

Summary of EN 12975 Test Results, annex to Solar KEYMARK Certificate						Licence Number		011-7S2483 F			
						Issued		2015-03-26			
Company holding the		Walter Meier (Klima Schweiz) AG				Country		Schweiz			
Brand (optional)						Website		www.waltermeier.com			
Street, street number		Bahnstrasse 24				E-mail		heinrich.kriesi@waltermeier.com			
Postal Code / City, province		8603	Schwerzenbach			Tel/Fax		+41 44 806 44 22 / 44 806 44 29			
Collector Type (flat plate glazed/un-glazed; evacuate tubular)						Flat plate collector - glazed					
Thermal / photo voltaic hybrid collector? (PVT collector)						No					
Integration in the roof possible ? (manufacturers declaration)						Yes					
Collector name	Aperture area (Aa) m ²	Gross length mm	Gross width mm	Gross height mm	Gross area (AG) m ²	Power output per collector module					
						G = 1000 W/m ²					
						Tm-Ta					
						0 K	10 K	30 K	50 K	70 K	
						W	W	W	W	W	
TERZA 251-V	2.34	2 148	1 168	83	2.51	1 849	1 755	1 554	1 337	1 102	
TERZA 251-H*	2.35	1 168	2 148	83	2.51	1 857	1 762	1 561	1 342	1 107	
Performance test method						Glazed liquid heating collector - steady state - indoor					
Performance parameters related to aperture						η0	a1	a2			
Units						-	W/(m ² K)	W/(m ² K ²)			
Test results - Flow rate and fluid see note 1						0.790	3.926	0.009			
Bi-directional incidence angle modifiers? No						Kθ values are obligatory for 50°.					
Incidence angle modifiers Kθ(θ)		Angle	10°	20°	30°	40°	50°	60°	70°	80°	90°
		Kθ(θ)	1.00	0.99	0.98	0.95	0.91	0.85	0.70	0.27	0.00
Incidence angle modifier not bi-directional - leave fields blank											
Stagnation temperature - Weather conditions see note 2						Tstg	158		°C		
Effective thermal capacity						ceff = C/Ag	9.176		kJ/(m ² K)		
Max. intended operation temperature - see note 3						Tmax,op	-		°C		
Max. operation pressure - see note 3						pmax,op	1000		kPa		
Pressure drop table - for a collector family, the values shall be for the module with highest ΔP per m ² aperture area						Flow rate	kg/(s m ²)	-	-	-	-
						Pressure drop, ΔP	Pa	-	-	-	-
Optional weather data						Location	-			Link	-
Testing Laboratory		TZS, ITW University Stuttgart									
Website		http://www.itw.uni-stuttgart.de									
Test report id. number		12COL1137OEM01, 12COL1138OEM01, 12COL1140QOEM03			Date of test report		2015.03.26				
During the test GDIF/GTOT was always between						0	and	1			
Comments of testing laboratory:						* dimensions according to manufacturer					
Note 1						Flow rate	0.020 kg/(s m ²)	Fluid	Water		
Note 2						Irradiance, G = 1000 W/m ² ; Ambient temperature, Ta=30 °C					
Note 3						Given by manufacturer					
						Datashet version: 4.06, 2014-01-15					



Annual collector output based on EN 12975 Test Results, annex to Solar KEYMARK Certificate	Licence Number	011-7S2483 F
	Issued	26.03.2015

Annual collector output kWh/module														
Collector name	Location and collector temperature (T _m)													
	Athens			Davos			Stockholm			Würzburg				
	25°C	50°C	75°C	25°C	50°C	75°C	25°C	50°C	75°C	25°C	50°C	75°C		
TERZA 251-V	2 872	2 022	1 326	2 168	1 497	958	1 593	1 039	638	1 731	1 116	675		
TERZA 251-H*	2 884	2 030	1 332	2 177	1 503	963	1 600	1 043	641	1 739	1 121	678		

Collector mounting: Fixed or tracking	Fixed; slope = latitude - 15° (rounded to nearest 5°)
---------------------------------------	---

Overview of locations				
Location	Latitude °	G _{tot} kWh/m ²	T _a °C	Collector orientation or tracking mode
Athens	38	1 765	18.5	South, 25°
Davos	47	1 714	3.2	South, 30°
Stockholm	59	1 166	7.5	South, 45°
Würzburg	50	1 244	9.0	South, 35°

G _{tot}	Annual total irradiation on collector plane	kWh/m ²
T _a	Mean annual ambient air temperature	°C
T _m	Constant collector operating temperature (mean of in- and outlet temperatures)	°C

The calculation of the annual collector performance is performed with the official Solar Keymark spreadsheet tool ScenoCalc. The collector output is calculated hour by hour according to the efficiency parameters from the Keymark test using constant collector operating temperature (T_m). A detailed description of the calculations is available at <http://www.sp.se/en/index/services/solar/ScenoCalc/Sidor/default.aspx>.

DIN CERTCO • Alboinstraße 56 • 12103 Berlin Tel: +49 30 7562-1131 • Fax: +49 30 7562-1141 • E-Mail: info@dincertco.de • www.dincertco.de	Datasheet version: 4.06, 2014-01-15
	ScenoCalc version: Ver. 4.06 (Jan, 2014)