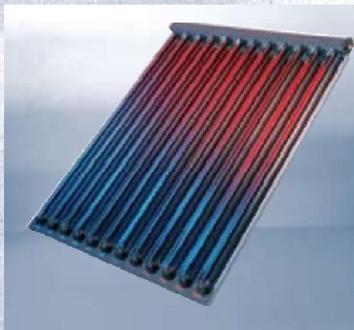


# WOLF



STIFTUNG WARENTEST

## GUT (1,6)\*

Solkollektor TopSon F3,  
Standspeicher SEM-1-300,  
Solarregelung SM-1/BM-Solar

Im Test: 12 Solaranlagen zur Trinkwassererwärmung

**test**

3/2008

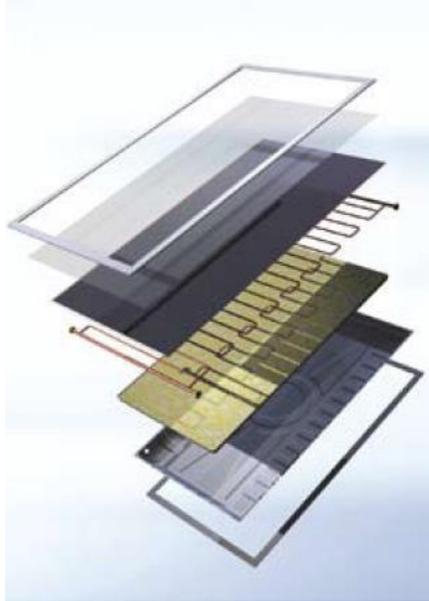
[www.test.de](http://www.test.de)

\*Hinweis: Jetzt Nachfolgemodell TopSon F3-1 mit noch besseren technischen Werten

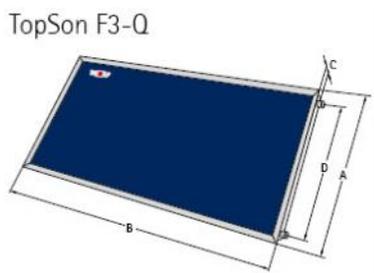


# TopLine / ComfortLine

## TopSon F3-1 / F3-Q CFK-1



Wolf  
 EN 12975  
 Solar-Keymark (F3-1)  
 « » RAL UZ 73  
 60  
 TopSon  
 F3-1/F3-Q  
 TopSon F3-1/F3-Q  
 ( « ») CFK-1.  
 ( ( CFK-1) 3,2 ( TopSon F3-1/F3-Q) 3,0 EN  
 12975. TopSon F3-1/ F3-Q  
 EPDM  
 (200 .)  
 5 TopSon F3-1/F3-Q,  
 TopSon F3-1 CFK-1 , TopSon F3-Q –  
 :  
 - , -  
 - ,  
 - (20°, 30°,  
 45°)



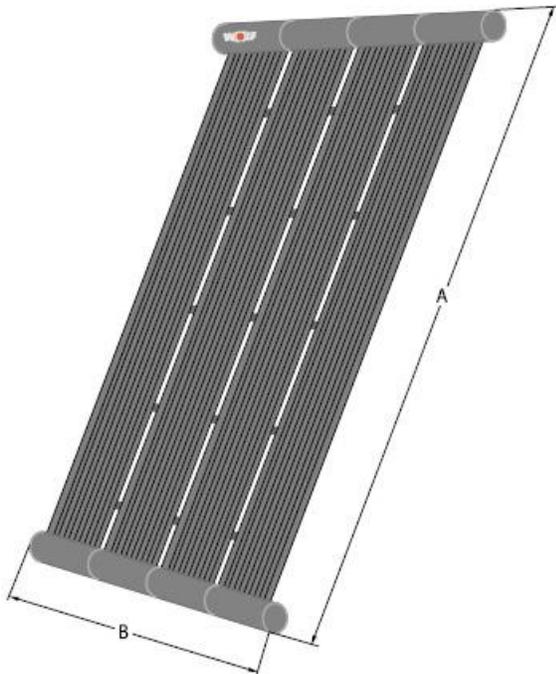
	TopSon F3-1	TopSon F3-Q	CFK-1
A	2099	1099	2099
B	1099	2099	1099
C	110	110	110
D	1900	900	1900
G	$\frac{3}{4}''$	$\frac{3}{4}''$	$\frac{3}{4}''$
	15° 90°	15° 90°	15° 90°
%	80,4	81,9	71,2
k1 $/( \frac{2}{2} )$	3,235	3,312	3,5
k2 $/( \frac{2}{2} )$	0,0117	0,0181	0,0084
°	194	198	196
IAM-50	%	94	93
C $/( \frac{2}{2} )$	5,85	6,3	4,723
	10	10	10
<sup>2</sup>	2,3	2,3	2,3
<sup>2</sup>	2,0	2,0	2,0
	1,7	1,9	1,1
( )	40	41	36
/	30-90	30-90	90
	ANRO ( )		





5

3,23 . 1,24 .



