



BROAD Group / BSB EUROPE

CA : 1 Milliard €

Usine :

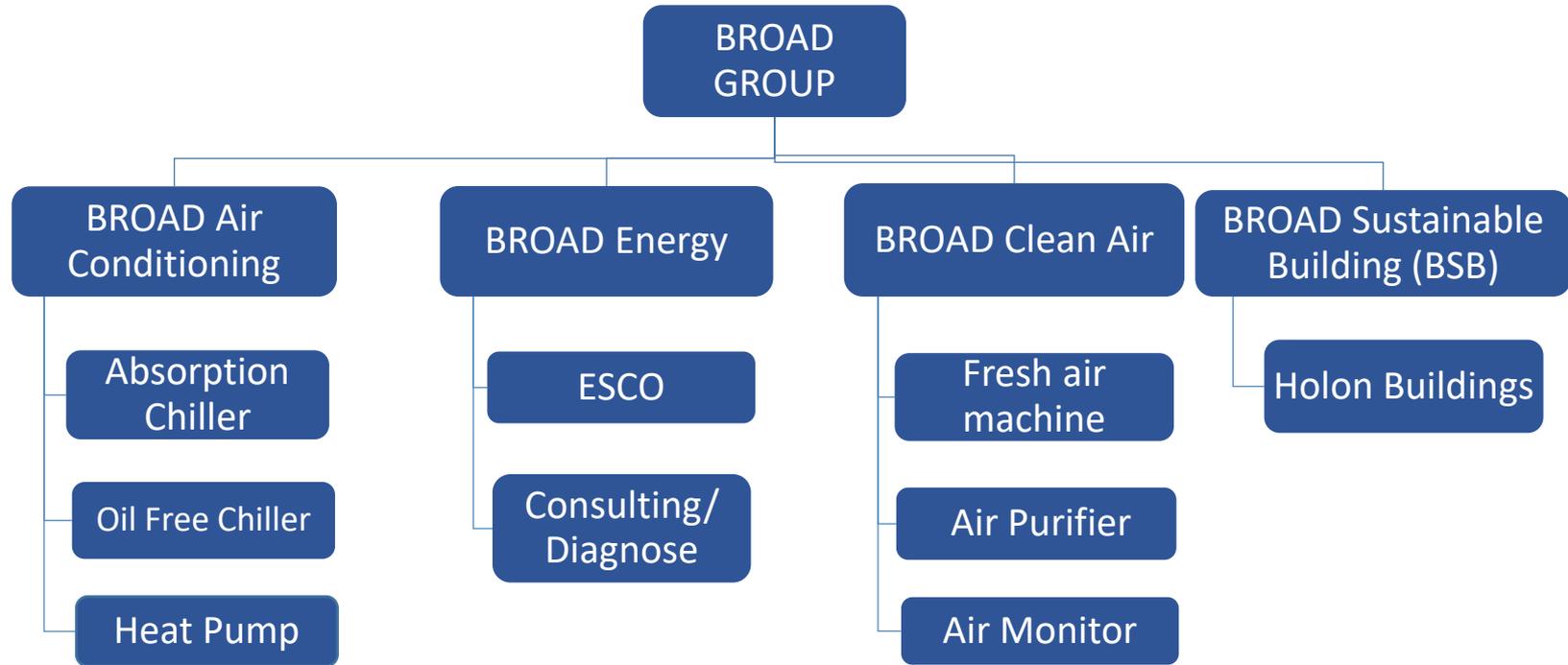
Changsha Chine



Siège Européen
SAV

Cergy France

www.broadeu.fr





BDH/BDS Eau chaude/Vapeur

Gamme de 150 KW à 20 MW

Refroidisseurs et PACS à Absorption

Eau/Bromure de lithium



BS Vapeur



BE Gaz de combustion



BZHE Multi-Energies



BZ Gaz

➤ Source Primaire:

-Eau chaude

- (Simple effet : 70 à 180° C / double effet : 150 à 180° C)

-Vapeur

-(Simple effet : 0,1 à 10 BarG MPaG / double effet : 3 à 10 BarG)

-Fumée

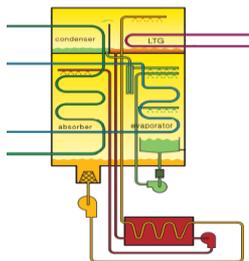
-(Simple effet : 250 à 500 ° C / Double effet : 350 à 600° C)

-Brûleur GAZ

COP Simple effet

COP Froid 0,7

COP Chaud 1,7



➤ T° Source Basse Température ou Eau Glacée

T° Eau glacée jusqu'à 5° C

➤ T° Source Moyenne Température ou Eau Chaude

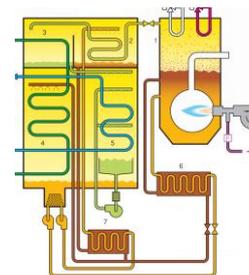
T° Eau Chaude jusqu'à 90° C

COP Double effet

COP Froid 1,5

COP Chaud 2,5*

*Temp maxi 45° C







PLATEFORME D'ESSAI



COVESTRO TARRAGONE Espagne



CHIMIE

14 Milliards € CA



- **MDI** (*Methylene diphenyl 4,4'-diisocyanate*) Monomère de départ utilisé pour la production industrielle de polyuréthane.
- **Acide chlorydrique**
- **Soude caustique**



