chile

Sizing Calculation Information

Calculation Months Jan to Dec
Sizing Data Calculated

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

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (L/s)	Minimum Supply Airflow (L/s)	Zone L/(s·m ²)	Reheat Coil Load (kW)	Reheat Coil Water L/s @ 11,1 K	Zone Htg Unit Coil Load (kW)	Zone Htg Unit Water L/s @ 11,1 K	Mixing Box Fan Airflow (L/s)
Zone 1	67	67	2,24	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 (m ²)
Zone 1	0,8	Dec 1900	0,2	30,1

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 (m ²)	Space L/(s·m ²)
Zone 1							
1P 29 BODEGA PNAC	1	0,8	Dec 1900	67	0,2	30,1	2,24

Ventilation Sizing Summary for UI-29

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:45p. m.

1. Summary

Ventilation Sizing Method Sum of Space OA Airflows
Design Ventilation Airflow Rate 35 L/s

2. Space Ventilation Analysis

Zone Name / Space Name	Mult.	Floor Area (m²)	Maximum Occupants	Maximum Supply Air (L/s)	Required Outdoor Air (L/s/person)	Required Outdoor Air (L/(s·m²))	Required Outdoor Air (L/s)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (L/s)
Zone 1									
1P 29 BODEGA PNAC	1	30,1	0,0	67,4	0,00	0,00	35,0	0,0	35,0
Totals (incl. Space Multipliers)				67,4					35,0

Zone Sizing Summary for UI-30

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:45p. m

Air System Information

Air System Name UI-30
Equipment Class SPLT AHU
Air System Type SZCAV

Number of zones 1
Floor Area 55,7 m²
Location Concepcion, Chile

Sizing Calculation Information

Calculation Months Jan to Dec
Sizing Data Calculated

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

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (L/s)	Minimum Supply Airflow (L/s)	Zone L/(s·m ²)	Reheat Coil Load (kW)	Reheat Coil Water L/s @ 11,1 K	Zone Htg Unit Coil Load (kW)	Zone Htg Unit Water L/s @ 11,1 K	Mixing Box Fan Airflow (L/s)
Zone 1	125	125	2,24	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 (m ²)
Zone 1	1,4	Dec 1900	0,3	55,7

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 (m ²)	Space L/(s·m ²)
Zone 1							
1P 30 BODEGA FARMACIA	1	1,4	Dec 1900	125	0,3	55,7	2,24

Ventilation Sizing Summary for UI-30

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:45p. m.

1. Summary

Ventilation Sizing Method Sum of Space OA Airflows
Design Ventilation Airflow Rate 35 L/s

2. Space Ventilation Analysis

Zone Name / Space Name	Mult.	Floor Area (m²)	Maximum Occupants	Maximum Supply Air (L/s)	Required Outdoor Air (L/s/person)	Required Outdoor Air (L/(s·m²))	Required Outdoor Air (L/s)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (L/s)
Zone 1									
1P 30 BODEGA FARMACIA	1	55,7	0,0	124,6	0,00	0,00	35,0	0,0	35,0
Totals (incl. Space Multipliers)				124,6					35,0

Zone Sizing Summary for UI-82

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:45p. m

Air System Information

Air System Name UI-82
Equipment Class SPLT AHU
Air System Type SZCAV

Number of zones 1
Floor Area 4,2 m²
Location Concepcion, Chile

Sizing Calculation Information

Calculation Months Jan to Dec
Sizing Data Calculated

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

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (L/s)	Minimum Supply Airflow (L/s)	Zone L/(s·m ²)	Reheat Coil Load (kW)	Reheat Coil Water L/s @ 11,1 K	Zone Htg Unit Coil Load (kW)	Zone Htg Unit Water L/s @ 11,1 K	Mixing Box Fan Airflow (L/s)
Zone 1	14	14	3,36	0,0	-	0,0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (kW)	Time of Peak Sensible Cooling Load	Zone Heating Load (kW)	Zone Floor Area (m ²)
Zone 1	0,2	Dec 1500	0,0	4,2

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (kW)	Time of Peak Sensible Load	Air Flow (L/s)	Heating Load (kW)	Floor Area (m ²)	Space L/(s·m ²)
Zone 1							
3P 82 SALA TIC	1	0,2	Dec 1500	14	0,0	4,2	3,36

Ventilation Sizing Summary for UI-82

Project Name: CESFAM VILLA ALEGRE
Prepared by: LBN CONSULTING

10-08-2020
08:45p. m

1. Summary

Ventilation Sizing Method Sum of Space OA Airflows
Design Ventilation Airflow Rate 3 L/s

2. Space Ventilation Analysis

Zone Name / Space Name	Mult.	Floor Area (m²)	Maximum Occupants	Maximum Supply Air (L/s)	Required Outdoor Air (L/s/person)	Required Outdoor Air (L/(s·m²))	Required Outdoor Air (L/s)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (L/s)
Zone 1									
3P 82 SALA TIC	1	4,2	0,4	14,1	3,00	0,40	0,0	0,0	2,9
Totals (incl. Space Multipliers)				14,1					2,9


