

LCAC

Selection Report

<i>Project Name</i>		<i>Date</i>	
		2021-09-02 12:07:46	
<i>Project Address</i>			
<i>Client Name</i>		<i>Company</i>	
		<i>Tel.</i>	
<i>Address</i>			

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1. Abbreviations

No.	Abbreviation	Annotation	No.	Abbreviation	Annotation
1	CC	Cooling Capacity	21	W×H×D	Width×Height×Depth
2	HC	Heating Capacity	22	FLA	Maximum Current (Full Load Ampere)
3	Total CC-IDU	Total Cooling Capacity of IDU	23	MCA	Minimum Fusing Current (Minimum Circuit Ampere)
4	Total CC-ODU	Total Cooling Capacity of ODU	24	MOP	Maximum Overcurrent Protection
5	ESP	External Static Pressure	25	Breaker	Breaker Capacity
6	Extra Ref.	Additional Refrigerant to the System	26	Cable Size	Wire Gauge (mm ²) × Number of Wires
7	DB	Dry Bulb Temperature	27	Temp C	Indoor Conditions in Cooling (Dry Bulb Temperature)
8	WB	Wet Bulb Temperature	28	Temp H	Indoor Temperature of Indoor Unit Coil (Dry Bulb Temperature)
9	RH	Relative Humidity	29	Req CC	Required Cooling Capacity
10	Req TCC-IDU	Required Total Cooling Capacity of IDU	30	Req SCC	Required Sensible Cooling Capacity
11	Req TSC-IDU	Required Total Sensible Cooling Capacity of IDU	31	Act SCC	Actual Sensible Cooling Capacity
12	Req THC-IDU	Required Total Heating Capacity of IDU	32	Req HC	Required Heating Capacity
13	Rtd CC	Rated Cooling Capacity	33	Vertical Dist	Fall with ODU
14	Act CC	Actual Cooling Capacity	34	Design ESP	Design Static Pressure
15	Rtd HC	Rated Heating Capacity	35	Design Airflow	Design Airflow Volume
16	Act HC	Actual Heating Capacity	36	CC Range	Range of Cooling Capacity
17	Rtd PI-C	Rated Input Power for Cooling	37	HC Range	Range of Heating Capacity
18	Act PI-C	Actual Input Power for Cooling	38	AEVR H	Allowable Heat Exchange Volume Range
19	Rtd PI-H	Rated Input Power for Heating	39	Air Flow Range	Suggested Airflow Range
20	Act PI-H	Actual Input Power for Heating			

2. Project Proposal

2.1 Units

No.	Model	Description	Quantity	Unit Price	Total Price	Remark
1	Jednostka zewnętrzna 1VRF1	Heat Pump,380~415V-3Ph-50/60Hz	1			
2	Jednostka wewnętrzna kanałowa 'Ind 1, Ind 2	Slim Duct Type(with water pump)	2			
3	Jednostka wewnętrzna kanałowa 'Ind 4	Slim Duct Type(with water pump)	1			
4	Jednostka wewnętrzna naścienna 'Ind 5	Wall Mounted	1			
5	Jednostka wewnętrzna naścienna 'Ind 6, Ind 7, Ind 8, Bibliot	Wall Mounted	4			
6	Jednostka wewnętrzna naścienna 'Ind 9	Wall Mounted	1			
7	Jednostka wewnętrzna kanałowa Ind 10, Ind 11, Ind 12, Ind 13, Ind 14, Ind 16	Slim Duct Type(with water pump)	6			
8	Jednostka wewnętrzna kanałowa 'Ind 15	Slim Duct Type(with water pump)	1			
9	Bramka MODBUS do GMV	Bramka MODBUS do GMV	1			
10	IKLIJW+IKLIJZ	Amber Prestige dla pom. Serwerowni	1			

2.2 Branch

No.	Model	Description	Quantity	Unit Price	Total Price	Remark
1	Trójnik 02/A	Branch-Y	2			
2	Trójnik 01/A	Branch-Y	12			
3	Trójnik 01/B	Branch-Y	1			

2.3 Controller

No.	Model	Description	Quantity	Unit Price	Total Price	Remark
1	Pilot	Remote Controller	16			Standard

2.4 Mode Converter

No.	Model	Description	Quantity	Unit Price	Total Price	Remark

2.5 Piping Length

No.	Pipe Diameter	Total Length	Number Of Elbows	Wall Thickness	Type
	mm	m		mm	
1	6,35	37,66	0	≥0,8	O
2	9,52	110,89	0	≥0,8	O
3	12,7	18,52	0	≥0,8	O
4	15,9	41,5	0	≥1,0	O
5	19,05	11,48	0	≥1,0	1/2H
6	25,4	5,63	0	≥1,2	1/2H
7	28,6	3,86	0	≥1,2	1/2H

