

CERTIFICATE OF PRODUCT CONFORMITY

Dubai Central Laboratory Department (DCLD) of Dubai Municipality
hereby attests that the product(s)

Solar Collector

(Details as per the attached Scope of Certification)

manufactured by:

PAPAEMMANOUEL S.A.

1st Km. Inofyta St. Thomas, Gr-32011, Inofyta-Viotia, Greece

have been assessed in accordance with DCLD Document Ref. No. DM-DCLD-RD-DP21-2001 (IC) "General Rules for DM third party product certification system through factory assessment" and the relevant Specific Rules, and were found in conformity with the standard specification:

BS EN 12975-1:2006 +A1: 2010

Accordingly, DCLD hereby authorizes the above manufacturer
to affix the DCL Product Conformity Mark on the above-mentioned product(s).

ARIF AL MARZOOQI

Certification and Quality Control of Products Section Manager
Dubai Central Laboratory Department-Dubai Municipality



Certificate No: CL16020380
Valid Until: 08/07/2024



Current Issue Date: 09/07/2023
Original Issue Date: 09/07/2016



The attached Scope of Certification bearing the same Certificate Number forms an integral part of this Certificate.
This Certificate is an electronic document subject to the Terms and Conditions of the Product Certification System and shall not be reproduced except in full.

OPEN-DATA

DM-DCLD-F-IC-2031 Rev 22

**DUBAI CENTRAL LABORATORY DEPARTMENT
DCLD-CQPS PRODUCT CONFORMITY CERTIFICATION SCHEME**

**SCOPE OF CERTIFICATION
FOR CERTIFICATE NO. CL16020380**

Certificate Issued To:	PAPAEMMANOUEL S.A. 1st Km. Inofyta St. Thomas, Gr-32011, Inofyta-Viota, Greece
Applicable Standard Specification:	BS EN 12975-1:2006 +A1: 2010 – Thermal solar systems and components – Solar Collectors – Part 1: General Requirements
Applicable Specific Rules:	DM-DCLD-RD-DP21-2178 (IC) – Specific Rules Certification of Solar Collectors as per BS EN 12975-1 through Factory Assessment DM-DCLD-RD-DP21-2084 (IC) – Guidelines for Factory Production control Plan for Solar Collector Manufacturers.

S/N	PRODUCT DESCRIPTION	BRAND NAME(S) / MODEL(S)	PRODUCT DETAILS
1.	<p>FLAT PLATE TYPE SOLAR COLLECTOR</p> <p>Absorber Materials: 0.5 mm Aluminum Absorber Sheet with high selective surface treatment and laser welded into copper tubes</p> <p>Rockwool thermal insulation of 50 kg/m³ density with thermal conductivity of 0.035 w/(m- ° K); 30 mm thickness for back insulation and 20 mm thickness for side insulation</p> <p>3.2 mm Low Iron Tempered Mistlite Glass Cover</p> <p>1 mm thickness Aluminum powder coated casing material with 0.4 mm thickness Aluzinc back cover material</p> <p>EPDM elastic rubber & silicone as sealing materials</p> <p>Use with anti-freeze thermal fluid (propylene glycol for solar system)</p>	<p>“SOLAR FLAME & SOLAIR” Brands for VPLUS Models</p> <p>&</p> <p>“ENVIRO ENERGY SOLUTIONS” Brand for EVP Models</p>	<p>VPLUS / EVP 1.50: Gross dimensions of 1480 x 1010 x 86 mm; Gross Area – 1.50 m²; Aperture area – 1.38 m²; Total Absorber Area – 1.38 m²; Headers – 2 horizontal copper tube of 22 mm diameter ; Risers –vertical copper tubes of 8 mm diameter; Maximum operational pressure – 10 bars; Maximum Stagnation Temperature – 153.2°C Empty Collector Weight – 26.20 kg</p> <p>VPLUS / EVP 1.82: Gross dimensions of 1480 x 1230 x 86 mm; Gross Area – 1.82 m²; Aperture area – 1.72 m²; Total Absorber Area – 1.72 m²; Headers – 2 horizontal copper tube of 22 mm diameter ; Risers –vertical copper tubes of 8 mm diameter;</p>