A	.	3230
B	.	1240
	°	5-90
20 °		25
80 °		8
		2
	²	3,5
	.	12
( )	.	10
	/	350

# TopLine



SM1

Wolf

eBus –

BM BM-Solar

(NTC 5K)

(PT1000)



SM2

Wolf

eBus –

BM BM-Solar

(NTC 5K)

(PT1000)



BM-Solar

SM1 SM2

eBus –

SM1 SM2

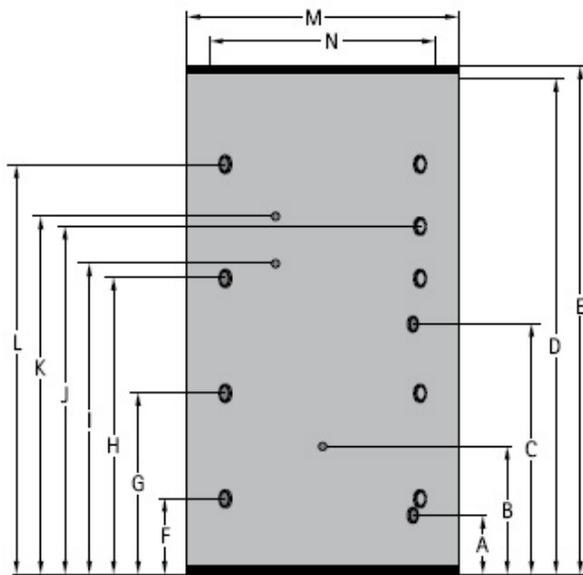
# BSP / BSP-W

BSP-800/1000

BSP-W1000



Wolf, 800 5-6 1000 7-8 Wolf  
 , 2  
 / ), (30  
 80  
 5  
 2



	BSP-800	BSP/BSP-W1000
	785	915
	230	230
	490	550
	910	1030
D	1755	2040
E	1825	2110
F	260	310
G	630	745
H	1030	1250
I	1230	1300
J	-	1430
K	1350	1510
L	1430	1710
	1000	1000
	790	790
	1788	2068
G	1"	1"
Rp	1 1/2"	1 1/2"
(4 .)	15	15
z	2,5	3
	16,5	19,8
	3	3
	10	10
°	95	95
	160	180