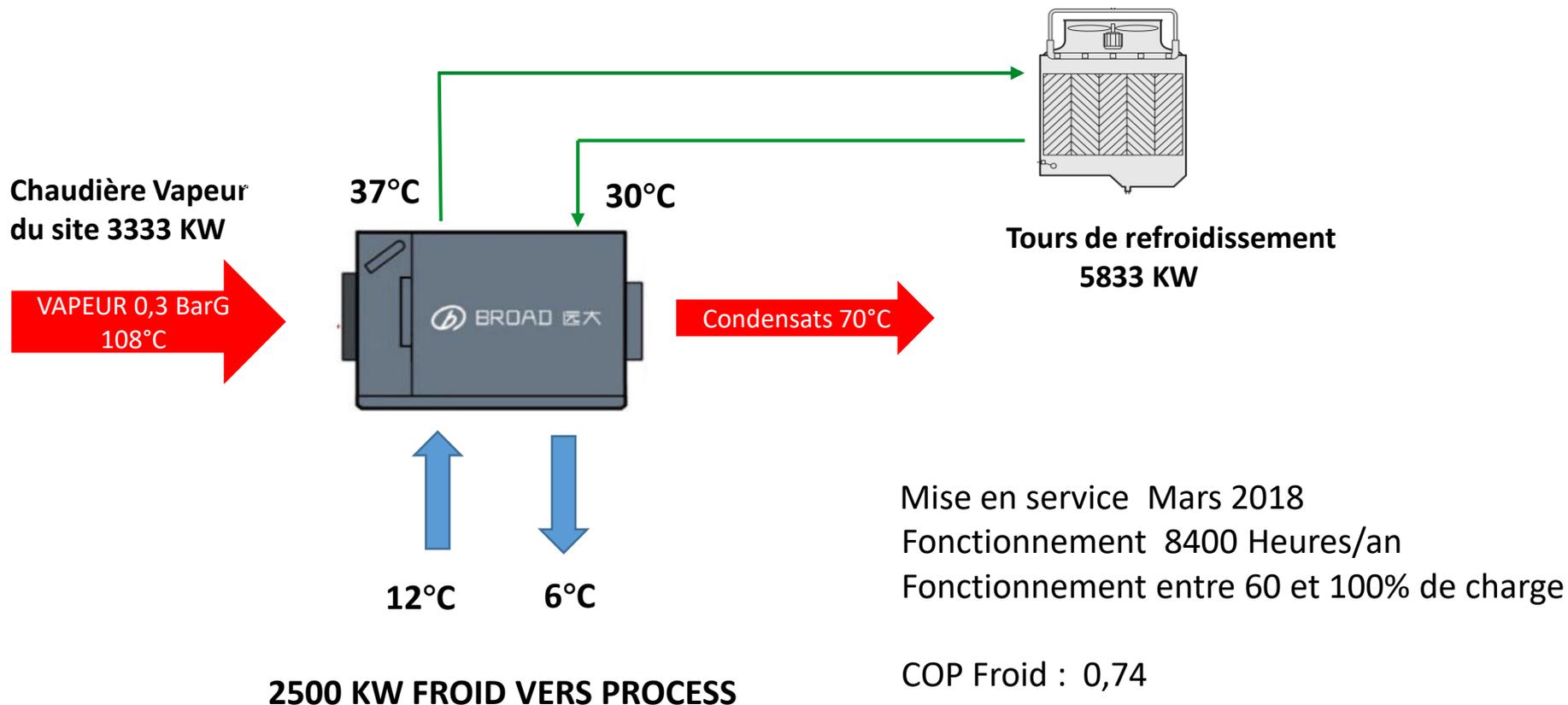
Refroidisseur BROAD



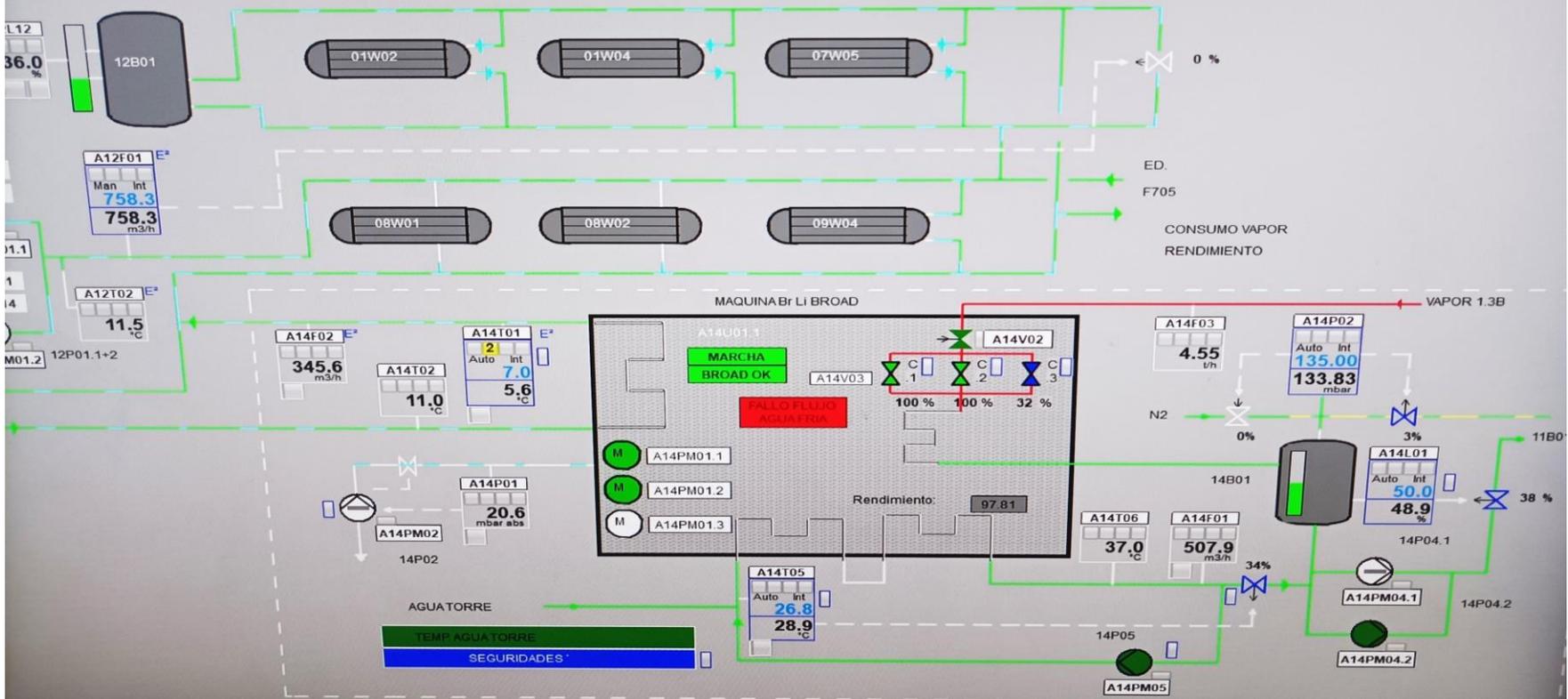
BDS 300 2500 KW Froid Vapeur 0,3 BarG – 30/37°C – 6/12°C



