

SAMSUNG

Project Report

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1. Total Load Profile

1.1 Name of building1

Dept	Fl	Room	Area		Load per unit area		Load			Sum of capacity			Model	Qty	Nominal Capacity			Outdoor	Model	Nominal Capacity		Combi. Ratio				
			CAD	SALE S	Cooling	Heating	Cooling		Heating	Cooling		Heating			Cooling	SHC	TC			Cooling		Heating	Cooling	Heating	Cooling	Heating
							TC kW	SHC kW		TC kW	TC kW									SHC kW	TC kW					
			m2	m2	kW/m2	kW/m2	TC kW	SHC kW	TC kW	TC kW	SHC kW	TC kW			TC kW	SHC kW	TC kW	-	-	TC kW	TC kW	%	%			
Name of building g1	2	2.02	13.14 74	13.15	0.1	0	1.31	0.00	0.00	2.2	1.5	2.5	AM022JNVDKH/EU	1	2.20	1.50	2.50	System	AM140KXMDG H/EU	40.00	45.00	123	124			
		2.03	30.04 12	30.04	0.1	0	3.00	0.00	0.00	4.4	3	5	AM022JNVDKH/EU	2	2.20	1.50	2.50									
		2.04	12.63 2	12.63	0.1	0	1.26	0.00	0.00	2.2	1.5	2.5	AM022JNVDKH/EU	1	2.20	1.50	2.50									
		2.05	13.57 03	13.57	0.1	0	1.36	0.00	0.00	2.2	1.5	2.5	AM022JNVDKH/EU	1	2.20	1.50	2.50									
		2.06	13.45 82	13.46	0.1	0	1.35	0.00	0.00	2.2	1.5	2.5	AM022JNVDKH/EU	1	2.20	1.50	2.50									
		2.07	28.67 52	28.68	0.1	0	2.87	0.00	0.00	5.6	3.8	6.4	AM028JNVDKH/EU	2	2.80	1.90	3.20									
		2.08	7.252 54	7.25	0.1	0	0.73	0.00	0.00	1.5	1	1.7	AM015JNVDKH/EU	1	1.50	1.00	1.70									
		2.10	14.76 98	14.77	0.1	0	1.48	0.00	0.00	2.2	1.5	2.5	AM022JNVDKH/EU	1	2.20	1.50	2.50									
		2.12	5.942 32	5.94	0.1	0	0.59	0.00	0.00	1.5	1	1.7	AM015JNVDKH/EU	1	1.50	1.00	1.70									
		2.01	23.99 52	24	0.1	0	2.40	0.00	0.00	3.7	2.5	4.2	AM015JNVDKH/EU	1	1.50	1.00	1.70									
			23.99 52	24	0.1	0	2.40	0.00	0.00				AM022JNVDKH/EU	1	2.20	1.50	2.50									
		2.11	24.73 8	24.74	0.1	0	2.47	0.00	0.00	3.7	2.5	4.2	AM015JNVDKH/EU	1	1.50	1.00	1.70									
			24.73 8	24.74	0.1	0	2.47	0.00	0.00				AM022JNVDKH/EU	1	2.20	1.50	2.50									
		2.14	24.22 65	24.23	0.1	0	2.42	0.00	0.00	4.4	3	5	AM022JNVDKH/EU	2	2.20	1.50	2.50									
	1	1.03	16.88 01	16.88	0.1	0	1.69	0.00	0.00	2.2	1.5	2.5	AM022JNVDKH/EU	1	2.20	1.50	2.50									
		1.04	12.75 95	12.76	0.1	0	1.28	0.00	0.00	1.5	1	1.7	AM015JNVDKH/EU	1	1.50	1.00	1.70									
		1.09	12.50 13	12.5	0.1	0	1.25	0.00	0.00	1.5	1	1.7	AM015JNVDKH/EU	1	1.50	1.00	1.70									
		1.10	12.84 48	12.84	0.1	0	1.28	0.00	0.00	1.5	1	1.7	AM015JNVDKH/EU	1	1.50	1.00	1.70									
		1.01	23.89 64	23.9	0.1	0	2.39	0.00	0.00	3.7	2.5	4.2	AM015JNVDKH/EU	1	1.50	1.00	1.70									
			23.89 64	23.9	0.1	0	2.39	0.00	0.00				AM022JNVDKH/EU	1	2.20	1.50	2.50									
	0	0.04	25.12 13	25.12	0.1	0	2.51	0.00	0.00	3	2	3.4	AM015JNVDKH/EU	2	1.50	1.00	1.70									

