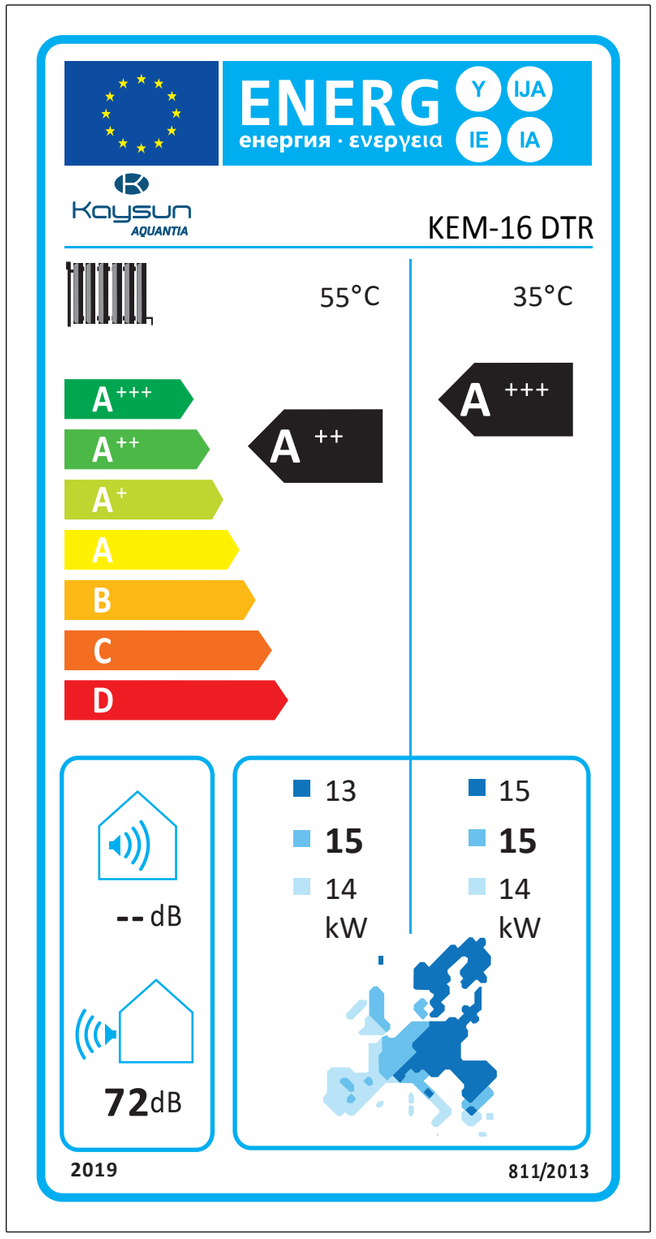

Mini Inverter heat pump space heating		Outdoor	KEM-16 DTR
(F) Tbivalent temperature	Tbiv	[°C]	-7.00
	Pdh (declared heating capacity)	[kW]	13.49
	COPd (declared COP)	-	2.87
Supplementary capacity at P_design	Psup (@Tdesignh: –10°C)	[kW]	1.18
Part load conditions space heating average climate medium temperature application			
(A) condition (-7°C)	Pdh (declared heating capacity)	[kW]	13.03
	COPd (declared COP)	-	2.16
	Cdh(degradation coefficient)	-	0.90
(B) condition (2°C)	Pdh (declared heating capacity)	[kW]	8.50
	COPd (declared COP)	-	3.55
	Cdh(degradation coefficient)	-	0.90
(C) condition (7°C)	Pdh (declared heating capacity)	[kW]	5.27
	COPd (declared COP)	-	5.05
	Cdh(degradation coefficient)	-	0.90
(D) condition (12°C)	Pdh (declared heating capacity)	[kW]	2.15
	COPd (declared COP)	-	4.52
	Cdh(degradation coefficient)	-	0.90
(E) Tol (temperature operating limit)	Tol (temperature operating limit)	[°C]	-10.00
	Pdh (declared heating capacity)	[kW]	12.07
	COPd (declared COP)	-	1.94
	WTOL (Heating water Operation Limit)	[°C]	65
(F) Tbivalent temperature	Tbiv	[°C]	-7.00
	Pdh (declared heating capacity)	[kW]	13.03
	COPd (declared COP)	-	2.16
Supplementary capacity at P_design	Psup (@Tdesignh: –10°C)	[kW]	2.63
Colder climate (Design temperature = –22°C)			
Space heating 35°C	Prated (declared heating capacity) @ –22°C	[kW]	15.1
	Seasonal space heating efficiency (ηs)	[%]	170.9
	Annual energy consumption	[kWh]	8,546

