

Datasheet: 02037474 **Position:** 747402
Project: McDonalds DK - **Side:** 1 by 10
Syddjurs
Location: **Date:** 15.05.2025
Unit: AHU 02 **Tender Position:**



REV1: Electronic expansion valve kits mounted on the operating side. Changing the chamber length.

Clerk:	S.Reifenröther	Quantity:	1 Piece
Construction:	HYD S Inside installation		
Base Frame:	inside galvanized 80 mm, 137,04 kg		
Base Frame top unit:	Without		
Total Weight:	Ca. 1375 kg		
Thermal Decoupling:	T2/TB4		
CAL (R)@-400 Pa:	0,327 dm ³ /(sm ²)		
CAL (R)@+400 Pa:	0,403 dm ³ /(sm ²)		
Accessories:	Transport Steel Pipes insulation strips		

Cert. No:	02.03.036
Efficiency Factor Winter:	0,91
Efficiency Factor Summer:	-
Reference city:	DK-Hvide Sande
Dry bulb temperature:	25,30
Wet bulb temperature:	20,20
Dew point temperature:	17,80



Datasheet: 02037474 Position: 747402
 Project: McDonalds DK - Syddjurs Side: 3 by 10
 Location: Date: 15.05.2025
 Unit: AHU 02 Tender Position:



REV1: Electronic expansion valve kits mounted on the operating side. Changing the chamber length.

Plate Heat Exchanger GS/GS/GS Weight: 382 kg Length: 1497 mm Pressure Drop: 146 Pa

Brand: Rox Type: KV-100/P1/0990/BSK116,H
 Actuator: Without Diagonal: mm 1387

Technical Data Supply Air Extract Air

		Supply Air	Extract Air
Operating Mode:		Winter	
Air Volume:	m³/h	4800	4300
Temp. In:	°C	-12	22
Rel. Humidity In:	%	90	30
Temp. Out:	°C	13,3	-1,5
Rel. Humidity out:	%	12,9	100
Heat Recovery dry:	%	69,3	77,1
Heat Recovery wet:	%	74,4	69,3
Condensate:	kg/h	0	8
Pressure Drop dry:	Pa	145,99	124,36
Pressure Drop wet:	Pa	0	0
Pressure drop standard density:	Pa	159	132
Air velocity:	m/s	1,7	1,5
Total Heat Load:	kW	40,8	
Operating Mode:		Summer	
Air Volume:	m³/h	4800	4300
Temp. In:	°C	34	26
Rel. Humidity In:	%	35	50
Temp. Out:	°C	28,4	32,3
Rel. Humidity out:	%	48,1	34,8
Heat Recovery dry:	%	70,3	78,2
Heat Recovery wet:	%	70,3	78,2
Condensate:	kg/h	0	0
Pressure Drop dry:	Pa	165,07	136,08
Pressure Drop wet:	Pa	0	0
Pressure drop standard density:	Pa	159	132
Air velocity:	m/s	1,7	1,5
Total Heat Load:	kW		9,2

Operation Point according to EN13053:2020-05

Temp. In:	°C	5,00	25,00
relative humidity %:	%	0,00	0,00
Pressure Drop dry:	Pa	152	156
PeI HR:	kW	0,63	
Power Digit:	-	37,51	
Energy Efficiency:	%	71,54	
electrical Power (auxiliary power):	W	0,00	
Heat Recovery:	%	73,50	
Heat Recovery Class EN13053:2012-02:	-	H1	

Design: Access Door Condensate Trough: RAL/V2A (AISI304)
 Lockers: Lockers Condensate Drain: Yes
 Hinges: 3D-Hinges

Accessories

Item Number	Description	Weight
	Siphon SN	

Software ALAG
 [27.03.2025]

Version 1.24/4.2



Management System
 ISO 9001:2015
 www.tuv.com
 ID 0910083041

Datasheet: 02037474 Position: 747402
 Project: McDonalds DK - Syddjurs Side: 4 by 10
 Location: Date: 15.05.2025
 Unit: AHU 02 Tender Position:



REV1: Electronic expansion valve kits mounted on the operating side. Changing the chamber length.