2. Piping & Wiring

2.1 System

2.1.1 Detail Load Profile

- 1) Design condition: Poland, WARSAW, Cooling 35/25.5, Heating -20/-20
- 2) Load profile

Building			Unit		Liquid	Gas	H.P.Gas	Airflow		Nominal Capacity			Simulated Capacity			Combi. Ratio	
Dept	FI	Room	Name	Model name						Cooling		Heating	Cooling		Heating	Cooling	Heating
										TC	SHC	TC	TC	SHC	TC		
-	-	-	-	-	mm	mm	mm	-	CMM	kW	kW	kW	kW	kW	%	%	
Name of building1	D		System	AM140KXMDGH/EU	12.70	28.58			180.00	40.00		45.00	35.22		38.50	123	124.2
	2	2.02	2.02	AM022JNVDKH/EU	6.35	12.70		H	5.40	2.20	1.50	2.50	1.58	1.25	1.73		
		2.03	2.03 1	AM022JNVDKH/EU	6.35	12.70		H	5.40	2.20	1.50	2.50	1.58	1.25	1.73		
		2.03	2.03 2	AM022JNVDKH/EU	6.35	12.70		H	5.40	2.20	1.50	2.50	1.58	1.25	1.73		
		2.04	2.04	AM022JNVDKH/EU	6.35	12.70		H	5.40	2.20	1.50	2.50	1.58	1.25	1.73		
		2.05	2.05	AM022JNVDKH/EU	6.35	12.70		H	5.40	2.20	1.50	2.50	1.58	1.25	1.73		
		2.06	2.06	AM022JNVDKH/EU	6.35	12.70		H	5.40	2.20	1.50	2.50	1.58	1.25	1.73		
		2.07	2.07 1	AM028JNVDKH/EU	6.35	12.70		H	5.70	2.80	1.90	3.20	2.00	1.56	2.19		
		2.08	2.08	AM015JNVDKH/EU	6.35	12.70		H	4.40	1.50	1.00	1.70	1.05	0.83	1.15		
		2.10	2.10	AM022JNVDKH/EU	6.35	12.70		H	5.40	2.20	1.50	2.50	1.58	1.25	1.73		
		2.12	2.12	AM015JNVDKH/EU	6.35	12.70		H	4.40	1.50	1.00	1.70	1.05	0.83	1.15		
		2.01	2.01 2	AM015JNVDKH/EU	6.35	12.70		H	4.40	1.50	1.00	1.70	1.05	0.83	1.15		
		2.01	2.01 1	AM022JNVDKH/EU	6.35	12.70		H	5.40	2.20	1.50	2.50	1.58	1.25	1.73		
		2.11	2.11 2	AM015JNVDKH/EU	6.35	12.70		H	4.40	1.50	1.00	1.70	1.05	0.83	1.15		
		2.11	2.11 1	AM022JNVDKH/EU	6.35	12.70		H	5.40	2.20	1.50	2.50	1.58	1.25	1.73		
		2.14	2.14 1	AM022JNVDKH/EU	6.35	12.70		H	5.40	2.20	1.50	2.50	1.58	1.25	1.73		
		2.14	2.14 2	AM022JNVDKH/EU	6.35	12.70		H	5.40	2.20	1.50	2.50	1.58	1.25	1.73		
		2.07	2.07 2	AM028JNVDKH/EU	6.35	12.70		H	5.70	2.80	1.90	3.20	2.00	1.56	2.19		
	1	1.03	1.03	AM022JNVDKH/EU	6.35	12.70		H	5.40	2.20	1.50	2.50	1.58	1.25	1.73		
		1.04	1.04	AM015JNVDKH/EU	6.35	12.70		H	4.40	1.50	1.00	1.70	1.05	0.83	1.15		
		1.09	1.09	AM015JNVDKH/EU	6.35	12.70		H	4.40	1.50	1.00	1.70	1.05	0.83	1.15		
		1.10	1.10	AM015JNVDKH/EU	6.35	12.70		H	4.40	1.50	1.00	1.70	1.05	0.83	1.15		
		1.01	1.01 1	AM015JNVDKH/EU	6.35	12.70		H	4.40	1.50	1.00	1.70	1.05	0.83	1.15		
		1.01	1.01 2	AM022JNVDKH/EU	6.35	12.70		H	5.40	2.20	1.50	2.50	1.58	1.25	1.73		
	0	0.04	0.04 1	AM015JNVDKH/EU	6.35	12.70		H	4.40	1.50	1.00	1.70	1.05	0.83	1.15		
		0.04	0.04 2	AM015JNVDKH/EU	6.35	12.70		H	4.40	1.50	1.00	1.70	1.05	0.83	1.15		