BSP-FW		
90°	/	30
		16
BSP-FWL		
50°	/	10
		20
. BSP-FW/BSP-FWL		
		3
		10
	°	95
		95
		230 /50

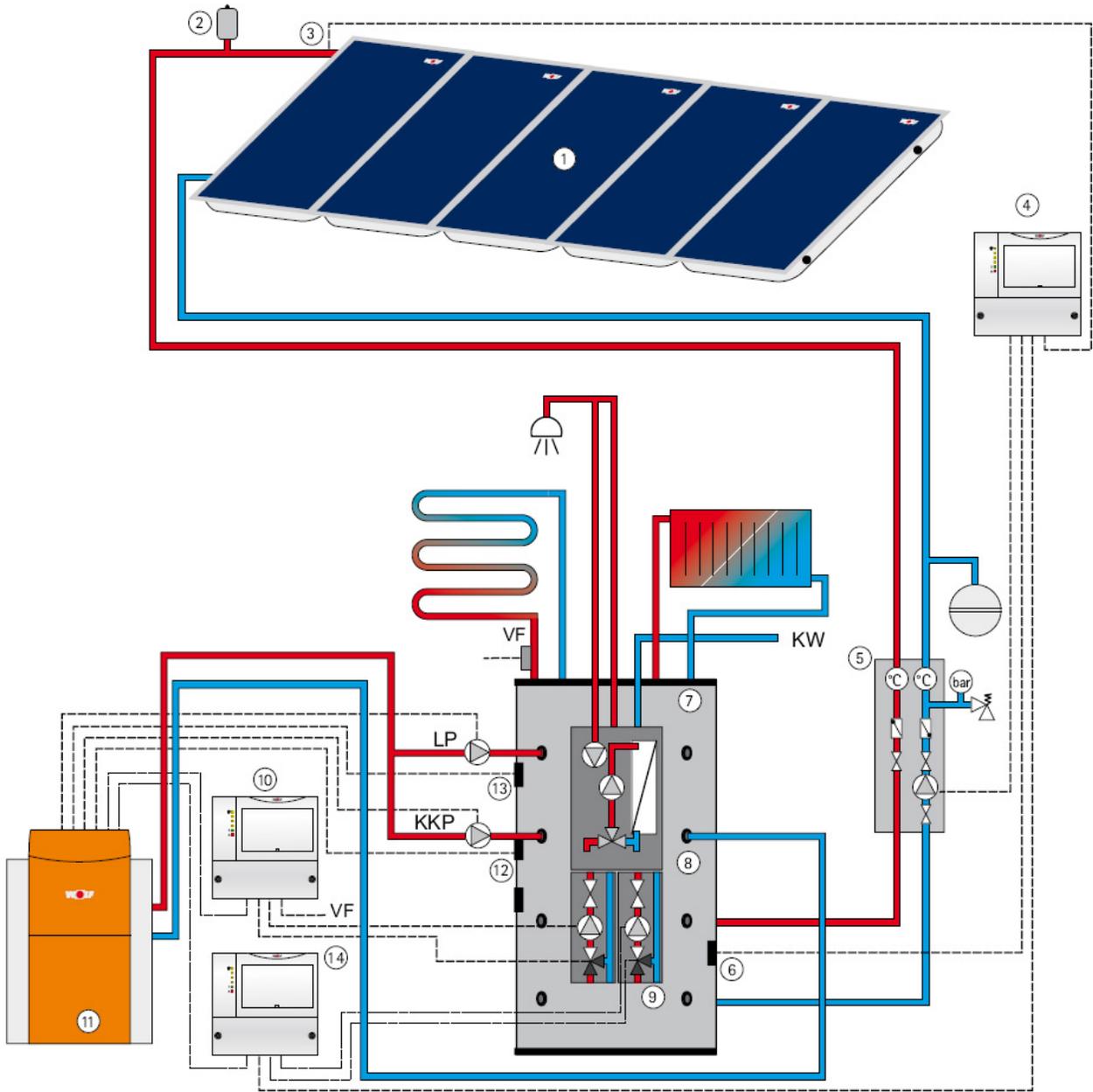
MK1\*

BSP-

BSP-MK1\*

\* BSP-800/1000

# BSP



- 1
- 2
- 3
- 4
- 5
- 6
- 7

SM1

BSP

- 8
- 9
- 10
- 11
- 12
- 13
- 14

MM

MM

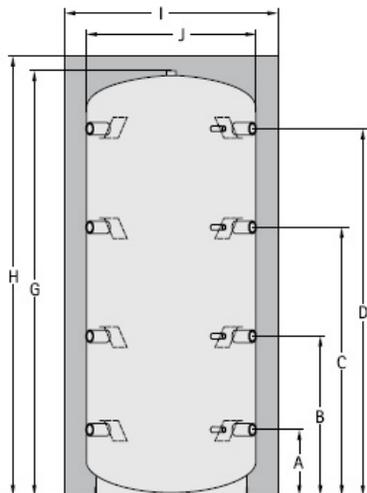
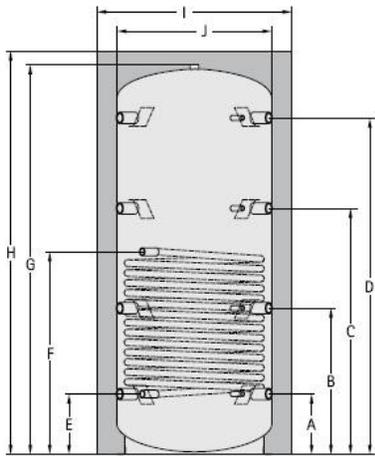
R2