REFROIDISSEUR SIMPLE EFFET BDS 300 2500 KW FROID



094/PV	A09Q94-Analizador pH ENTRADA 9B06 Prio High Low limit viol										17/10/2023 14		
CA21_TORRES	2	I				NE31_NEUTRALIZACION	1				DS11_DESTILACION	2	S
DS21_STRIPING		I				VA11_VACIO_MDA	1	2			DS22_CONTROL_PH	1	I
TA11_LOG	1	2	I	X		SIST_AUX_MDA	1	2	I		ACCESORIOS_MDA	1	0
Diagnostics		M	S										



BROAD ENFRIADORA DE ABSORCIÓN POR
ACCIONAMIENTO INDIRECTO
远大余热利用非电空旗

MODELO 订货型号	BDS215X10.03-37/30-6/12-300		LÍMITE PRESIÓN AGUA DE TORRE 冷却水压限	0.8	MPa
N° SERIE	出厂编号	17100287	PRESIÓN NOMINAL VAPOR 额定蒸汽压力	0.03	MPa
FECHA DE FABRICACIÓN	制造日期	2017.10	LÍMITE PRESIÓN VAPOR 蒸汽压限	0.033	MPa
INSPECTOR	质检员号	QA04	CONSUMO MÁX. VAPOR 蒸汽耗量	5500	kg/h
CAPACIDAD REFRIGERACIÓN	制冷量	2500 kW	TENSIÓN/FASES/FRECUENCIA 电源	3P/N/PE380V50Hz	
TEMP. SALIDA AGUA ENFRIADA 冷水出口温度		6 °C	CONSUMO POTENCIA NOMINAL 额定功率	9.0	kW
TEMP. ENTRADA AGUA ENFRIADA 冷水入口温度		12 °C	INTENSIDAD NOMINAL 额定电流	27.2	A
CAUDAL AGUA ENFRIADA 冷水流量		358.3 m³/h	PROTECCIÓN 防护等级	IP54	
LÍMITE PRESIÓN AGUA ENFRIADA 冷水压限		0.8 MPa	TIPO DE INHIBIDOR 缓蚀剂类型	M	
TEMP. SALIDA AGUA DE TORRE 冷却水出口温度		37 °C	PESO MÁX. EXPEDICIÓN EQUIPO 大件运输重量	22.3	t
TEMP. ENTRADA AGUA DE TORRE 冷却水入口温度		30 °C	PAÍS DE DESTINO 销往国	SPAIN	
CAUDAL AGUA DE TORRE 冷却水流量		737 m³/h			

Made in China 中国制造



SÓLO PARA INSTALACIÓN INTERIOR
请在室内安装

SERVICE CONTACT INFORMATION
TEL: 0086-731-84086265 Email: serviceinfo@broad.net



BROAD AIR CONDITIONING
远大空调有限公司

BROAD Town, Changsha, Hunan, China 长沙远大空调有限公司
TEL: 0086-731-84086265 FAX: 0086-731-84086267
http://www.broad.com.cn ZIP: 410138



BDS215X10. 03-37/30-6/12-300

BROAD BDS

COVESTRO ESPANA

Enfriadora, refrigeración

2023.

13

Chiller monitor

Chiller setting

Chiller object

System object

BAS and network

Record and status

I/O Check

Other setting

Exit

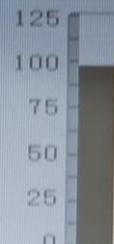
Language

	Situación °C	Puesta °C
Salida de agua de refrigeración	6.0	6.0
Entrada de agua de refrigeración	11.6	
Entrada de agua de torre	29.5	30.0
Salida de agua de torre	37.4	
Generador	84.1	83.0
Entrada de fuente de calor	108.3	
Salida de fuente de calor	69.7	
Bomba de disolución	34.2 Hz	
Bomba de refrigerante	35.0 Hz	
Bomba de absorción		

Nivel de refrigerant



Capacidad de refrigeración



Apertura de válvula de fuente de calor A 42 %
 Apertura de válvula de fuente de calor B 42 %
 Apertura de válvula de fuente de calor C 42 %

ON Encender OFF Dilución



G-pump on

R-pump on

35.0 Hz

A-pump on

Up

Debug

G-pu

R-pu

A-pu

Ne

At

NON-ELECTRIC CHILLER COMMISSIONING REPORT

Secret level : Public Secret Confidential Top Secret

User Name: <u>Covestro Tamaqua</u>	Client Code: <u>0249710028</u>	Contacts: <u>Haller</u>	Tel: <u>003465044336</u>
Unit Model: <u>BD5245X0.03</u>	Unit Serial No.: <u>17100287</u>	Fax: <u>-</u>	Monitoring ID: <u>000003702238</u>
Service Branch: <u>EURPBE</u>	Service Engineer: <u>LU XUZUN</u>	Tel: <u>0033681341748</u>	Commissioning Date: <u>22/09/2023</u>
Machine Room: <input type="checkbox"/> Basement <input type="checkbox"/> Ground <input type="checkbox"/> Roof top <input type="checkbox"/> Outdoor Others: <u>-</u>	Control Mode: <input checked="" type="checkbox"/> Linkage <input type="checkbox"/> BAS Others: <u>-</u>	Commissioning: <input checked="" type="checkbox"/> Cooling <input type="checkbox"/> Heating <input type="checkbox"/> Hot water	