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Temperature application

Model	For medium - temperature application										
	Energy efficiency class	Unit sound power	average climate			colder climate			warmer climate		
			Rated heat output	Seasonal space heating energy efficiency	For space heating annual energy consumption	Rated heat output	Seasonal space heating energy efficiency	For space heating annual energy consumption	Rated heat output	Seasonal space heating energy efficiency	For space heating annual energy consumption
	-	dB	kW	%	kWh	kW	%	kWh	kW	%	kWh
KEM-16 DTR	A++	72	14.7	140.7	8470	13.5	124.3	10473	14.5	184.0	4153

Model	For low - temperature application										
	Energy efficiency class	Unit sound power	average climate			colder climate			warmer climate		
			Rated heat output	Seasonal space heating energy efficiency	For space heating annual energy consumption	Rated heat output	Seasonal space heating energy efficiency	For space heating annual energy consumption	Rated heat output	Seasonal space heating energy efficiency	For space heating annual energy consumption
	-	dB	kW	%	kWh	kW	%	kWh	kW	%	kWh
KEM-16 DTR	A+++	72	15.2	190.5	6509	15.1	170.9	8546	14.2	255.5	2935

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Mini Inverter heat pump space heating		Outdoor	KEM-16 DTR
Outdoor unit sound power (*)	Average climate low temperature application	dB	72
	Average climate medium temperature application	dB	72
Space heating	Energy efficiency class 35°C (Low temp. app.)	-	A+++
Space heating	Energy efficiency class 55°C (Medium temp. app.)	-	A++
Average climate (Design temperature = –10°C)			
Space heating 35°C	Prated (declared heating capacity) @ –10°C	[kW]	15.2
	Seasonal space heating efficiency (ηs)	[%]	190.5
	Annual energy consumption	[kWh]	6,509
Space heating 55°C	Prated (declared heating capacity) @ –10°C	[kW]	14.7
	Seasonal space heating efficiency (ηs)	[%]	140.7
	Annual energy consumption	[kWh]	8,470
Part load conditions space heating average climate low temperature application			
(A) condition (-7°C)	Pdh (declared heating capacity)	[kW]	13.49
	COPd (declared COP)	-	2.87
	Cdh(degradation coefficient)	-	0.90
(B) condition (2°C)	Pdh (declared heating capacity)	[kW]	8.59
	COPd (declared COP)	-	4.53
	Cdh(degradation coefficient)	-	0.90
(C) condition (7°C)	Pdh (declared heating capacity)	[kW]	5.55
	COPd (declared COP)	-	7.01
	Cdh(degradation coefficient)	-	0.90
(D) condition (12°C)	Pdh (declared heating capacity)	[kW]	3.73
	COPd (declared COP)	-	9.02
	Cdh(degradation coefficient)	-	0.90
(E) Tol (temperature operating limit)	Tol (temperature operating limit)	[°C]	-10.00
	Pdh (declared heating capacity)	[kW]	14.05
	COPd (declared COP)	-	2.65
	WTOL (Heating water Operation Limit)	[°C]	65