# SPU-2-W/SPU-2



500-1000

SPU-2 3 ,  
 8 1 1/2" 4 1/2" 100  
 5  
 2

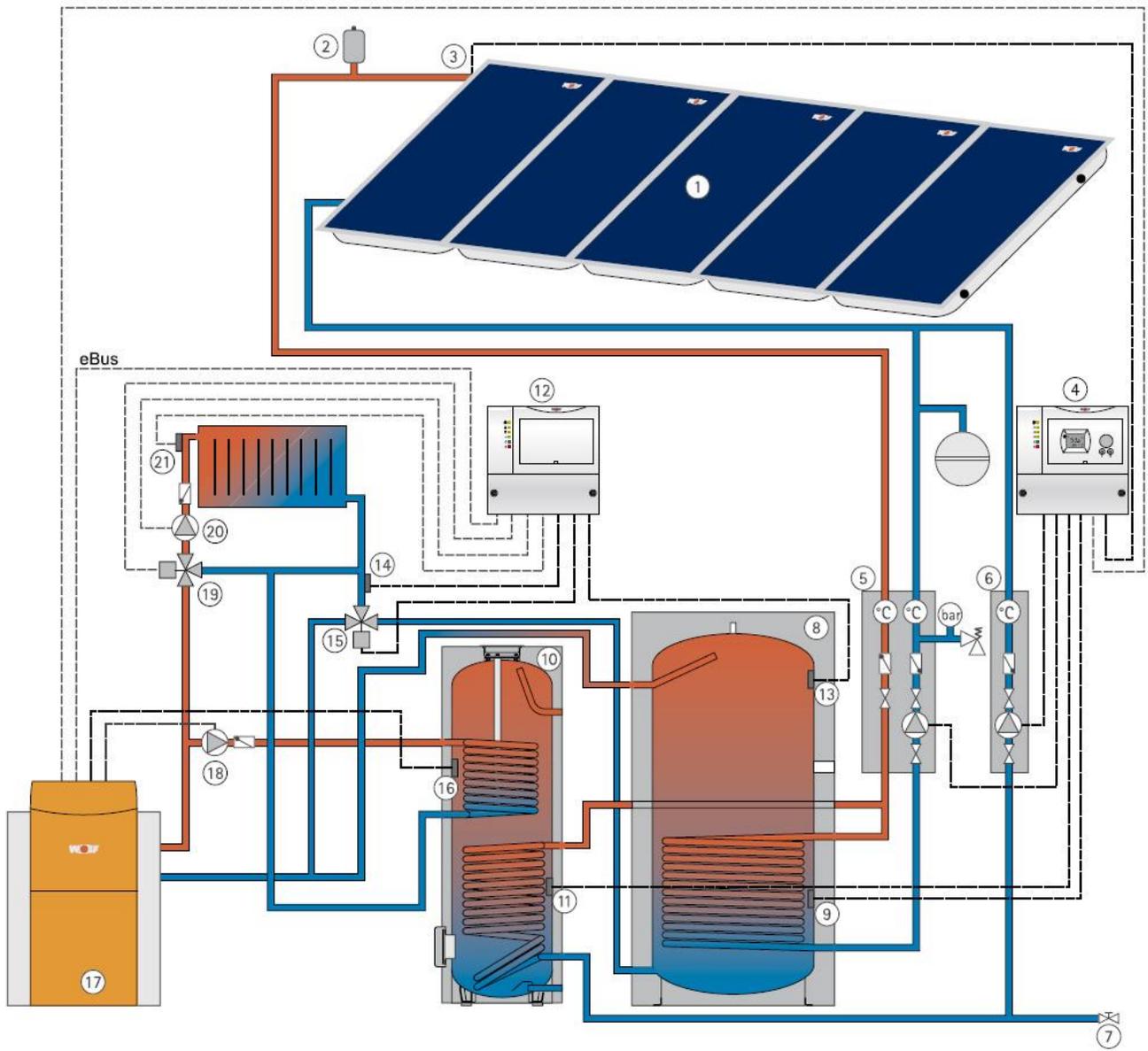


SPU-2-W	500	800	1000	1500
SPU-2	500	800	1000	1500
SPU-2-W	480	730	915	1520
SPU-2	490	775	935	1545
A	210	260	307	372
B	605	630	745	817
C	995	1030	1250	1342
D	1345	1380	1710	1752
E	210	260	307	372
F	1105	930	1030	1172
G	1560	1640	1980	2070
H	1640	1700	2050	2150
I	850	990	990	1200
J	650	790	790	1000
	1860	1980	2290	2460
	1680	1720	2060	2180
(8 .) Rp	1 1/2"	1 1/2"	1 1/2"	1 1/2"
(4 .) Rp	1/2"	1/2"	1/2"	1/2"
Rp	1"	1"	1"	1"
2	1,8	2,4	3	3,6
	10,5	13,5	17,0	20,5
*/	10/3	10/3	10/3	10/3
*/ °	110/95	110/95	110/95	110/95
SPU-2-W	110	140	175	230
SPU-2	85	106	133	180