Sort	No	Commissioning Items	Unit	Conclusion
	1	Control parameter setting finished	Unit	OK
	2	Chilled W. outlet temp.	°C	6.0
	3	Heating W. outlet temp.	°C	-
	4	Hot W. outlet temp.	°C	-
	5	Middle temp. water outlet	°C	-
	6	High temp. water outlet	°C	-
	7	Cooling dilution off time	min	60
	8	Heat source outlet temp. limit	°C	-
	9	HTG(Generator) upper limit temp.	°C	9.0
	10	Cooling W. inlet temp.	°C	7.8
	11	S-pump Max. frequency	Hz	39.7
	12	L-pump Min/ Max. frequency	Hz	7.0
	13	Cooling dilution off HTG temp.	°C	6.0
	14	Chilled low temp. W. i/O temp.	°C	9.0/6.5
	15	Chilled W. flow rate	m³/h	263/51
	16	Cooling (high temp.) W. i/O temp.	°C	5.80
	17	Cooling W. flow rate	m³/h	157.5
	18	Cooling capacity	10³kcal/h	-
	19	Fuel(Heat source) consumption	m³ (kg)/h	-
	20	Fuel heating value	kcal/ m³ (kg)	-
	21	HTG temp.	°C	-
	22	LTG(Generator) temp.	°C	69.7
	23	HTGLTG S-pump freq. at full load	Hz	32.2
	24	HTG level fluctuation	times/h	54.2
	25	Exhaust(Heat source outlet) temp.	°C	-
	26	HTG(Generator) temp.	%/°C	-
	27	LTG concentration/temp.	%/°C	-
	28	Diluted solution concentration/temp.	%/°C	-
	29	Refrigerant water density	g/cm³	1.001
	30	Temp. different of HTHE diluted inlet and concentrated outlet solution	°C	4
	31	Temp. different of LTHE diluted inlet and concentrated outlet solution	°C	4
	32	Absorber solution level	mm	20
	33	Refrigerant water level	mm	30
	34	HTG regulating valve opening	%	80/100
	35	Absorber regulating valve opening	%	100
	36	Trial operation time after commissioning	h	2
	37	i/O temp.	°C	-
	38	Flow rate	m³/h	-
	39	Heating capacity	10³kcal/h	-
	40	HTG temp.	°C	-
	41	Exhaust temp.	°C	-
	42	i/O temp.	°C	-
	43	Flow rate	m³/h	-
	44	Hot water Heating capacity	10³kcal/h	-
	45	HTG temp.	°C	-
	46	Exhaust temp.	°C	-

Sort	No	Commissioning Items	Unit	Conclusion
	47	Gas pipe tightness (check by soap water)		OK
	48	Heat source valve checking		OK
	49	Hear source pressure	kPa or 10³kcal/h	0.3 bar
	50	Max. fuel input	m³ or kg	-
	51	Min. fuel consumption (Gas or Oil)	%	-
	52	Excessive air coefficient (BZ)	m³ or	-
	53	Middle fuel consumption (Gas or Oil)	%	-
	54	Excessive air coefficient (BZ)	m³ or	-
	55	Max. fuel consumption (Gas or Oil)	%	-
	56	Excessive air coefficient (BZ)		OK
	57	Heat source valve feedback fault		OK
	58	One chilled W. O temp. sensor wire broken or short		OK
	59	Cooling W. I temp. sensor wire broken or short		OK
	60	Heating W. O temp. sensor wire broken or short		-
	61	Hot W. O temp. sensor wire broken or short circuit		-
	62	Absorption pump overload or damaged		OK
	63	Absorption contactor on before A-pump startup		OK
	64	R-pump overload or damaged		OK
	65	Refrigerant contactor on before R-pump startup		OK
	66	HTG level fault		OK
	67	Gas burner fault		-
	68	One chilled W. flow switch on before pump startup		OK
	69	One chilled W. flow switch off during operation		OK
	70	Heat source leak fault		-
	71	Chilled W. flow rate(flow meter) <45% fault during		OK
	72	Chilled W. B1 on/off actuating value	m³/h	-
	73	Chilled W. B1A on/off actuating value	m³/h	-
	74	Chilled W. B3 on/off actuating value	m³/h	-
	75	HTG temp. sensor wire broken or short circuit		-
	76	Two chilled W. O. temp. sensor wire broken or short circuit		OK
	77	Generator temp. sensor wire broken or short circuit		OK
	78	Temp. sensor unit communication fault		OK
	79	HTG level stay at section A more than 2minutes		-
	80	HTG pressure protection		-
	81	HTG seriously over temp. protection		-
	82	Gas leakage detection		-
	83	Gas pressure protection		-
	84	Burner motor fan alarm		-
	85	HTGLTG s-pump inverter fault		OK
	86	Absorber level sensor		-
	87	Charged solution qty.	kg	-
	88	General solution concentration	%	-
	89	Charged octanol qty.	kg	-
	90	Vacuum condition		900Pa
	91	Auto purging/venting system		OK
	92	Internet connection		OK
	93	BAS : <input type="checkbox"/> Dry contract <input type="checkbox"/> Modbus <input type="checkbox"/> Profibus <input type="checkbox"/>		NO

Chiller & system problems:

Customer Operator: Lu Xuzun Customer Manager: Lu Xuzun Service Engineer: Lu Xuzun

Remarks: Customer & BROAD will keep 1 copy separately. ♦ Single effect ♦ ☆ IFA

Lithium bromide solution Test Report

Solution sample information: No. LH523092340

User Test platform Factory Normal Urgent Others: - Inhibitor Li2CrO4 Li2MoO4

User name: COVESTRO SPAIN Chiller Type/Serial: BDS215X10.03-17/30.6/ 17100287 Manufacturer: Broad Other

Sampling date: 2023-06-20 Sample receipt date: 2023-09-03 Report to: Steven

Test results(Filled in by laboratory):

No.	Test item	Analysis method	Standard	Test data	Results
1	LiBr concentration	Electromagnetic oscillation	None	<u>49.4</u> %	<input checked="" type="checkbox"/> Normal <input type="checkbox"/> Abnormal
2	Density (Temp.)	Electromagnetic oscillation	None	<u>1.52</u> g/cm³ (<u>29</u> °C)	<input checked="" type="checkbox"/> Qualified <input type="checkbox"/> Unqualified
3	Appearance	Visual colorimetry	Brilliant colourless clarity	<u>Colorless transparent</u>	<input checked="" type="checkbox"/> Qualified <input type="checkbox"/> Unqualified
4	Alkalinity	Chemical titration	0.05 ~ 0.2	<u>0.076</u>	<input checked="" type="checkbox"/> Qualified <input type="checkbox"/> Unqualified
5	Cu ²⁺	Atomic absorption	≤100ppm	<u>13.24</u> ppm	<input checked="" type="checkbox"/> Qualified <input type="checkbox"/> Unqualified
6	Fe ²⁺	Atomic absorption	≤50ppm	<u>2.50</u> ppm	<input checked="" type="checkbox"/> Qualified <input type="checkbox"/> Unqualified
7	Li2MoO4	Spectrophotometry	0.01 ~ 0.05%	<u>0.014</u> %	<input checked="" type="checkbox"/> Qualified <input type="checkbox"/> Unqualified
8	Precipitation	Centrifugal separation	≤0.1%	<u>≤0.1</u> %	<input checked="" type="checkbox"/> Qualified <input type="checkbox"/> Unqualified

Conclusion:

- Solution can be used normally with qualified composition. Deteriorate slightly,keep using
- Deteriorate moderately,need to be regenerated Deteriorate seriously, replace solution.

