


Annex to Solar Keymark Certificate - Summary of EN ISO 9806:2013 Test Results					Licence Number		011-7S2303 P																	
					Date issued		2020-06-08																	
					Issued by		DIN CERTCO																	
Licence holder		PA-ID Prozess GmbH			Country		Germany																	
Brand (optional)					Web		www.pa-id.de																	
Street, Number		Bruchtannenstraße 9			E-mail		ahessberger@pa-id.de																	
Postcode, City		D-63801 Kleinostheim			Tel		49 (0) 6027 40728 - 42 / -99																	
Collector Type					Flat plate collector, unglazed																			
Collector name					Gross area (A_G)		Gross length		Gross width		Gross height		Power output per collector G _b = 850 W/m ² ; G _d = 150 W/m ² ; u = 1 m/s $\vartheta_m - \vartheta_a$											
					m ²		mm		mm		mm		0 K		10 K		30 K		50 K		70 K		80 K	
HM 1305 Mono Black					1.70		1 700		1 000		40		553		419		152		0		0		0	
Power output per m² gross area					325		247		89		0		0		0		0		0		0		0	
Performance parameters test method					Quasi dynamic																			
Performance parameters (related to AG)					$\eta_{0,b}$		c1		c2		c3		c4		c6		Kd							
Units					-		W/(m ² K)		W/(m ² K ²)		J/(m ³ K)		-		s/m		-							
Test results					0.409		6.701		0.000		1.161		0.469		0.031		0.904							
Incidence angle modifier test method					Quasi dynamic - outdoor																			
Bi-directional incidence angle modifiers					No																			
Incidence angle modifier					Angle		10°		20°		30°		40°		50°		60°		70°		80°		90°	
Transversal					$K_{\theta T, coll}$		1.00		1.00		1.00		1.00		1.00		1.00		1.00		0.50		0.00	
Longitudinal					$K_{\theta L, coll}$		1.00		1.00		1.00		1.00		1.00		1.00		1.00		0.50		0.00	
Heat transfer medium for testing					Water																			
Flow rate for testing (per gross area, A_G)					dm/dt		0.020																	
Maximum temperature difference for thermal performance calculations					$(\vartheta_m - \vartheta_a)_{max}$		80																	
Standard stagnation temperature ($G = 1000 \text{ W/m}^2$; $\vartheta_a = 30 \text{ }^\circ\text{C}$)					ϑ_{stg}		90																	
Effective thermal capacity, incl. fluid (per gross area, A_G)					C/m^2		34																	
Maximum operating temperature					$\vartheta_{max, op}$		85																	
Maximum operating pressure					$p_{max, op}$		400																	
Testing laboratory					TZS, ITW University Stuttgart							www.itw.uni-stuttgart.de												
Test report(s)					17COL1407/1 13COL1172/1							Dated		20.05.2020 20.05.2020										
Comments of testing laboratory					Datashet version: 5.01, 2016-03-01																			
This data sheet replaces the date sheet issued 19.10.2018. Performance parameters are taken from test report 17COL1407/1.					 Forschungs- und Testzentrum für Solaranlagen Institut für Thermodynamik und Wärmetechnik Universität Stuttgart Pfaffenwaldring 8, 70560 Stuttgart (Vaihingen)																			
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