\* SPU-2-W

SEM-1

SPU-2-W



- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11

SM2

SPU-2-W

- 12
- 13
- 14
- 15 3-
- 16
- 17
- 18
- 19 3-
- 20
- 21

MM

PF

RLF

R2

VF

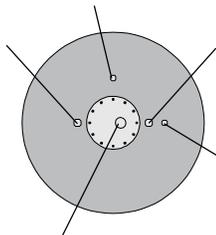
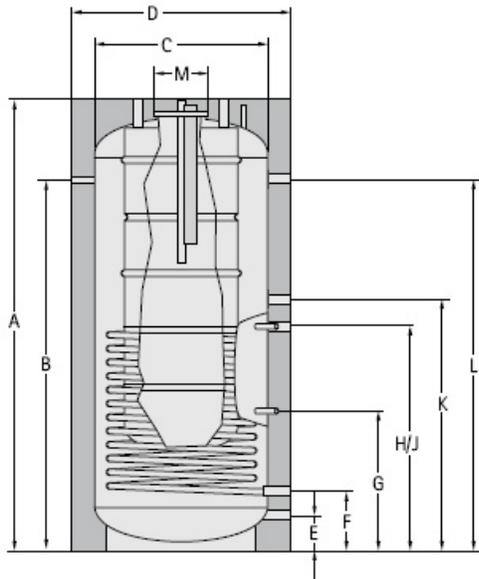
# SED-750/250



DIN 4753, 750 ,  
250 .

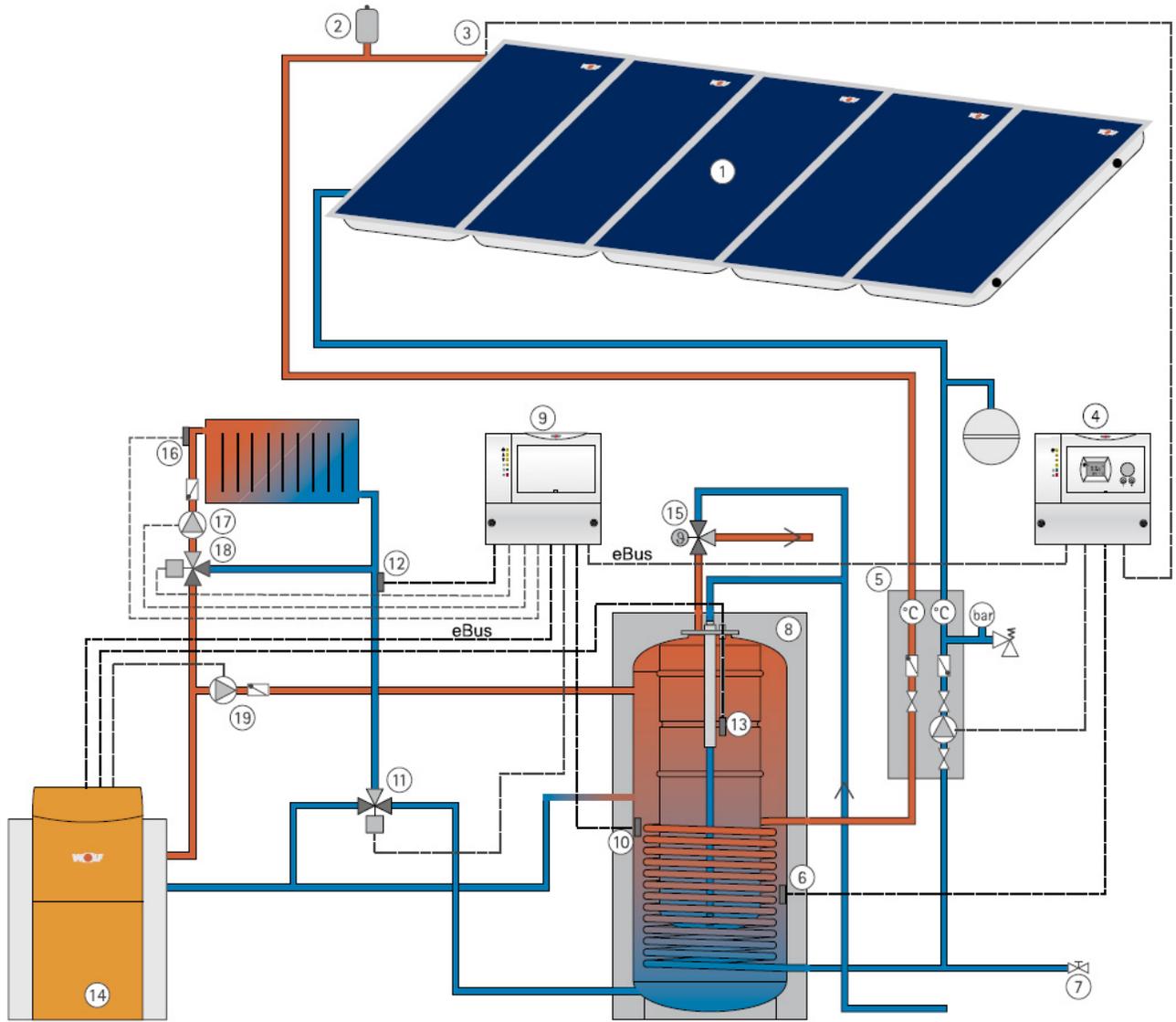
100 .