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Mini Inverter heat pump space heating		Outdoor	KEM-16 DTR
Space heating 55°C	Prated (declared heating capacity) @ –22°C	[kW]	13.5
	Seasonal space heating efficiency (ηs)	[%]	124.3
	Annual energy consumption	[kWh]	10,473
Part load conditions space heating colder climate low temperature application			
(A) condition (-7°C)	Pdh (declared heating capacity)	[kW]	9.26
	COPd (declared COP)	-	3.59
	Cdh(degradation coefficient)	-	0.90
(B) condition (2°C)	Pdh (declared heating capacity)	[kW]	5.76
	COPd (declared COP)	-	5.35
	Cdh(degradation coefficient)	-	0.90
(C) condition (7°C)	Pdh (declared heating capacity)	[kW]	3.76
	COPd (declared COP)	-	7.04
	Cdh(degradation coefficient)	-	0.90
(D) condition (12°C)	Pdh (declared heating capacity)	[kW]	3.72
	COPd (declared COP)	-	8.78
	Cdh(degradation coefficient)	-	0.90
(E) Tol (temperature operating limit)	Tol (temperature operating limit)	[°C]	-22.00
	Pdh (declared heating capacity)	[kW]	9.43
	COPd (declared COP)	-	2.00
	WTOL (Heating water Operation Limit)	[°C]	65
(F) Tbivalent temperature	Tbiv	[°C]	-15.00
	Pdh (declared heating capacity)	[kW]	12.30
	COPd (declared COP)	-	2.58
Supplementary capacity at P_design	Psup (@Tdesignh: –22°C)	[kW]	5.67
Part load conditions space heating colder climate medium temperature application			
(A) condition (-7°C)	Pdh (declared heating capacity)	[kW]	8.43
	COPd (declared COP)	-	2.77
	Cdh(degradation coefficient)	-	0.90

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Mini Inverter heat pump space heating		Outdoor	KEM-16 DTR
(B) condition (2°C)	Pdh (declared heating capacity)	[kW]	5.20
	COPd (declared COP)	-	3.74
	Cdh(degradation coefficient)	-	0.90
(C) condition (7°C)	Pdh (declared heating capacity)	[kW]	3.53
	COPd (declared COP)	-	5.19
	Cdh(degradation coefficient)	-	0.90
(D) condition (12°C)	Pdh (declared heating capacity)	[kW]	3.61
	COPd (declared COP)	-	6.61
	Cdh(degradation coefficient)	-	0.90
(E) Tol (temperature operating limit)	Tol (temperature operating limit)	[°C]	-22.00
	Pdh (declared heating capacity)	[kW]	7.52
	COPd (declared COP)	-	1.30
	WTOL (Heating water Operation Limit)	[°C]	65
(F) Tbivalent temperature	Tbiv	[°C]	-15.00
	Pdh (declared heating capacity)	[kW]	11.03
	COPd (declared COP)	-	1.85
Supplementary capacity at P_design	Psup (@Tdesignh: –22°C)	[kW]	6.00
Warmer climate (Design temperature = 2°C)			
Space heating 35°C	Prated (declared heating capacity) @ 2°C	[kW]	14.2
	Seasonal space heating efficiency (ηs)	[%]	255.5
	Annual energy consumption	[kWh]	2,935
Space heating 55°C	Prated (declared heating capacity) @ 2°C	[kW]	14.5
	Seasonal space heating efficiency (ηs)	[%]	184.0
	Annual energy consumption	[kWh]	4,153
Part load conditions space heating warmer climate low temperature application			
(B) condition (2°C)	Pdh (declared heating capacity)	[kW]	14.20
	COPd (declared COP)	-	3.22
	Cdh(degradation coefficient)	-	0.90
(C) condition (7°C)	Pdh (declared heating capacity)	[kW]	9.15
	COPd (declared COP)	-	5.41
	Cdh(degradation coefficient)	-	0.90