2.1.2 Control

1) This data is for reference only. Verify local, state, and national electric codes. Samsung does not guarantee this data.

2) Configuration

Dept	Building		Unit		Communication wires	Power wires	Breaker Fuse	Main Address		RMC Address		Accessories	
	Fl	Room	Name	Model name								Optional accessories	Basic accessories
-	-	-	-	-	mm2	mm2	A						
Name of building1	D		System	AM140KXMDGH/EU	0.75~1.5		40						
		2.02	2.02	AM022JNVDKH/EU	0.75~1.5	1.5~2.5		0	0	0	0		
		2.03	2.03 1	AM022JNVDKH/EU	0.75~1.5	1.5~2.5		0	1	0	0		
		2.03	2.03 2	AM022JNVDKH/EU	0.75~1.5	1.5~2.5		0	2	0	0		
		2.04	2.04	AM022JNVDKH/EU	0.75~1.5	1.5~2.5		0	3	0	0		
		2.05	2.05	AM022JNVDKH/EU	0.75~1.5	1.5~2.5		0	4	0	0		
		2.06	2.06	AM022JNVDKH/EU	0.75~1.5	1.5~2.5		0	5	0	0		
		2.07	2.07 1	AM028JNVDKH/EU	0.75~1.5	1.5~2.5		0	6	0	0		
		2.08	2.08	AM015JNVDKH/EU	0.75~1.5	1.5~2.5		0	8	0	0		
		2.10	2.10	AM022JNVDKH/EU	0.75~1.5	1.5~2.5		0	9	0	0		
		2.12	2.12	AM015JNVDKH/EU	0.75~1.5	1.5~2.5		1	0	0	0		
		2.01	2.01 1	AM022JNVDKH/EU	0.75~1.5	1.5~2.5		1	1	0	0		
		2.01	2.01 2	AM015JNVDKH/EU	0.75~1.5	1.5~2.5		1	2	0	0		
		2.11	2.11 1	AM022JNVDKH/EU	0.75~1.5	1.5~2.5		0	0	0	0		
		2.11	2.11 2	AM015JNVDKH/EU	0.75~1.5	1.5~2.5		1	4	0	0		
		2.14	2.14 1	AM022JNVDKH/EU	0.75~1.5	1.5~2.5		1	5	0	0		
		2.14	2.14 2	AM022JNVDKH/EU	0.75~1.5	1.5~2.5		1	6	0	0		
		2.07	2.07 2	AM028JNVDKH/EU	0.75~1.5	1.5~2.5		0	7	0	0		
		1.03	1.03	AM022JNVDKH/EU	0.75~1.5	1.5~2.5		1	7	0	0		
		1.04	1.04	AM015JNVDKH/EU	0.75~1.5	1.5~2.5		1	8	0	0		
		1.09	1.09	AM015JNVDKH/EU	0.75~1.5	1.5~2.5		1	9	0	0		
		1.10	1.10	AM015JNVDKH/EU	0.75~1.5	1.5~2.5		2	0	0	0		
		1.01	1.01 1	AM015JNVDKH/EU	0.75~1.5	1.5~2.5		2	1	0	0		
		1.01	1.01 2	AM022JNVDKH/EU	0.75~1.5	1.5~2.5		2	2	0	0		
		0.04	0.04 1	AM015JNVDKH/EU	0.75~1.5	1.5~2.5		2	3	0	0		
		0.04	0.04 2	AM015JNVDKH/EU	0.75~1.5	1.5~2.5		2	4	0	0		