Tested by: Liu Jian Date: 2023-09-23

According to the test results, the following process is suggested:

- Continue to use normally Regenerate solution in the chiller Regenerate solution out of the chiller Regenerate in BROAD LiBr factory
- Others

Add Li2MoO4(30% 0.2 kg/t. (Notes: The concentration of original Li2MoO4 solution is 30%, it needs to be diluted to 10% by adding 2 times pure water, and add it after mixing).

- Suggest to use solution regenerator if the amount of Cu²⁺ Fe²⁺ is more than 50ppm.
- Regenerate by regenerator and repeat cleaning filter if the solution is seriously muddy or total amount of Cu²⁺, Fe²⁺ is more than 100ppm.
- Each time add LiOH(1%) 2kg and circulate(external stirring) solution to regulate alkalinity to 0.05 ~ 0.2.
- Each time add HBr(1%) 2kg and circulate(external stirring) solution to regulate alkalinity to 0.05 ~ 0.2.

Check: Chen Bokun Date: 2023-09-23

Engineer process:

Handling photo	
Service form	
Handling date	

3. Chilled water flow rate must greater than 30 m³/h, but less than 400
 4. Cooling water flow rate must greater than 400 m³/h, preferably greater than 450 m³/h.

B BROAD A/C

Service Form (Operation Inspection)

User name: <u>Colestro</u>	Chiller model: <u>BPS211X1-300</u>	Service dept.: <u>B5/EU/NA/Engineer: Steven</u>
User code: <u>034910028</u>	Serial No.: <u>17100287</u>	Tel./Mail: <u>+33645522781</u>
Contact: <u>Oscar</u>	Shipmen' date: <u>2017/10/28</u>	Service agreement: <input type="checkbox"/> Warranty <input type="checkbox"/> General service agreement <input type="checkbox"/> Usage service agreement <input type="checkbox"/> Others
Tel./Fax: <u>+3463002725</u>	Commissioning date: <input type="checkbox"/>	

<p>1. Personal protection: <input checked="" type="checkbox"/> Helmet <input checked="" type="checkbox"/> Work clothes <input type="checkbox"/> Gloves <input checked="" type="checkbox"/> Safety shoes <input type="checkbox"/> Goggles <input type="checkbox"/> Earplug</p> <p>2. Altitude work (>2m): <input type="checkbox"/> Safety belt <input type="checkbox"/> Ladder</p> <p>3. Working in narrow space: <input checked="" type="checkbox"/> Good ventilation <input type="checkbox"/> General monitoring by another person</p> <p>4. Electrical work: <input type="checkbox"/> Power off and set sign of "No switching on"</p>	<p>14. Cooling/Middle temperature W. inlet temp.: Setting/Present: <u>27.2/27.1</u></p> <p>15. Hot W. outlet temp.: Setting/Present: <u>82.8/82.0</u></p> <p>16. Htg temp.: Setting/Present: <u>82.8/82.0</u></p> <p>17. Exhaust temp.: Max setting: <u>present</u></p> <p>18. Internal monitoring: <input checked="" type="checkbox"/> Normal <input type="checkbox"/> Abnormal</p> <p>19. Burner/heat source valve: <input checked="" type="checkbox"/> Normal <input type="checkbox"/> Abnormal</p> <p>20. Water treatment: <input checked="" type="checkbox"/> Annual <input type="checkbox"/> Single <input type="checkbox"/> No</p> <p>21. Papaneter setting: <input checked="" type="checkbox"/> Normal <input type="checkbox"/> Wrong</p> <p>22. Linkage system: <input checked="" type="checkbox"/> Normal <input type="checkbox"/> Abnormal <input checked="" type="checkbox"/> No linkage</p> <p>23. Machine room sanitation: <input checked="" type="checkbox"/> Normal <input type="checkbox"/> Common <input type="checkbox"/> Bad</p> <p>24. Air vent: <input checked="" type="checkbox"/> Normal <input type="checkbox"/> Abnormal</p> <p>25. Maximum fuel consumption: <u>present</u> (N/A/1/kwh)</p> <p>26. Cooling water tubes scaling check: (Temp. difference between cooling water outlet and refrigerant U-pipe) <u>1.6</u> <input checked="" type="checkbox"/> Normal <input type="checkbox"/> Slight <input type="checkbox"/> Serious</p>
--	--

No.	Item	Service content	Remark
1.	flow switch	check flow switch	B5 flow switch didn't integrated into the control circuit of cooling water pump
2.	heat source valve	when heat source valve shut stop, one of the heat source valve still open	

No.	Name	Model	Description	Quantity

<p>Service documents, training content, improvement suggestion</p> <p>1. Integrate the KAS5 relay into the control circuit of the cooling water pump to ensure that the cooling water pump can't start when KAS5 is disconnected.</p>	<p>Service date and time</p> <p>Service begins: <u>17:00</u> to <u>21:00</u></p> <p>Service ends: <u>19:00</u> to <u>23:00</u></p> <p>Whether this service reaches service standard: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Energy consumption evaluation: <input type="checkbox"/> Energy saving <input type="checkbox"/> Normal <input type="checkbox"/> High energy consumption</p>
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<p>User's evaluation: <input type="checkbox"/> Excellent <input type="checkbox"/> Satisfied <input type="checkbox"/> Common <input type="checkbox"/> Dissatisfied</p> <p>Suggestion:</p>	<p>1. Service supervisor: Tel: +86-731-84086265 Fax: +86-731-84611356 Email: service@broad.net</p> <p>2. Keep this record properly</p> <p>3. Website: www.broad.com</p>
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BROAD Engineer: Steven Agent service Date: 17/10/2017

User: Oscar Date: 16/10/2017

2. Colestro regulation needs two additional settings:
 a. when the chilled water flow rate < 30m³/h, all the heat source valve must be closed immediately.
 b. when the chilled water outlet temperature < 5.5°C, all the heat source valve must

B BROAD A/C

远大空调

Customer Satisfaction Survey Form

Dear Customer:

Thanks so much for selecting BROAD products. In order to improve our future service to you, hereby your assistant is highly expected to fill in the form as below and we appreciate that very much.