5  
2



		SED-750/250
		750
		250
	80/60 – 10/45°C	- / 18-446
	NL	2,9
	A	2005
	B	1635
	C	750
	D	950
	E	155
	F	260
	G	625
	H	990
		990
	SRTA	J
		K
		L
		M
		2200
		2020
		Rp
		Rp
	WW	Rp
		Rp
	SRTA	Rp
		Rp
		2
		2,5
		15
		10
		3
		250

# SED-750/250



- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9

SM1

SED-750/250

MM

- 10
- 11 3-
- 12
- 13
- 14
- 15
- 16
- 17
- 18 3-
- 19

VF

PF

RLF

R2

# SEM-1

110°

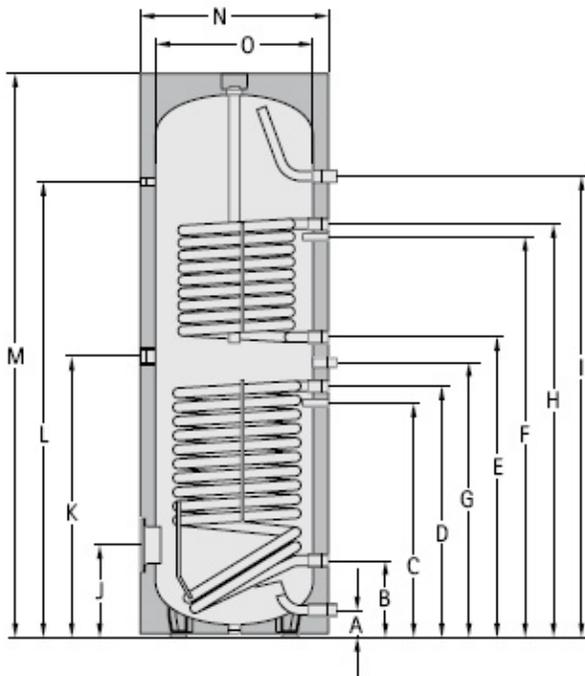
10

10

95°

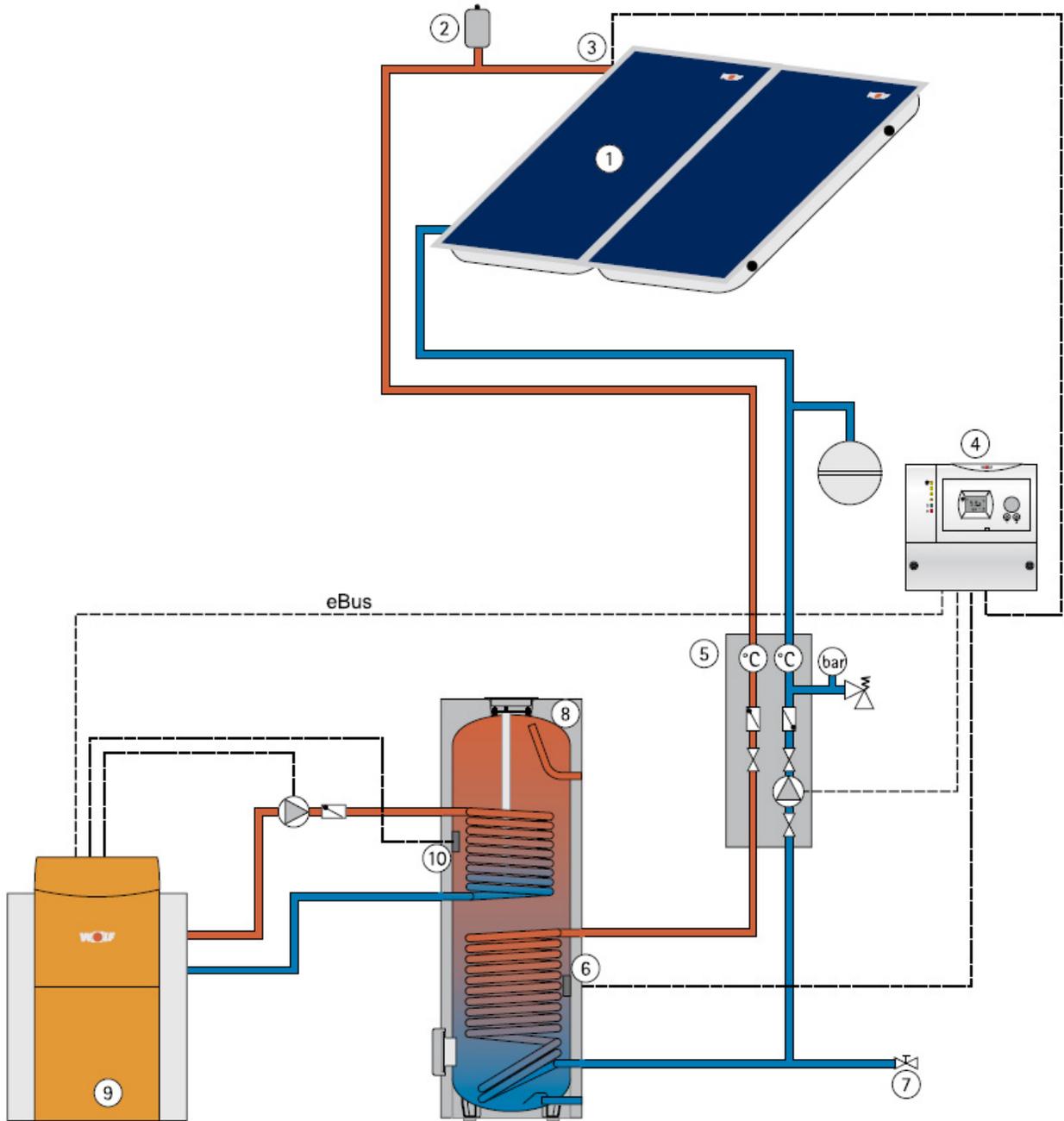


5  
2



SEM-1	300	400	500	750	1000
	300	400	500	750	1000
- 80/60	20-	20-	20-	50-	50-
- 10/45°	490	490	490	1200	1200
NL	2,3	4,8	6	13,5	18
A	90	85	99	220	220
B	253	320	304	345	345
C	491	350-910	586	603	603
D	806	880	865	920	975
E	974	1100	985	1025	1340
F	1154	1090-1490	1160	1185	1500
G	1077	100	1195	1290	1605
H	1334	1415	1335	1475	1790
I	1728	1525	1451	1590	1940
J	324	345	335	384	384
K	887	1000	949	970	1145
L	1504	1521	1404	1460	1810
M	1794	1800	1780	1830	2180
N	600	670	760	940	940
O	500	-	650	800	800
	1898	1920	1935	2057	2374
°	10/110	10/110	10/110	10/110	10/110
°	10/95	10/95	10/95	10/95	10/95