2.1.3 Equipment list

1) Equipment list

Categories	Model name		Qty	Categories	Model name		Qty
DVM S Eco(NEW)		AM140KXMDGH/EU	1	Y-Joint		MXJ-YA2812M	1
AR5000		AM015JNVDKH/EU	10			MXJ-YA2512M	5
		AM022JNVDKH/EU	13			MXJ-YA1509M	18
		AM028JNVDKH/EU	2				

2) Piping length

Length as pipe diameter		6.35	9.52	12.70	15.88	19.05	22.22	25.40	28.58	31.75	34.92	38.10	41.28	44.45	47.63	50.80	53.98
1. Liquid piping	m	53.09	78.53	2.53													
2. Gas piping	m			53.09	73.43	2.77	2.33		2.53								
3. High pressure gas piping	m																
Restriction of pipe length		Restriction (Based on installation manual)						Actual piping length				Equivalent piping length					
1. Total piping length	m					300.00					141.36						
2. Maximum piping length	m					160.00					28.21						30.86
3. Main pipe length	m					120.00					2.01						
4. Piping length between the first branch and the farthest indoor unit	m					40.00/0.00					26.19						
5. Level difference between outdoor and indoor unit(Max) (OD above ID unit / OD below ID unit)	m					50.00/40.00					8.00						
6. Level difference between indoor units	m					50.00					7.00						

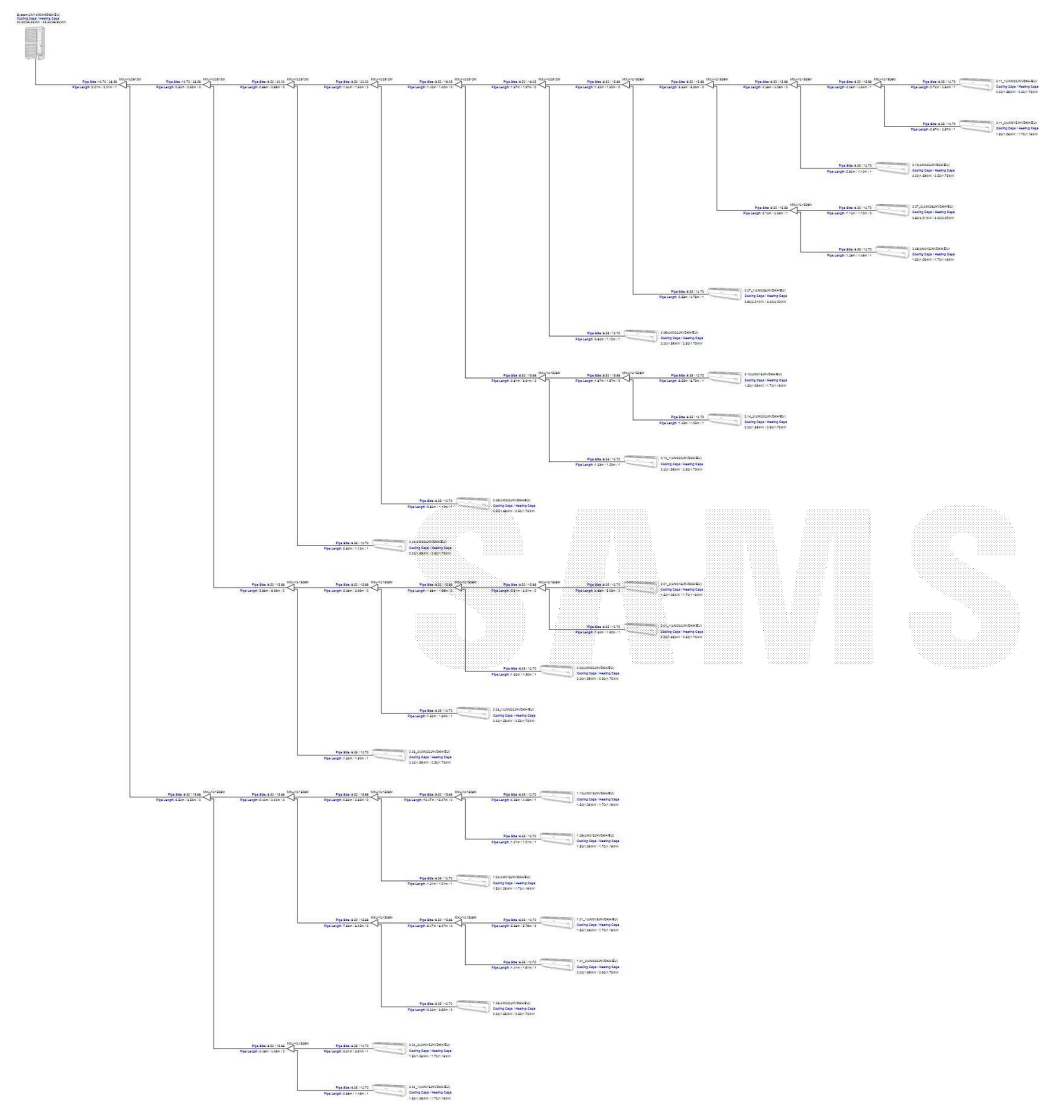
3) Basic and additional charging ref. amount