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Mini Inverter heat pump space heating		Outdoor	KEM-16 DTR
(D) condition (12°C)	Pdh (declared heating capacity)	[kW]	4.24
	COPd (declared COP)	-	8.56
	Cdh(degradation coefficient)	-	0.90
(E) Tol (temperature operating limit)	Tol (temperature operating limit)	[°C]	2.00
	Pdh (declared heating capacity)	[kW]	14.20
	COPd (declared COP)	-	3.22
	WTOL (Heating water Operation Limit)	[°C]	65
(F) Tbivalent temperature	Tbiv	[°C]	7.00
	Pdh (declared heating capacity)	[kW]	9.15
	COPd (declared COP)	-	5.41
Supplementary capacity at P_design	Psup (@Tdesignh: 2°C)	[kW]	0.00
Part load conditions space heating warmer climate medium temperature application			
(B) condition (2°C)	Pdh (declared heating capacity)	[kW]	13.62
	COPd (declared COP)	-	2.35
	Cdh(degradation coefficient)	-	0.90
(C) condition (7°C)	Pdh (declared heating capacity)	[kW]	9.35
	COPd (declared COP)	-	3.94
	Cdh(degradation coefficient)	-	0.90
(D) condition (12°C)	Pdh (declared heating capacity)	[kW]	4.26
	COPd (declared COP)	-	6.37
	Cdh(degradation coefficient)	-	0.90
(E) Tol (temperature operating limit)	Tol (temperature operating limit)	[°C]	2.00
	Pdh (declared heating capacity)	[kW]	13.62
	COPd (declared COP)	-	2.35
	WTOL (Heating water Operation Limit)	[°C]	65
(F) Tbivalent temperature	Tbiv	[°C]	7.00
	Pdh (declared heating capacity)	[kW]	9.35
	COPd (declared COP)	-	3.94
Supplementary capacity at P_design	Psup (@Tdesignh: 2°C)	[kW]	0.91

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Mini Inverter heat pump space heating		Outdoor	KEM-16 DTR
Product description	Air-to-water heat pump	Y/N	Yes
	Water-to-water heat pump	Y/N	No
	Brine-to-water heat pump	Y/N	No
	Low-temperature heat pump	Y/N	No
	Equipped with a supplementary heater	Y/N	Yes
	Heat pump combination heater	Y/N	Yes
Air to water unit	Rated airflow (outdoor)	[m^3/h]	5200
Brine/water to water unit	Rated water/brine flow (outdoor H/E)	-	/
Other	Capacity control	-	Inverter
	Poff (Power consumption Off mode)	[kW]	0.006
	Pto (Power consumption Thermostat off mode)	[kW]	0.018
	Psb (Power consumption Standby mode)	[kW]	0.006
	Pck (Power crankcase heater model)	[kW]	0.000
	Qelec (Daily electricity consumption)	[kWh]	/
	Qfuel (Daily fuel consumption)	[kWh]	/

Note：

a) represents the hydraulic module series ;
b) represents the m-thermal tank series ;
Product fiche data according to energy label directive 2010/30/EC regulation (EU) 811/2013.
Sound power measured according to the EN12102 under conditions of the EN14825.
Details and precautions on installation, maintenance and assembly can be found in the installation and or operation manuals.