	110	120	114	114	114
G	1"	1"	1"	1 1/4"	1 1/4"
/	1"	1"	1"	1 1/4"	1 1/4"
/	1"	1"	1"	1 1/4"	1 1/4"
G	3/4"	3/4"	3/4"	1"	1"
G	1"	1"	1"	1 1/4"	1 1/4"
G	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"
G	1/2"	1/2"	1/2"	1/2"	1/2"
z	0,95	0,95	0,95	1,45	1,45
z	1,34	1,8	1,8	2,1	2,4
	6	6,7	6,1	12,5	12,5
	8,8	11,6	11,5	16	18
	130	159	182	290	350

# SEM-1



1  
2  
3  
4  
5

SM1

6  
7  
8  
9  
10

SEM-1

R2

# TopLine



10, UPS 25-60, 10  
50 1

EPP  
( 130° 180° ),

- 1 45
- 2 65
- 3 90

20, UPS 25-80, 20  
50 1

- 1 140
- 2 210
- 3 245



10/20



SM1 SM2 :

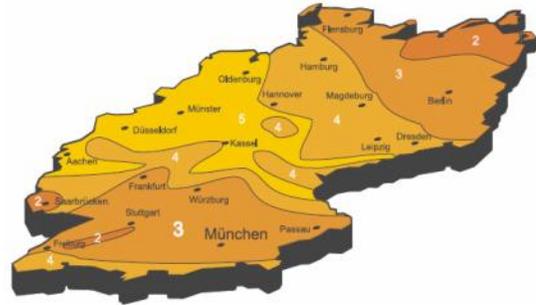


3-

MM  
SM2

	F3-1 / F3-Q					CFK-1 / CRK				
	12 1	15 1	18 1	22 1	28 1,5	12 1	15 1	18 1	22 1	28 1,5
2	12/18	18/25	18/-	-	-	12/-	12/35	-/35	-	-
3	-	18/25	25/25	-	-	12/-	18/-	18/50	-	-
4	-	25/25	25/35	35/35	-	18/-	18/-	25/80	-	-
5	-	35/35	35/35	35/50	-	-	25/-	25/80	-	-
6	-	35/50	35/50	50/50	-	-	25/-	25/80	35/-	-
7	-	50/50	50/50	50/50	80/80	-	-	35/105	35/-	-
8	-	50/50	50/50	50/80	80/80	-	-	35/105	35/-	-
9	-	-	50/80	80/80	80/80	-	-	35/-	50/-	50/-
10	-	-	80/80	80/80	80/80	-	-	-	50/-	50/-