Basic (Factory) charge ref. amount : 4.800 kg

Additional Field charging ref. amount : 12.120 kg

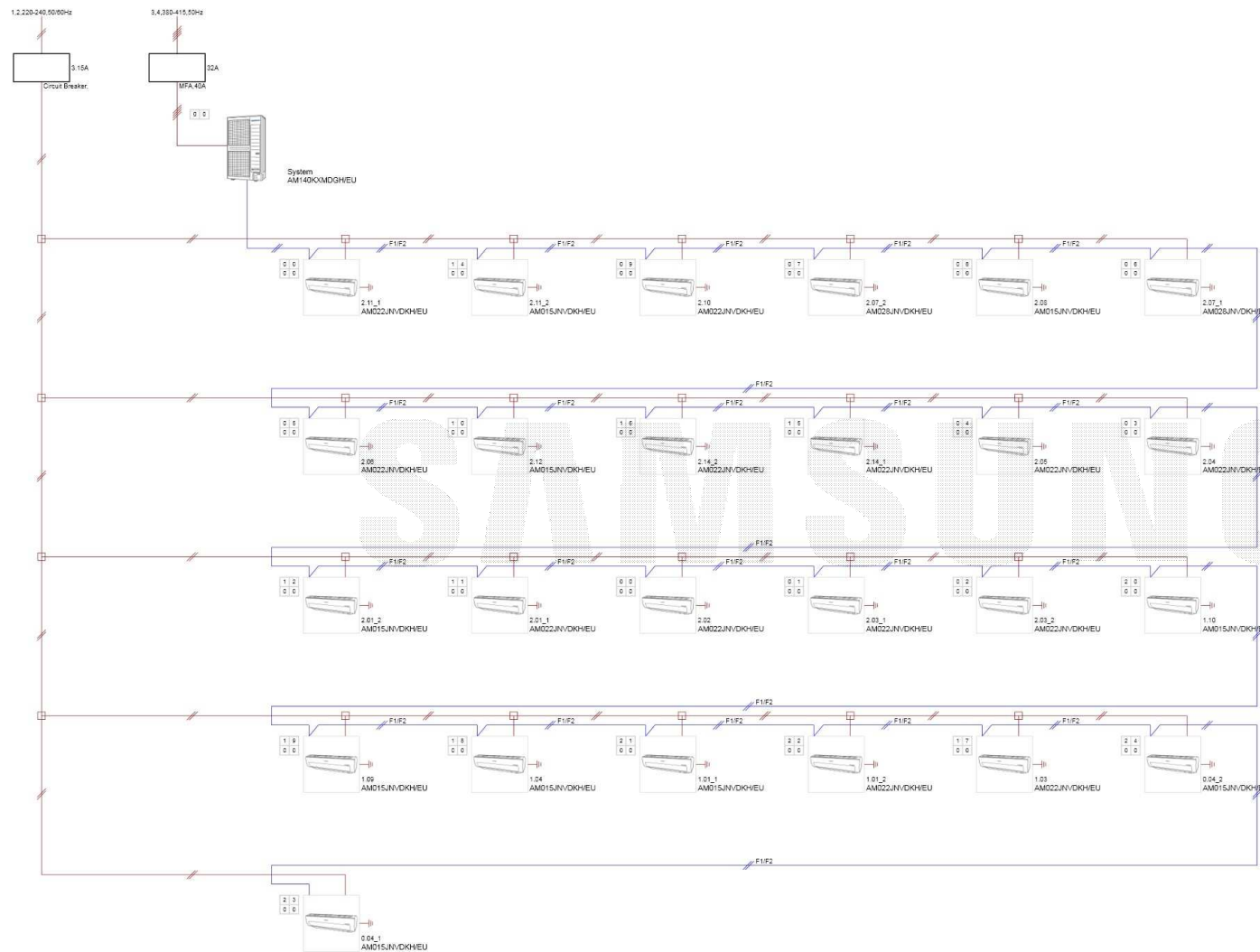
Total number of bendings : 36

2.1.4 Piping



- The system configuration may be different from the actual installation conditions, refer to the installation manual.

2.1.5 Wiring



- The system configuration may be different from the actual installation conditions, refer to the installation manual.

3. Specification

3.1 DVM

3.1.1 Outdoor units

Model name			AM140KXMDGH/EU		
Power supply			ø, #, V, Hz	3,4,380-415,50Hz	
Mode			-	HEAT PUMP	
Performance	HP/TON		HP/TON	14	
	Capacity(Nominal)	Cooling	kW	40	
			Kcal/h	34400	
		Cooling 46°C	kW	-	
			Kcal/h	N/A	
		Heating	kW	45	
			Kcal/h	38700	
	-20 °C	Heating(Low ambient temp.)	kW	-	
Power	Power Input(Nominal)	Cooling	kW	10.59	
		Heating	kW	9.88	
	Power Input (at specific)		kW	N/A	
	Current Input(Nominal)	Cooling	A	16.48	