(SUP) Cooler/Heater	GS/GS/GS	Weight: 80 kg	Length: 235 mm	Pressure Drop: 117 Pa
Brand:	Rox	Type:	XRCAF 0800 T014 04 F30 E004 2*5/8 2*7/8 (R2) (8mm)	
Pipes:	Copper 1/2" 0,35 mm	Weight Heat Exchanger:	kg	34,00
Fin:	Aluminium	Connections:	Access Side	
Collector:	Copper	Connection Inlet:	2*16mm	
Frame:	Aluminium	Connection Outlet:	2*22mm	
Separation (A x B):	mm 37,5 x 32,48 mm	Finned height:	mm	525
Quantity Pipe Rows:	4	Finned width:	mm	800
Fin Distance:	mm 3			

Haupt-Betriebspunkt

Air

Air Volume:	m³/h	4800
Pressure Drop:	Pa	117
Temp. In:	°C	29,4
Rel. Humidity In:	%	48
Temp. Out:	°C	18
Rel. Humidity out:	%	88
Capacity:	kW	22,96
Surface Reserve:	%	15
Air velocity:	m/s	3,17

Medium

Heat Transfer Medium:		R32
Mass Flow:	kg/h	333,0
Pressure Drop:	kPa	15,13
Evaporation temperature:	°C	8,5
Condensation temperature:	°C	45
Charge:	l	5,6
Medium Velocity:	m/s	2,72 / 5,52

Zusatz-Betriebspunkt

Air

Air Volume:	m³/h	4800
Pressure Drop:	Pa	90
Temp. In:	°C	10
Rel. Humidity In:	%	24
Temp. Out:	°C	24
Rel. Humidity out:	%	10
Capacity:	kW	22,72
Surface Reserve:	%	29
Air velocity:	m/s	3,22
Design:		Fixed Panel

Medium

Heat Transfer Medium:		R32
Mass Flow:	kg/h	273,0
Pressure Drop:	kPa	2,69
Evaporation temperature:	°C	8,5
Condensation temperature:	°C	45
Charge:	l	5,6
Medium Velocity:	m/s	2,26 / 0,15

Condensate Trough: RAL/V2A (AISI304)

Accessories

Item Number	Description	Weight
Heat Pump:	2x Samsung AM 040DXMDNG The heat pumps are mounted on a separate base frame	
EEV-Kit:	2x Samsung MXD K050AN The EEV-Kits are mounted on a console on the operating side of the system	
Gas-Detector:	Gas Detector, MGS450 IP66 R32 1KPPM	



Datasheet: 02037474 Position: 747402
 Project: McDonalds DK - Syddjurs Side: 5 by 10
 Location: Date: 15.05.2025
 Unit: AHU 02 Tender Position:



REV1: Electronic expansion valve kits mounted on the operating side. Changing the chamber length.

(SUP) Droplet Eliminator GS/GS/GS Weight: 55 kg Length: 380 mm Pressure Drop: 22 Pa
 Brand: Rox
 Material: PPTV Guiding Rail: V2A (AISI304)
 Design: Access Panel Condensate Trough: RAL/V2A (AISI304)
 Lockers: Lockers Condensate Drain: Yes

Accessories

Item Number	Description	Weight
	Siphon SN	

(SUP) Fan GS/GS/GS Weight: 118 kg Length: 765 mm Pressure Drop: 0 Pa
 Brand: Rox Construction: Free Running
 Fan Type: 1 x GKHM 355-CII.118.6FF Drivetrain: Motor in Airstream
 SFP-Data with FC: m³/s 1313 SFP-Class with FC: SFP3
 Air Volume: m³/h 4800 Motor type: EC
 ΔP ext.: Pa 300 Voltage / Frequency: V/Hz 3~200-240 / 50/60
 Dyn. Pressure Drop: Pa 47 Nominal Power: kW 2,77
 Installation loss: Pa 28 Nominal Current: A 7,25
 Static Pressure Drop: Pa 798 Nominal Rotation Speed: 1/min 3115
 Total Pressure Drop: Pa 845 Frequency Converter: Integrated
 electrical Power Input: kW 1,75 / P1 Nozzle Pressure Difference: Pa 1045,29
 Reference Power Input: kW 2,28 k-Factor: m²s/h 115
 Nominal Rotation Speed: 1/min 2644
 Maximum Rotation Speed: 1/min 3115
 Rotation Speed Spare: % 15,04
 Total Efficiency: % 64,40
 Static System Efficiency: % 60,80
 Total Efficiency in Efficiency Optimum: % 69
 Air Volume Measuring Point: Air Volume Measuring Point with Pressure Sensor DPA 2500
 Total Sound Power level: dB(A) 80,4

f	125	250	500	1000	2000	4000	8000	Hz
Lw o	53	77	77	78	76	75	72	dB
Lw i	47	73	74	73	72	71	68	dB