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Mini Inverter heat pump space cooling		Outdoor	KEM-16 DTR
Outdoor unit sound power (*)	Average climate low temperature application	dB	71
	Average climate medium temperature application	dB	71
Space cooling 7°C	Prated (declared cooling capacity) @ 35°C	[kW]	14.2
	Seasonal space cooling efficiency (ηs)	[%]	202.48
	Annual energy consumption	[kWh]	1,661
Space cooling 18°C	Prated (declared cooling capacity) @ 35°C	[kW]	15.3
	Seasonal space cooling efficiency (ηs)	[%]	298.74
	Annual energy consumption	[kWh]	1,220
Part load conditions space cooling：low temperature application@7°C			
(A) condition (35°C)	Pdc (declared cooling capacity)	[kW]	14.22
	EERd (declared EER)	-	2.96
	Cdc(degradation coefficient)	-	0.90
(B) condition (30°C)	Pdc (declared cooling capacity)	[kW]	10.62
	EERd (declared EER)	-	4.16
	Cdc(degradation coefficient)	-	0.90
(C) condition (25°C)	Pdc (declared cooling capacity)	[kW]	7.11
	EERd (declared EER)	-	5.72
	Cdc(degradation coefficient)	-	0.90
(D) condition (20°C)	Pdc (declared cooling capacity)	[kW]	3.06
	EERd (declared EER)	-	6.95
	Cdc(degradation coefficient)	-	0.90

Mini Inverter heat pump space cooling		Outdoor	KEM-16 DTR
Part load conditions space cooling : medium temperature application@18°C			
(A) condition (35°C)	Pdc (declared cooling capacity)	[kW]	15.34
	EERd (declared EER)	-	4.33
	Cdc(degradation coefficient)	-	0.90
(B) condition (30°C)	Pdc (declared cooling capacity)	[kW]	11.44
	EERd (declared EER)	-	6.14
	Cdc(degradation coefficient)	-	0.90
(C) condition (25°C)	Pdc (declared cooling capacity)	[kW]	7.93
	EERd (declared EER)	-	8.95
	Cdc(degradation coefficient)	-	0.90
(D) condition (20°C)	Pdc (declared cooling capacity)	[kW]	3.89
	EERd (declared EER)	-	9.38
	Cdc(degradation coefficient)	-	0.90
Air to water unit	Rated airflow (outdoor)	$[m^3/h]$	5200
Brine/water to water unit	Rated water/brine flow (outdoor H/E)	-	/
Other	Capacity control	-	Inverter
	Poff (Power consumption Off mode)	[kW]	0.006
	Pto (Power consumption Thermostat off mode)	[kW]	0.006
	Psb (Power consumption Standby mode)	[kW]	0.006
	Pck (Power crankcase heater mode)	[kW]	0.000
	Qelec (Daily electricity consumption)	[kWh]	/
	Qfuel (Daily fuel consumption)	[kWh]	/

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Outdoor unit	Ambient Temperature：35/24 Water temperature：23/18			Ambient Temperature：35/24 Water temperature：12/7			Ambient Temperature：7/6 Water temperature：30/35			Ambient Temperature：2/1 Water temperature：30/35		
	Capacity kW	Power input kW	EER	Capacity kW	Power input kW	EER	Capacity kW	Power input kW	COP	Capacity kW	Power input kW	COP
KEM-16 DTR	15.40	3.667	4.20	14.00	4.828	2.90	16.00	3.556	4.50	14.50	4.462	3.25

Outdoor unit	Ambient Temperature：-7/-8 Water temperature：30/35			Ambient Temperature：7/6 Water temperature：40/45			Ambient Temperature：2/1 Water temperature：40/45			Ambient Temperature：-7/-8 Water temperature：40/45		
	Capacity kW	Power input kW	COP	Capacity kW	Power input kW	COP	Capacity kW	Power input kW	COP	Capacity kW	Power input kW	COP
KEM-16 DTR	13.50	5.000	2.70	16.20	4.696	3.45	14.30	5.296	2.70	13.50	6.000	2.25

Outdoor unit	Ambient Temperature：7/6 Water temperature：47/55			Ambient Temperature：2/1 Water temperature：47/55			Ambient Temperature：-7/-8 Water temperature：47/55		
	Capacity kW	Power input kW	COP	Capacity kW	Power input kW	COP	Capacity kW	Power input kW	COP
KEM-16 DTR	16.00	5.614	2.85	13.50	5.870	2.30	12.80	6.244	2.05

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