		Heating	A	15.55	
	Max. Current Input		A	32	
	Circuit Breaker		A	40	
COP	Cooling		-	3.78	
	Heating		-	4.55	
Compressor	Type		-	SSC Scrollx1	
	Output		kW × n	6.76x1	
Fan	Type		-	Propeller	
	Output		W	244x2	
	Number of Units		EA	2	
	Air Flow Rate		CMM	180.00x2	
	External Static Pressure	Max.	mmAq	0	
Piping Connections	Liquid Pipe		ø,mm(in)	12.7(1/2")	
	Gas Pipe		ø,mm(in)	28.58(1 1/8")	
	Discharge Gas Pipe		ø,mm(in)	-(-)	
	Oil Equalizing Pipe		ø,mm(in)	N/A(N/A)	
Field Wiring	Power Source Wire		mm2	-	
	Transmission Cable		mm2	0.75/1.5	
Refrigerant	Type		-	R410A	
	Factory Charging		kg	4.800	
Sound	Sound pressure		dB(A)	62	
External Dimension	Net Weight		kg	162.000	
	Shipping Weight		kg	175.000	
	Net Dimensions (WxHxD)		mm	940.00x1630.00x460.00	
	Shipping Dimensions (WxHxD)		mm	1020.00x1820.00x575.00	
Operating Temp. Range	Cooling		°C	-5.00~52.00	
	Heating		°C	-25.00~24.00	