**DUBAI CENTRAL LABORATORY DEPARTMENT
DCLD-CQPS PRODUCT CONFORMITY CERTIFICATION SCHEME**

**SCOPE OF CERTIFICATION
FOR CERTIFICATE NO. CL16020380**

			<p>Maximum operational pressure – 10 bars; Maximum Stagnation Temperature – 153.2°C Empty Collector Weight – 31.50 kg</p> <p>VPLUS / EVP 2.00V: Gross dimensions of 1980 x 1010 x 86 mm; Gross Area – 2.00 m²; Aperture area – 1.86 m²; Total Absorber Area – 1.86 m²; Headers – 2 horizontal copper tube of 22 mm diameter; Risers –vertical copper tubes of 8 mm diameter; Maximum operational pressure – 10 bars; Maximum Stagnation Temperature – 153.2°C Empty Collector Weight – 34.00 kg</p> <p>VPLUS / EVP 2.00H: Gross dimensions of 1010 x 1980 x 86 mm; Gross Area – 2.00 m²; Aperture area – 1.86 m²; Total Absorber Area – 1.86 m²; Headers – 2 horizontal copper tube of 22 mm diameter; Risers –vertical copper tubes of 8 mm diameter; Maximum operational pressure – 10 bars; Maximum Stagnation Temperature – 153.2°C Empty Collector Weight – 34.80 kg</p> <p>VPLUS / EVP 2.37V: Gross dimensions of 1930 x 1230 x 86 mm; Gross Area – 2.37 m²; Aperture area – 2.23 m²; Total Absorber Area – 2.23 m²; Headers – 2 horizontal copper tube of 22 mm diameter;</p>
--	--	--	--

**DUBAI CENTRAL LABORATORY DEPARTMENT
DCLD-CQPS PRODUCT CONFORMITY CERTIFICATION SCHEME**

**SCOPE OF CERTIFICATION
FOR CERTIFICATE NO. CL16020380**

		<p>Risers –vertical copper tubes of 8 mm diameter; Maximum operational pressure – 10 bars; Maximum Stagnation Temperature – 153.2°C</p> <p>Empty Collector Weight – 41.50 kg</p> <p>VPLUS / EVP 2.37H:</p> <p>Gross dimensions of 1230 x 1930 x 86 mm; Gross Area – 2.37 m²; Aperture area – 2.23 m²; Total Absorber Area – 2.23 m²;</p> <p>Headers – 2 horizontal copper tube of 22 mm diameter; Risers –vertical copper tubes of 8 mm diameter; Maximum operational pressure – 10 bars; Maximum Stagnation Temperature – 153.2°C</p> <p>Empty Collector Weight – 42.50 kg</p> <p>VPLUS / EVP 2.72V:</p> <p>Gross dimensions of 2160 x 1260 x 86 mm; Gross Area – 2.72 m²; Aperture area – 2.57 m²; Total Absorber Area – 2.57m²;</p> <p>Headers – 2 horizontal copper tube of 22 mm diameter; Risers –vertical copper tubes of 8 mm diameter; Maximum operational pressure – 10 bars; Maximum Stagnation Temperature – 153.2°C</p> <p>Empty Collector Weight – 47.50 kg</p> <p>VPLUS / EVP 2.72H:</p> <p>Gross dimensions of 1260 x 2160 x 86 mm; Gross Area – 2.72 m²; Aperture area – 2.57 m²; Total Absorber Area – 2.57m²;</p> <p>Headers – 2 horizontal copper tube of 22 mm diameter; Risers –vertical copper tubes</p>
--	--	---