For Customer:

Country: <u>Spain</u>	Customer Name: <u>Colestro</u>
Serial number: <u>17100287</u>	Email: <u>mila.rodriguez@covestro.com</u>
Contact: <u>Mila</u> Phone: <u>+34 977 318208</u>	Date: <u>13/03/2013</u>

Note: 5=Excellent; 4=Good; 3=Poor; 2=Bad; 1=Very Bad

Product	Items	Evaluation Score					Comments (if Score 3, comments preferred)
		5	4	3	2	1	
Product	Operate Reliability	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Operate Convenient	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Operation Effect	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Energy Consumption	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Service	General Evaluation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Standard Service	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	On-site Training	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Service Attitude	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Service Response	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Technical Ability	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
General Evaluation		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Have You Ever Used Other Brand of Non-Electric chiller? Yes (Brand Name: No)

Will You Select BROAD as Your Next Choice if Possible? Yes No (If No, Please Tell Main Reason)

General Suggestion from Customer

Signature

Signature:

Date: 13/03/13

Company secret level: Public Internal Confidential Top Secret

GU195/173

- HOPITAL DE PERPIGNAN

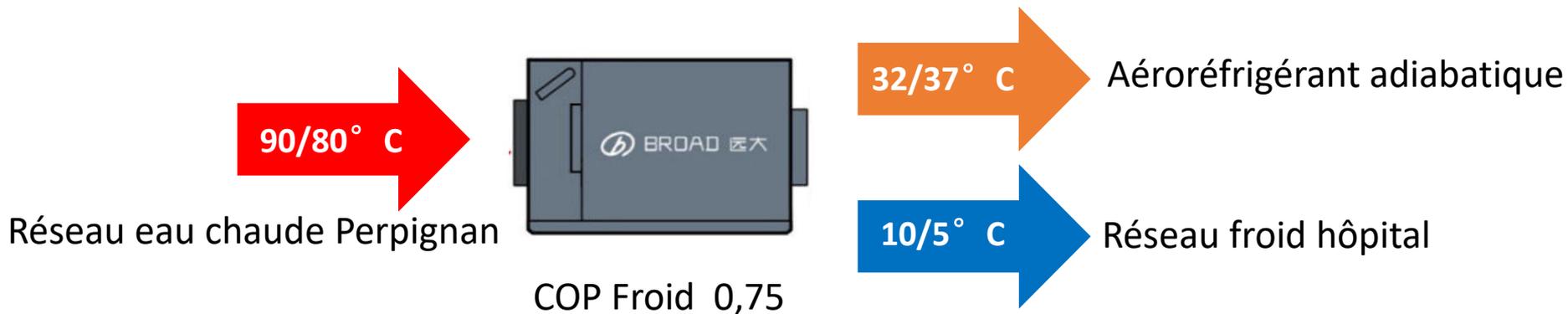


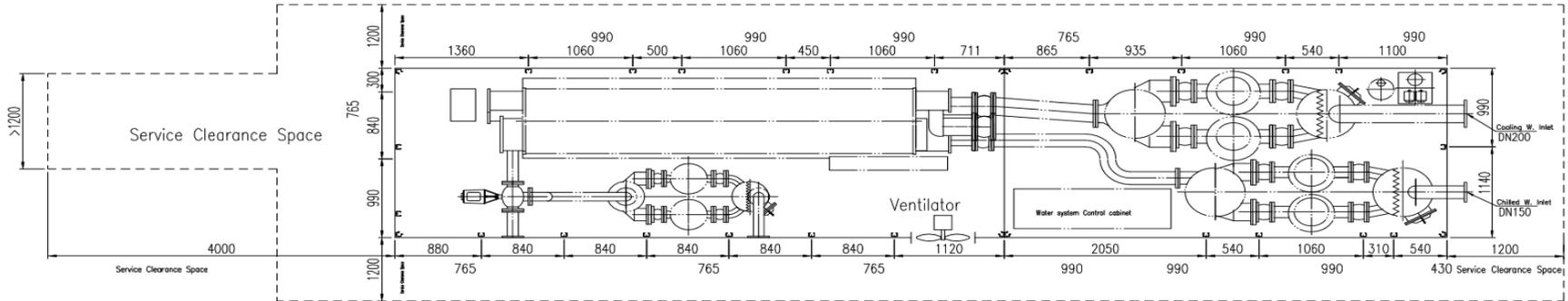
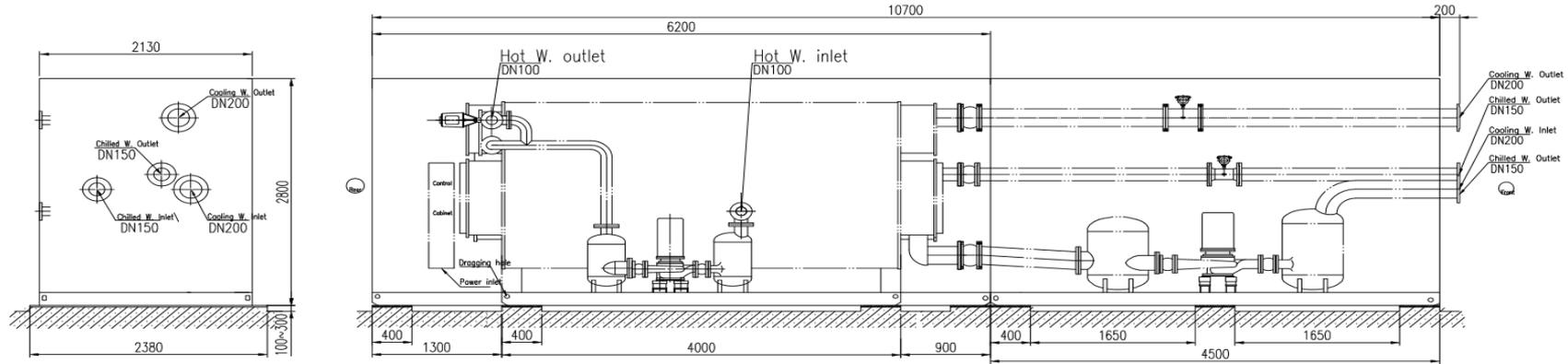
- 1110 lits et un plateau technique complet
- Marché de performance énergétique attribué en 2017 à **DALKIA** pour 16 ans
- Refroidisseur à absorption à eau chaude installé en 2019 et alimenté par le réseau d'eau chaude de l'UVE de Calce située à 9 Kms