3.1.2 Indoor units

Model				AM015JNVDKH/EU	AM022JNVDKH/EU	AM028JNVDKH/EU		
Power supply			Ø, #, V, Hz	1,2,220-240,50/60Hz	1,2,220-240,50/60Hz	1,2,220-240,50/60Hz		
Performance	Capacity(Nominal)	Cooling	kW	1.5	2.2	2.8		
			Kcal/h	1290	1890	2410		
		Cooling (SHC)	kW	1	1.5	1.9		
			Kcal/h	860	1290	1630		
		Heating	kW	1.7	2.5	3.2		
			Kcal/h	1460	2150	2750		
Power	Power Input(Nominal)	Cooling	W	14	15	16		
		Heating		16	18	24		
	Current Input	Cooling	A	0.12	0.13	0.13		
		Heating		0.13	0.15	0.19		
Fan	Motor	Type	-	Crossflow Fan	Crossflow Fan	Crossflow Fan		
		Output	W	27	27	27		
		Number of unit	EA	1	1	1		
	Air Flow Rate	H/M/L (UL)	CMM	4.40/4.20/3.80	5.40/4.70/4.00	5.70/5.00/4.30		
	External Pressure	Min / Std / Max	mmAq	-	-	-		
Piping Connections	Liquid Pipe		Ø,mm(in)	6.35(1/4")	6.35(1/4")	6.35(1/4")		
	Gas Pipe		Ø,mm(in)	12.7(1/2")	12.7(1/2")	12.7(1/2")		
	Drain Pipe		Ø,mm	ID 18 HOSE	ID 18 HOSE	ID 18 HOSE		
Field Wiring	Power Source Wire		mm2	1.5~2.5	1.5~2.5	1.5~2.5		
	Transmission Cable		mm2	0.75/1.5	0.75/1.5	0.75/1.5		
Refrigerant	Type		-	R410A	R410A	R410A		
	Control Method		-	EEV INCLUDED	EEV INCLUDED	EEV INCLUDED		
Sound	Sound pressure	High / Low	dBA	28/24	33/25	36/25		
Dimensions	Net Weight		kg	8.100	8.100	8.200		
	Shipping Weight		kg	9.700	9.700	9.800		
	Net Dimensions (WxHxD)		mm	750.00x249.00x246.00	750.00x249.00x246.00	750.00x249.00x246.00		
	Shipping Dimensions (WxHxD)		mm	800.00x298.00x302.00	800.00x298.00x302.00	800.00x298.00x302.00		
Panel Size	Panel model		-					
	Panel Net Weight		kg					
	Shipping Weight		kg					
	Net Dimensions (WxHxD)		mm					
	Shipping Dimensions (WxHxD)		mm					

4. Controller

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5. Total Equipment List

Index	Model	Qty	Remark(Categories)	Unit Price	Amount
Outdoor unit	AM140KXMDGH/EU	1	DVM S Eco(NEW)	0	0
	AM015JNVDKH/EU	10	AR5000	0	0
Indoor unit	AM022JNVDKH/EU	13	AR5000	0	0
	AM028JNVDKH/EU	2	AR5000	0	0
Piping	MXJ-YA2812M	1	Y-Joint	0	0
	MXJ-YA2512M	5	Y-Joint	0	0
	MXJ-YA1509M	18	Y-Joint	0	0
Ref. Pipe	6.35(1/4")	53.09	m	0	0
	9.52(3/8")	78.53	m	0	0
	12.70(1/2")	55.62	m	0	0
	15.88(5/8")	73.43	m	0	0
	19.05(3/4")	2.77	m	0	0
	22.22(7/8")	2.33	m	0	0
	28.58(1 1/8")	2.53	m	0	0
Additional Ref. Amount	R410A	12.12	kg	0	0
Total					0