2.6 Other

No.	Item	Value	Unit	Description
1	Communication line	114,77	m	This value is used as a reference value.
2	Extra Ref.	10,52	kg	R410a

3. System

3.1 Outdoor Units Detail

Model	Jednostka zewnętrzna 1VRF1					
Basic Unit	Jednostka zewnętrzna 1VRF1					
Description	Heat Pump,380-415V-3Ph-50/60Hz					
Power supply	ESP	Total CC-IDU	Total CC-ODU	Maximum of IDUs	Refrigerant	Extra Ref.
	Pa	kW	kW			kg
380-415 3Ph 50Hz	0~110	50,8	45	26	R410a	10,06
Req TCC-IDU	Req TSC-IDU	Req THC-IDU	Rtd CC	Rtd HC	Rtd PI-C	Rtd PI-H
kW	kW	kW	kW	kW	kW	kW
47,28	0	57,4	45	50	21,33	14,51
Connection ratio	Act CC	Act HC	Act PI-C	Act PI-H		
%	kW	kW	kW	kW		
112,89	43,6	55,08	21,4737	16,2814		

*Note:"Actual value" refers to the actual capacity or input power corrected according to the design temperature, pipe length and height differential.

Design Condition		DB	WB	RH
		°C	°C	%
Cooling	Indoor Side	27	19	45,77
	Outdoor Side	35	-	-
Heating	Indoor Side	20	-	-
	Outdoor Side	7	6	85,36

Electrical

Model	W×H×D	Net Weight	Breaker	Cable Size	FLA	MCA	MOP
	mm	kg	A	mm²	A	A	A
Jednostka zewnętrzna 1VRF1	1340×1690×775	300	40	6*5	/	/	/

3.2 Indoor Units Detail

1. Normal indoor unit

Name	Model	Temp C/RH	Temp H	Req CC	Act CC	Req SCC	Act SCC	Req HC	Act HC
		°C/%	°C	kW	kW	kW	kW	kW	kW
Ind 1	Slim Duct Type(with water pump)	24/54,77	20	6,6	6,6	0	5,4	8	7,92
Ind 2	Slim Duct Type(with water pump)	24/54,77	20	6,6	6,6	0	5,4	8	7,92
Ind 4	Slim Duct Type(with water pump)	24/54,77	20	2,6	2,6	0	2,13	3,2	3,17
Ind 5	Wall Mounted	24/54,77	20	2,6	2,6	0	2,13	3,2	3,17
Ind 6	Wall Mounted	24/54,77	20	2,05	2,05	0	1,67	2,5	2,48
Ind 7	Wall Mounted	24/54,77	20	2,05	2,05	0	1,67	2,5	2,48
Ind 8	Wall Mounted	24/54,77	20	2,05	2,05	0	1,67	2,5	2,48
Ind 9	Wall Mounted	24/54,77	20	4,19	4,19	0	3,42	5	4,95
Ind 10	Slim Duct Type(with water pump)	24/54,77	20	2,05	2,05	0	1,67	2,5	2,48
Ind 11	Slim Duct Type(with water pump)	24/54,77	20	2,05	2,05	0	1,67	2,5	2,48
Ind 12	Slim Duct Type(with water pump)	24/54,77	20	2,05	2,05	0	1,67	2,5	2,48
Ind 13	Slim Duct Type(with water pump)	24/54,77	20	2,05	2,05	0	1,67	2,5	2,48
Ind 14	Slim Duct Type(with water pump)	24/54,77	20	2,05	2,05	0	1,67	2,5	2,48
Ind 15	Slim Duct Type(with water pump)	24/54,77	20	4,19	4,19	0	3,42	5	4,95
Ind 16	Slim Duct Type(with water pump)	24/54,77	20	2,05	2,05	0	1,67	2,5	2,48
Biblot	Wall Mounted	24/54,77	20	2,05	2,05	0	1,67	2,5	2,5

*Note:"Actual value" refers to the actual capacity or input power corrected according to the design temperature, pipe length and height differential.