Unité Eau Chaude

- Eau Chaude 90/80°C 533 KW
- Eau Glacée 5/10°C **400 KW Froid**
- Refroidissement 32/37°C 933 KW





Remark: This is the reference drawing, please refer to the confirmed drawing after the chiller fabrication

Customer	France Dalkia Perpignan	Project	BDHY34XI180/90-25/20-5/10-75
		Name	
	WT75BDHY-190524		BDHY75 Machine Room Drawing
Date	31/05/2019		BROAD AIR CONDITIONING 远大空调有限公司

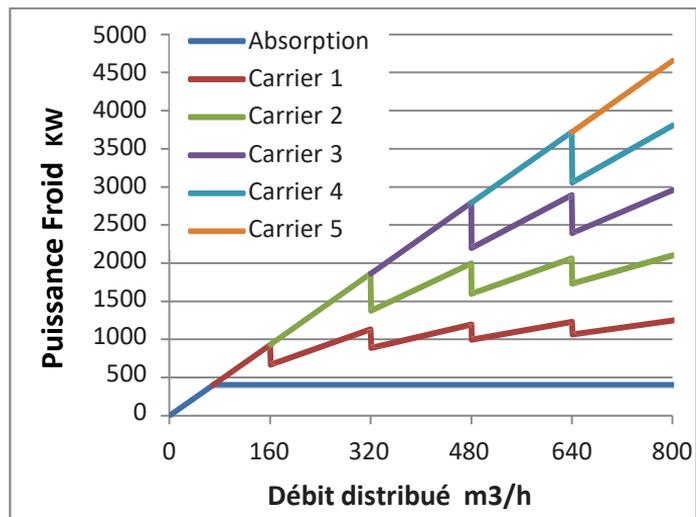
Puissance froide totale installée : 5 MW

1 x Groupe à Absorption

Puiss unit : 400 KW

5 x Groupes à vis à condensation par air

Puiss unit : 900 KW



Groupe à Absorption

- Fonctionnement 24/24h
- Coût énergie MWH Chaud 24-30€ (à vérifier)
- 3500 MWh de froid produits
- 82 tonnes de CO2 évitées

- Investissement 768K€
- **Financement:**
- ADEME 178 K€
- Conseil régional Occitanie 178 K€

BDHY34XII180/90-25/20-5/10-75

BROAD BDHY

Perpignan hospital

Réfrigération

2023.05.16

Mar

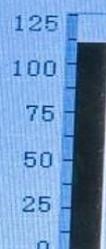
11:59:31

	État°C	Règlage°C
Chilled W. outlet	7.8	7.0
Entrée d'eau glacée	12.6	
entrée d'eau de refroidissement	28.6	27.0
Sortie d'eau de refroidissement	36.2	
Générateur	80.9	84.0
Entrée source chaude basse temp.	89.7	
Sortie source chaude basse temp.	79.4	
Pompe de génération	36.3 Hz	
Pompe à réfrigérant	45.0 Hz	
Pompe de source chaude		
Pompe d'absorption		

Niveau de réfrigérant



Capacité de réfrigération



Ouverture de vanne de source 70 %

1# Chilled water pump on

1# Chilled water pump off

2# Chilled water pump on

2# Chilled water pump off

1# Cooling pump start

1# Cooling pump stop

0.0 Hz

0.0 Hz

2# Cooling pump start

2# Cooling pump stop

ON Démarrage OFF Dilution



Up

Next

Debug

Auto





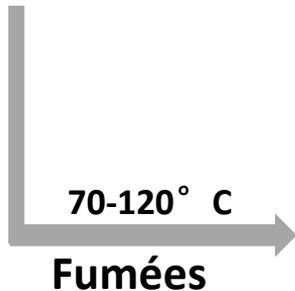


- **Grenaa Chaufferie Biomasse Danemark**

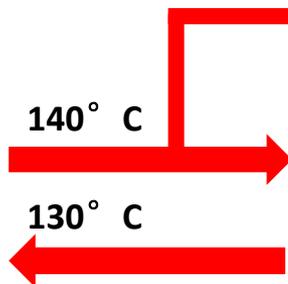




Chaudière Biomasse



Scrubber



PAC BROAD

Vers cheminée

17° C

27° C

65° C

45° C

140° C

87° C



Echangeur

Retour vers chaudière



Réseau Chauffage Urbain



Puissance chaude unitaire : 4900 KW x 2 = 9800 KW

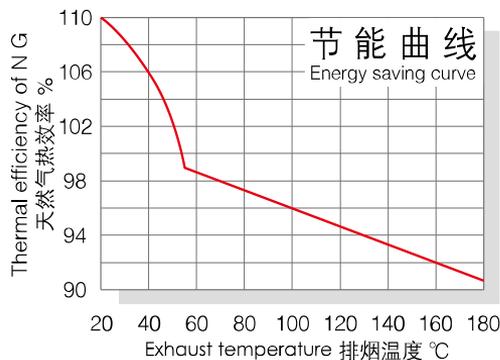
Un cycle combiné de chaudière à biomasse à copeaux de bois et de pompes à chaleur a été installé à Grenaa, ville de la côte est du Danemark. Les PACS BROAD récupèrent la chaleur résiduelle des gaz de combustion à basse température des chaudières et fournissent du chauffage au réseau RCU. Aide à abaisser la température d'échappement à 20 °C

Fonctionnalités:

1. Utilisez la biomasse comme source d'énergie, la biomasse est une énergie renouvelable, c'est une source d'énergie respectueuse de l'environnement.
2. AHP recycle la chaleur résiduelle des gaz de combustion pour DH, améliore l'efficacité énergétique et réduit les émissions.
3. L'eau réfrigérée a un échange de chaleur direct avec les gaz de combustion dans l'épurateur, purifiée davantage les gaz de combustion et les émissions finales proches de 0.