45°  
75  
4



1	1900 - 2000	0,8
2	1800 - 1900	0,9
<b>3</b>	<b>1700 - 1800</b>	<b>1,0</b>
4	1600 - 1700	1,1
5	1500 - 1600	1,2

1,0

		/	/
15°	1,2	1,2	1,3
25°	1,1	1,2	1,4
35°	1,0	1,2	1,5
<b>45°</b>	<b>1,0</b>	<b>1,1</b>	<b>1,5</b>
55°	1,1	1,2	1,6
65°	1,2	1,3	1,7
75°	1,3	1,4	1,8

1,1

0,6	0,8	<b>1,0</b>	1,2	1,5

1,0

<b>1,0</b>	<b>1,1</b>	<b>1,0</b>	<b>4</b>	0,4	$= \frac{1,76}{2}$

<b>4</b>	<b>1,0</b>	<b>75</b>	<b>= 300</b>

		( )
1 - 3	F3-1	65 - 75
	F3-Q	83 - 105
	CFK-1	12
	CRK	7 - 22
4 - 6	F3-1	82 - 110
	F3-Q	100 - 125
	CFK-1	35
	CRK	38 - 58
7 - 10	F3-1	123 - 150
	F3-Q	130 - 175
	CFK-1	85
7 - 8	CRK	70 - 100

1. :
- 2.
- 3.

$$V_H > \frac{V_G \times 0,1 + V_A \times 1,1}{N}$$

$$N = \frac{P_c - P_0}{P_c + 1}$$

$V_H$  -  
 $V_G$  -  
 $V_A$  -  
 $N$  -

$P_0$  -  
 $P_e$  -

$$-0,5 : P_e -$$

/

	DN 10x1	DN 12x1	DN 15x1	DN 18x1	DN 22x1
/	0,055	0,079	0,133	0,201	0,314

2 : TopSon F3-1

20 15 1 SEM-1-300 8,8

6 2,5

$$N = \frac{(6 \text{ bar} - 0,5 \text{ bar}) - 2,5 \text{ bar}}{(6 \text{ bar} - 0,5 \text{ bar}) + 1} = 0,46$$

2 TopSon F3-1 1,7 2 = 3,40

20 15 1 0,133 20 = 2,66

1 8,8 1 = 8,8

(V<sub>G</sub>) 14,86

$$V_H > \frac{14,86 \times 0,1 + 3,4 \times 1,1}{0,46} = 11,36$$

:

12 ,

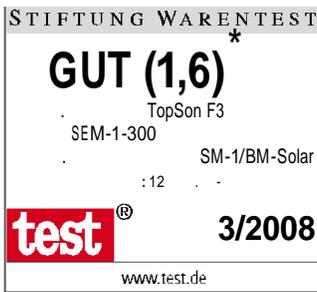
2,5

# Wolf

	F3-1 CFK-1	F3-Q	CRK	
MM SM2,				
2-				
AluPlus ( ) 1				
AluPlus 3 ( ) 2				
AluPlus 4 / 2 1,2 3 2,4 / 2, ( ) .				
AluFlex ( ) . 20°, 30°,45°), 1,2 3				
AluPlus ( ) 1				
AluPlus 3 ( ) 2				
AluPlus 4 / 2 1,2 3 2,4 / 2, ( ) .				
AluFlex ( ) . 20°, 30°,45°), 1,2 3				
AluFlex ( ) 1,2 3 ( )				
AluFlex ( ) 1,2 3 ( )				
1				
1				
2				
CRK ( ) 1				
2- 1				
( 20°, 30°,45°)				
( 10 1				
/ 1 10, 10 50				
/ 1 20, 20 50				
, 10 , 10 2- 50 / 1				
20 , 2- 50 / 1 , 20				
2,5				
ANRO 10 / 20 / 30				
LS 10 / 20				

“ ”!

## Wolf: TopSon F3, SEM-1-300, SM-1/BM Solar



		(1,5)	
(			: 40%)
		(1,3)	
(			(1,5)
			: 37 k /