Design: Access Door
 Lockers: Lockers
 Hinges: 3D-Hinges
 Hints: The Installation losses of the fan are considered in the Fan Performances
 Designed for wet conditions
 Motor wired to Repair Switch



Datasheet: 02037474 **Position:** 747402
Project: McDonalds DK - Syddjurs **Side:** 6 by 10
Location: **Date:** 15.05.2025
Unit: AHU 02 **Tender Position:**



REV1: Electronic expansion valve kits mounted on the operating side. Changing the chamber length.

(SUP) Air Outlet Section GS/GS/GS **Weight: 32 kg** **Length: 1 mm** **Pressure Drop: 19 Pa**

Connection:

Layer: Front Side
Material: galvanized
Design: Damping Connection VDI6022
Potential Equalisation: Yes
Dimensions (W x H): 956 x 360

Grating: Without

Design: Fixed Panel

Supply Air Acoustic Data

Supply Air Connector

Frequency f in Hz	125	250	500	1k	2k	4k	8k	Sum
Residue Sound Power in dB	52	76	76	77	75	74	71	83
Residue Sound Power in dB(A)	36	68	73	77	77	75	70	82

Outside Air Connector

Frequency f in Hz	125	250	500	1k	2k	4k	8k	Sum
Residue Sound Power in dB	32	53	54	49	39	40	36	57
Residue Sound Power in dB(A)	16	44	50	49	40	41	35	54

Surrounding Acoustic Emission (Casing Emission)

Wall Thickness: 53 mm

Frequency f in Hz	125	250	500	1k	2k	4k	8k	Sum
Residue Sound Power in dB	37	69	65	57	49	37	31	71
Residue Sound Power in dB(A)	21	60	62	57	50	38	30	65

The Acoustic Data refer only on the inside fan
Possibly the Supply Air and Extract Air Data have to be added together



Datasheet: 02037474 **Position:** 747402
Project: McDonalds DK - **Side:** 8 by 10
 Syddjurs
Location: **Date:** 15.05.2025
Unit: AHU 02 **Tender Position:**



REV1: Electronic expansion valve kits mounted on the operating side. Changing the chamber length.

(EXT) Fan		GS/GS/GS	Weight: 120 kg	Length: 730 mm	Pressure Drop: 0 Pa
Brand:	Rox		Construction:	Free Running	
Fan Type:	1 x GKHM 355-CII.118.6FF IE Gen3		Drivetrain:	Motor in Airstream	
SFP-Data with FC:	m³/s 1038		SFP-Class with FC:	SFP2	
Air Volume:	m³/h 4300		Motor type:	EC	
ΔP ext.:	Pa 300		Voltage / Frequency:	V/Hz 3~200-240 / 50/60	
Dyn. Pressure Drop:	Pa 38		Nominal Power:	kW 2,77	
Installation loss:	Pa 23		Nominal Current:	A 7,25	
Static Pressure Drop:	Pa 619		Nominal Rotation Speed:	1/min 3115	
Total Pressure Drop:	Pa 657		Frequency Converter:	Integrated	
electrical Power Input:	kW 1,24 / P1		Nozzle Pressure Difference:	Pa 838,87	
Reference Power Input:	kW 1,63		k-Factor:	m²s/h 115	
Nominal Rotation Speed:	1/min 2344				
Maximum Rotation Speed:	1/min 3115				
Rotation Speed Spare:	% 24,68				
Total Efficiency:	% 63,30				
Static System Efficiency:	% 59,60				
Total Efficiency in Efficiency Optimum:	% 69				
Air Volume Measuring Point:	Air Volume Measuring Point with Pressure Sensor DPA 2500				
Total Sound Power level:	dB(A) 77,4				

f	125	250	500	1000	2000	4000	8000	Hz
Lw o	50	74	74	75	73	72	69	dB
Lw i	44	70	71	70	69	68	65	dB

Design: Access Door
Lockers: Lockers
Hinges: 3D-Hinges
Hints: The Installation losses of the fan are considered in the Fan Performances
 Designed for wet conditions
 Motor wired to Repair Switch

Datasheet: 02037474 **Position:** 747402
Project: McDonalds DK - **Side:** 9 by 10
Syddjurs
Location: **Date:** 15.05.2025
Unit: AHU 02 **Tender Position:**



REV1: Electronic expansion valve kits mounted on the operating side. Changing the chamber length.