Name	Description	Rtd CC	Rtd HC	Controller	Vertical Dist	Design ESP	Remark
		kW	kW		m	Pa	
Ind 1	Slim Duct Type(with water pump)	7,1	8	Pilot	0,00	0	
Ind 2	Slim Duct Type(with water pump)	7,1	8	Pilot	0,00	0	
Ind 4	Slim Duct Type(with water pump)	2,8	3,2	Pilot	0,00	0	
Ind 5	Wall Mounted	2,8	3,2	Pilot	0,00	0	
Ind 6	Wall Mounted	2,2	2,5	Pilot	0,00	0	
Ind 7	Wall Mounted	2,2	2,5	Pilot	0,00	0	
Ind 8	Wall Mounted	2,2	2,5	Pilot	0,00	0	
Ind 9	Wall Mounted	4,5	5	Pilot	0,00	0	
Ind 10	Slim Duct Type(with water pump)	2,2	2,5	Pilot	0,00	0	
Ind 11	Slim Duct Type(with water pump)	2,2	2,5	Pilot	0,00	0	
Ind 12	Slim Duct Type(with water pump)	2,2	2,5	Pilot	0,00	0	
Ind 13	Slim Duct Type(with water pump)	2,2	2,5	Pilot	0,00	0	
Ind 14	Slim Duct Type(with water pump)	2,2	2,5	Pilot	0,00	0	
Ind 15	Slim Duct Type(with water pump)	4,5	5	Pilot	0,00	0	
Ind 16	Slim Duct Type(with water pump)	2,2	2,5	Pilot	0,00	0	
Biblot	Wall Mounted	2,2	2,5	Pilot	0,00	0	

2. Fresh air unit

Name	Model	Temp C/RH	Temp H	Req CC	Act CC	Req SCC	Act SCC	Req HC	Act HC
		°C/%	°C	kW	kW	kW	kW	kW	kW

*Note:"Actual value" refers to the actual capacity or input power corrected according to the design temperature, pipe length and height differential.

Name	Description	Rtd CC	Rtd HC	Controller	Vertical Dist	Design ESP	Design Airflow	Remark
		kW	kW		m	Pa	m³/h	

3. AHU-KIT unit

Name	Model	Temp C/RH	Temp H	Req CC	Act CC	Req SCC	Act SCC	Req HC	Act HC
		°C/%	°C	kW	kW	kW	kW	kW	kW

*Note:"Actual value" refers to the actual capacity or input power corrected according to the design temperature, pipe length and height differential.

Name	Description	Rtd CC	Rtd HC	Controller	Vertical Dist	CC Range	HC Range	AEVR H	Air Flow Range	Remark
		kW	kW		m	kW	kW	dm²	m³/h	

4. Electrical

Name	W×H×D	Net Weight	ESP	Sound (H/M/L)	Airflow Volume (H/M/L)	Power Supply	Breaker	Cable Size
	mm						A	mm²
Ind 1	1310×200×462	31	0~50	37/32/30	1100/850/650	220-240 1Ph 50Hz	6	1*3
Ind 2	1310×200×462	31	0~50	37/32/30	1100/850/650	220-240 1Ph 50Hz	6	1*3
Ind 4	710×200×462	18,5	0~30	30/25/22	450/350/200	220-240 1Ph 50Hz	6	1*3
Ind 5	845×289×209	10,5	-	35/33/30	500/440/300	220-240 1Ph 50Hz	6	1*3
Ind 6	845×289×209	10,5	-	35/33/30	500/440/300	220-240 1Ph 50Hz	6	1*3
Ind 7	845×289×209	10,5	-	35/33/30	500/440/300	220-240 1Ph 50Hz	6	1*3
Ind 8	845×289×209	10,5	-	35/33/30	500/440/300	220-240 1Ph 50Hz	6	1*3
Ind 9	970×224×300	12,5	-	43/40/37	850/580/500	220-240 1Ph 50Hz	6	1*3
Ind 10	710×200×462	18,5	0~30	30/25/22	450/350/200	220-240 1Ph 50Hz	6	1*3
Ind 11	710×200×462	18,5	0~30	30/25/22	450/350/200	220-240 1Ph 50Hz	6	1*3
Ind 12	710×200×462	18,5	0~30	30/25/22	450/350/200	220-240 1Ph 50Hz	6	1*3
Ind 13	710×200×462	18,5	0~30	30/25/22	450/350/200	220-240 1Ph 50Hz	6	1*3
Ind 14	710×200×462	18,5	0~30	30/25/22	450/350/200	220-240 1Ph 50Hz	6	1*3
Ind 15	1010×200×462	25	0~30	33/29/27	750/550/400	220-240 1Ph 50Hz	6	1*3
Ind 16	710×200×462	18,5	0~30	30/25/22	450/350/200	220-240 1Ph 50Hz	6	1*3
Ind 8	845×289×209	10,5	-	35/33/30	500/440/300	220-240 1Ph 50Hz	6	1*3