BROAD Low-Temp. Récupération des gaz d'échappement



Éliminez la fumée blanche. La pompe à chaleur à absorption réduit les gaz d'échappement à 30°C, extrait plus de 80% de vapeur d'eau et réduit environ 25,2 t d'émission de vapeur d'eau pour chaque tonne de chaudière à chaque saison de chauffage (2900 h)

Purifier les gaz d'échappement, le SO₂, les NO_x sont absorbés par l'eau de condensat, le SO₂ est réduit de 30%, les NO_x sont réduits de 15%. Réduction de 945g de SO₂, 1985g de NO_x pour chaque tonne de chaudière en une saison de chauffage (2900 h)







BDH172X130/140-65/45-17/27-400-R1

BROAD BDHR

GRENNA VARMEVAERK

CHILLER COOLING

2022.04.08

Friday

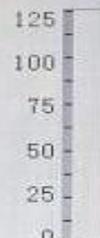
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Monitor

Status Setting

Chilled W. outlet Chilled W. inlet Cooling W. outlet Cooling W. inlet Generator HS inlet HS outlet G-pump HzR-pump Hz

A-pump

Refrigerant
levelCooling
capacityHS valve %Ambient Temp.

Energy-saving: No

Timing on NoTiming off No

Mon	Tue	Wed	Thu	Fri	Sat	Sun

Chilled W. pump

1# 2#

Cooling W. pump

1# Hz 2#

Cooling tower fan

1# Hz 2#

Disinfectant pump

Anti-scale pump

Cooling W. drain valve

ON Start



OFF Dilution



Setting

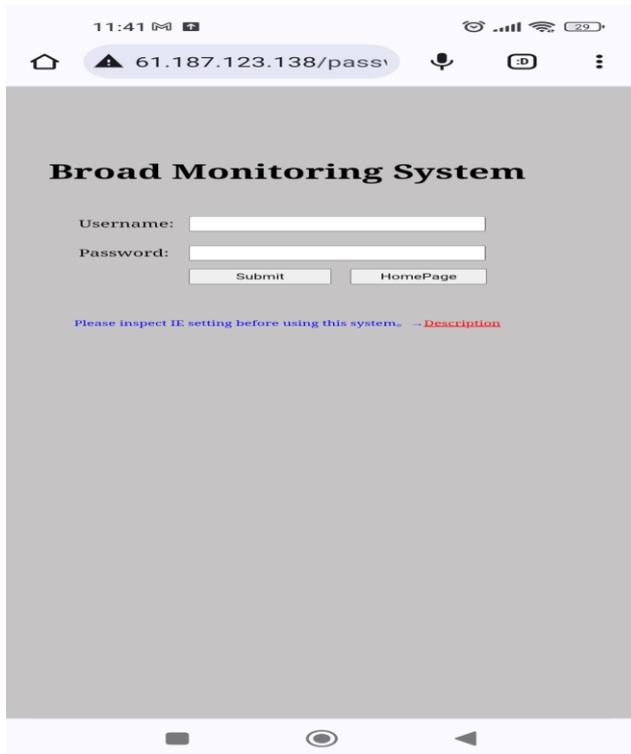
Check

Expense

Information

Profession

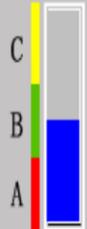
Language



BROAD ICS
HEAT PUMP

Heat Pump

	Status	Setting	Refrigerant level
Low temp. W. outlet	16.8	16	
Low temp. W. inlet	23.8		
High temp. W. outlet	62.5	65	
High temp. W. inlet	44.5		
Generator	112.8	127	
Heat Source inlet	142.1		
Heat Source outlet	107.5		
Ambient Temp.	26.2		



0% 25% 50% 75% 100%
Heat Valve (17%)

Solution Pump	35.7Hz	1#Low temp. W. pump	STOP	1#High temp. W. pump	STOP
Refrigerate Pump	43Hz	2#Low temp. W. pump	STOP	2#High temp. W. pump	STOP



GRENAA HEATING PLANT1
UnitNum: 1 #
Model: BDH172XI130/140-65/45-17/27-400-R1
ID: 00010083000006



- Operation Infor.
- Parameter Setting
- Real-time Alarm
- Unit selection
- User Selection
- Change Password
- Exit!
- Chinese Version



V. UVE Bordeaux – Bordeaux, FRANCE

L'installation de pompes à chaleur à absorption fait partie des actions d'amélioration du système interne de l'UVE (Unité de Valorisation Énergétique).

La PAC recyclera la chaleur résiduelle de la turbine à vapeur, puis l'utilisera pour augmenter la capacité nette de chauffage des quartiers urbains afin de s'ajuster au développement démographique de la métropole de Bordeaux.

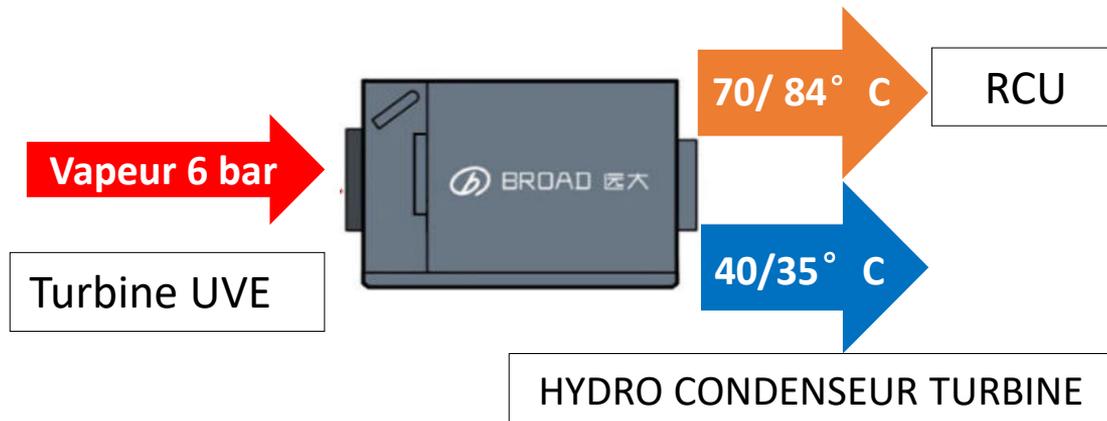
Mise en service : Fin 2023



Capacité Chauffage totale : 11 000 Kw

Unité : 2 * BDS197 XII 0,6 84/70 35/40-Mc Fa 400 R1

COP chaud : 1,7







Merci