(EXT) Air Outlet Section **GS/GS/GS** **Weight: 127 kg** **Length: 534 mm** **Pressure Drop: 33 Pa**

Connection:

Layer: Roof
Material: galvanized
Design: Damping Connection VDI6022
Potential Equalisation: Yes

Damper Size:

Assembly: Inside
Material: Aluminium
Design: Gear
Tightness: Class 2
Shaft Position: Inside
Actuator: Open / Close 24V
Dimensions (W x H x D): 762 x 314 x 115

Dimensions (W x H) 762 x 314

Grating: Without

Design: Access Door
Lockers: Lockers
Hinges: 3D-Hinges

Condensate Trough: RAL/V2A (AISI304)
Condensate Drain: Yes

Accessories

Item Number	Description	Weight
	Wurfdüse	20
	Siphon DS	

Extract Air Acoustic Data

Exhaust Air Connection

	125	250	500	1k	2k	4k	8k	Sum
Frequency f in Hz								
Residue Sound Power in dB	44	66	70	72	70	69	66	78
Residue Sound Power in dB(A)	28	58	67	72	72	70	65	77

Extract Air Connection

	125	250	500	1k	2k	4k	8k	Sum
Frequency f in Hz								
Residue Sound Power in dB	38	62	61	55	48	46	41	65
Residue Sound Power in dB(A)	22	53	57	55	49	47	40	61

Surrounding Acoustic Emission (Casing Emission)

Wall Thickness: 53 mm

	125	250	500	1k	2k	4k	8k	Sum
Frequency f in Hz								
Residue Sound Power in dB	34	66	62	54	46	34	28	68
Residue Sound Power in dB(A)	18	57	59	54	47	35	27	62

The Acoustic Data refer only on the inside fan
Possibly the Supply Air and Extract Air Data have to be added together



Datasheet: 02037474 **Position:** 747402
Project: McDonalds DK - Syddjurs **Side:** 10 by 10
Location: **Date:** 15.05.2025
Unit: AHU 02 **Tender Position:**



REV1: Electronic expansion valve kits mounted on the operating side. Changing the chamber length.

Unit Type	NRVU	Construction of Unit	BVU
Non residential ventilation unit		Bidirectional ventilation unit	

Total unit characteristics:	
Type of HR:	Plate Heat Exchanger
Temperature ratio dry:	73,50 %
Highest External Leakage rate (+400Pa/-400Pa):	0,27 %
Highest Internal Leakage rate (250Pa):	0,03 %

SFPint:	808,07 [W/(m³/s)]
SFPint max. 2016:	1205,42 [W/(m³/s)]
SFPint max. 2018:	925,42 [W/(m³/s)]



Supply air features		Extract air features	
Air Volume:	1,33 m³/s	Air Volume:	1,19 m³/s
ΔP ext:	300 Pa	ΔP ext:	300 Pa
ΔP s, add:	233 Pa	ΔP s, add:	64 Pa
ΔP s, int:	284 Pa	ΔP s, int:	270 Pa
Filter:	ePM1 60% (F7)	Filter:	ePM1 60% (F7)
Filter pressure drop beginning:	85 Pa	Filter pressure drop beginning:	76 Pa
Heat recovery pressure drop dry:	152 Pa	Heat recovery pressure drop dry:	156 Pa
Fan pressure drop total:	817 Pa	Fan pressure drop total:	634 Pa
Fan pressure drop dynamic:	47 Pa	Fan pressure drop dynamic:	38 Pa
Fan electric power input:	1,75 kW	Fan electric power input:	1,24 kW
Fan efficiency static:	60,80 %	Fan efficiency static:	59,60 %
SFPv:	1172,70 [W/(m³/s)]	SFPv:	895,97 [W/(m³/s)]

Hints	
Filter warn indication	The Filter warn indication is realized by a differential pressure manometer. According to the guideline 1253/2014/EU the filter monitoring has to be mounted onsite if it is not contained in the equipment.
Thermal Bypass	The required thermal bypass of the HRS according to the guideline 1253/2014/EU is realized by a bypass of the HR-System.
Drivetrain	If the unit is ordered and delivered without DDC, a governor or a cascade drive is provided to fulfil the requirements of the guideline 1253/2014/EU.
Disposal note	Further information under www.rox-online.de