3.3 Piping

1. Pipes

Position	Liquid Pipe	Gas Pipe (Low Pressure)	Gas Pipe (High Pressure)	Total Length	Number Of Elbows
	mm	mm	mm	m	
BY1_P1	9,52	19,05	-	0,18	0
BY1_P2	12,7	25,4	-	5,63	0
BY2_P1	9,52	15,9	-	5,98	0
BY2_P2	9,52	9,52	-	14,64	0
BY3_P1	9,52	15,9	-	6,33	0
BY3_P2	9,52	15,9	-	4,15	0
BY4_P1	9,52	15,9	-	8,3	0
BY4_P2	9,52	19,05	-	3,42	0
BY5_P1	9,52	15,9	-	1,9	0
BY5_P2	6,35	9,52	-	2,81	0
BY6_P1	6,35	12,7	-	2,63	0
BY6_P2	6,35	9,52	-	1,37	0
BY7_P1	6,35	9,52	-	6,89	0
BY7_P2	6,35	9,52	-	2,97	0
BY8_P1	9,52	19,05	-	7,88	0
BY8_P2	9,52	15,9	-	4,6	0
BY14_P1	9,52	15,9	-	2,49	0
BY14_P2	6,35	9,52	-	2,03	0
BY9_P1	9,52	15,9	-	1,51	0
BY9_P2	6,35	9,52	-	1,99	0
BY10_P1	9,52	15,9	-	0,48	0
BY10_P2	6,35	9,52	-	2,24	0
BY11_P1	9,52	15,9	-	2,56	0
BY11_P2	6,35	9,52	-	2,07	0
BY12_P1	9,52	15,9	-	3,2	0
BY12_P2	6,35	9,52	-	1,99	0
BY13_P1	6,35	12,7	-	1,57	0
BY13_P2	6,35	9,52	-	1,99	0
BY15_P1	6,35	12,7	-	4,83	0
BY15_P2	6,35	9,52	-	2,28	0
MainPipe	12,7	28,6	-	3,86	0

Remarks: High-pressure Gas pipe and low-pressure Gas pipe is only for Heat Recovery Units.

2. Piping Limitations

Item		Limited Length(≤)	Actual Length
		m	m
Actual total piping length		1000	114,77
From ODU to the farthest IDU	Actual Length	200	30,53
	Equivalent Length	240	34,53
Length difference between the farthest and the nearest IDU to first indoor branch		40	16,36
Distance between first indoor branch and the farthest IDU		120	26,67
Maximum height difference between ODU and IDU	When ODU is installed above IDU	100	0
	When ODU is installed below IDU	110	0
Maximum height difference h between IDU and IDU		40	0
Maximum length of main pipe		90(<)	3,86
Length from IDU to the nearest branch		40	14,64

*Note:

(1) If the main pipe is longer than 90m, then the pipe diameter will be automatically adjusted into a higher size.

(2) Normally, the pipe length between the first branch of IDU and the farthest IDU is 40m. And when the following condition is satisfied, the pipe length can reach up 90m:

1) Actual length of pipe in total: $L1+L2+L3+L4+...+L9+ai+bi+...+ji+≤1000m$.

2) Length between each IDU and its nearest branch a, b, c, d, e, f, g, h, i, j≤40m;

3) Difference between the pipe length from the first branch of IDU to the farthest IDU and the pipe length from the first branch of IDU to the nearest IDU: $L10-L11≤40m$.

3.4 System Proposal

1. Units

No.	Model	Quantity	Description
1	Jednostka zewnętrzna 1VRF1	1	Heat Pump,380~415V-3Ph-50/60Hz
2	Jednostka wewnętrzna kanałowa Ind 1, Ind 2	2	Slim Duct Type(with water pump)
3	Jednostka wewnętrzna kanałowa Ind 4	1	Slim Duct Type(with water pump)
4	Jednostka wewnętrzna ścienna Ind 5	1	Wall Mounted
5	Jednostka wewnętrzna ścienna Ind 6, Ind 7, Ind 8, Bibliot	4	Wall Mounted
6	Jednostka wewnętrzna ścienna Ind 9	1	Wall Mounted
7	Jednostka wewnętrzna kanałowa Ind 10, Ind 11, Ind 12, Ind 13, Ind 14, Ind 16,	6	Slim Duct Type(with water pump)
8	Jednostka wewnętrzna kanałowa Ind 15	1	Slim Duct Type(with water pump)

2. Piping length

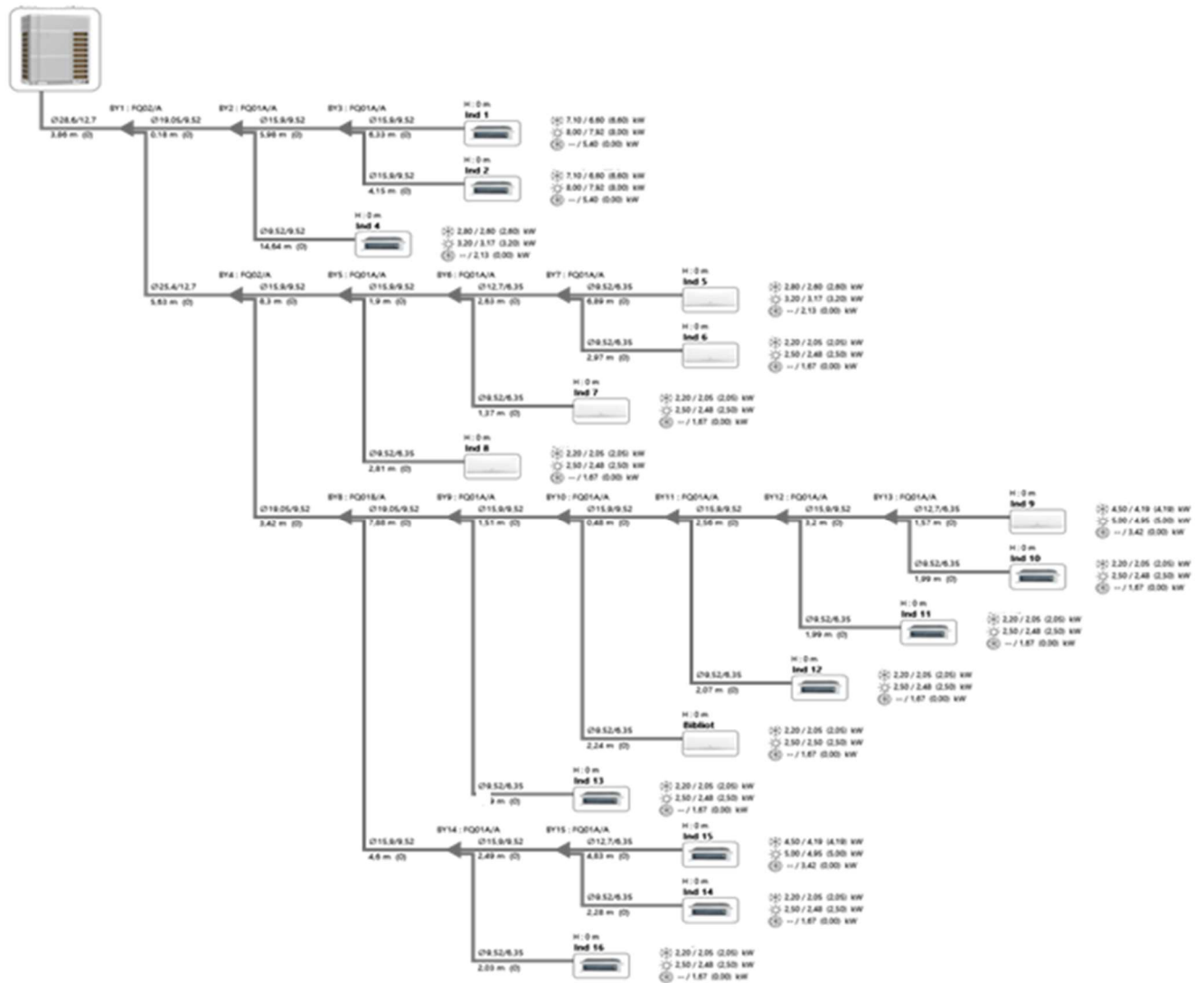
No.	Pipe Diameter	Total Length	Number Of Elbows	Wall Thickness	Type
	mm	m		mm	
1	6,35	37,66	0	≥0,8	O
2	9,52	110,89	0	≥0,8	O
3	12,7	18,52	0	≥0,8	O
4	15,9	41,5	0	≥1,0	O
5	19,05	11,48	0	≥1,0	1/2H
6	25,4	5,63	0	≥1,2	1/2H
7	28,6	3,86	0	≥1,2	1/2H

3. Accessories

No.	Item	Quantity	Unit	Description
1	Trójnik 02/A	2	Pcs.	Branch-Y
2	Trójnik 01A/A	12	Pcs.	Branch-Y
3	Trójnik 01B/A	1	Pcs.	Branch-Y
4	Pilot	16	Pcs.	Remote Controller(Standard)
5	Communication line	114,77	m	This value is used as a reference value.
6	Extra Ref.	10,06	kg	R410a

4. Piping Diagrams

The diagram can be copied to paint tool, it can be adjusted photo's size.



5. Wiring Diagrams