**DUBAI CENTRAL LABORATORY DEPARTMENT
DCLD-CQPS PRODUCT CONFORMITY CERTIFICATION SCHEME**

**SCOPE OF CERTIFICATION
FOR CERTIFICATE NO. CL16020380**

			of 8 mm diameter; Maximum operational pressure – 10 bars; Maximum Stagnation Temperature – 153.2°C Empty Collector Weight – 48.50 kg
2.	<p>FLAT PLATE TYPE SOLAR COLLECTOR</p> <p>Absorber Materials: 0.5 mm Aluminum Absorber Sheet with high selective surface treatment and laser welded into copper tubes;</p> <p>Rockwool thermal insulation of 70 kg/m³ density with thermal conductivity of 0.035 w/(m- ° K); 50 mm thickness for back insulation and 20 mm thickness for side insulation;</p> <p>3.2 mm Low Iron Tempered Mistlite Glass Cover;</p> <p>1 mm thickness Aluminum powder coated casing material with 0.4 mm thickness Aluzinc back cover material;</p> <p>EPDM elastic rubber & silicone as sealing materials;</p> <p>Use with anti-freeze thermal fluid (propylene glycol for solar system)</p>	<p>“SOLAR FLAME & SOLAIR” Brands for TERSOL Models</p>	<p>TERSOL 1.50: Gross dimensions of 1480 x 1010 x 100 mm; Gross Area – 1.50 m²; Aperture area – 1.38 m²; Total Absorber Area – 1.38 m²; Headers – 2 horizontal copper tube of 22 mm diameter; Risers –vertical copper tubes of 8 mm diameter; Maximum operational pressure – 10 bars; Maximum Stagnation Temperature – 171.5°C Empty Collector Weight – 28.80 kg</p> <p>TERSOL 1.82: Gross dimensions of 1480 x 1230 x 100 mm; Gross Area – 1.82 m²; Aperture area – 1.72 m²; Total Absorber Area – 1.72 m²; Headers – 2 horizontal copper tube of 22 mm diameter; Risers –vertical copper tubes of 8 mm diameter; Maximum operational pressure – 10 bars; Maximum Stagnation Temperature – 171.5°C Empty Collector Weight – 34.70 k</p> <p>TERSOL 2.00V: Gross dimensions of 1980 x 1010 x 100 mm;</p>

**DUBAI CENTRAL LABORATORY DEPARTMENT
DCLD-CQPS PRODUCT CONFORMITY CERTIFICATION SCHEME**

**SCOPE OF CERTIFICATION
FOR CERTIFICATE NO. CL16020380**

			<p>Gross Area – 2.00 m²; Aperture area – 1.86 m²; Total Absorber Area – 1.86 m²; Headers – 2 horizontal copper tube of 22 mm diameter Risers –vertical copper tubes of 8 mm diameter; Maximum operational pressure – 10 bars; Maximum Stagnation Temperature – 171.5°C Empty Collector Weight – 38.50 kg</p> <p>TERSOL 2.00H: Gross dimensions of 1010 x 1980 x 100 mm;</p> <p>Gross Area – 2.00 m²; Aperture area – 1.86 m²; Total Absorber Area – 1.86 m²; Headers – 2 horizontal copper tube of 22 mm diameter Risers –vertical copper tubes of 8 mm diameter; Maximum operational pressure – 10 bars; Maximum Stagnation Temperature – 171.5°C Empty Collector Weight – 39.30 kg</p> <p>TERSOL 2.37V: Gross dimensions of 1930 x 1230 x 100 mm;</p> <p>Gross Area – 2.37 m²; Aperture area – 2.23 m²; Total Absorber Area – 2.23 m²; Headers – 2 horizontal copper tube of 22 mm diameter Risers –vertical copper tubes of 8 mm diameter;</p>
--	--	--	--

**DUBAI CENTRAL LABORATORY DEPARTMENT
DCLD-CQPS PRODUCT CONFORMITY CERTIFICATION SCHEME**

**SCOPE OF CERTIFICATION
FOR CERTIFICATE NO. CL16020380**

			<p>Maximum operational pressure – 10 bars; Maximum Stagnation Temperature – 171.5°C Empty Collector Weight – 45.50 kg</p> <p>TERSOL 2.37H: Gross dimensions of 1230 x 1930 x 100 mm; Gross Area – 2.37 m²; Aperture area – 2.23 m²; Total Absorber Area – 2.23 m²; Headers – 2 horizontal copper tube of 22 mm diameter Risers –vertical copper tubes of 8 mm diameter; Maximum operational pressure – 10 bars; Maximum Stagnation Temperature – 171.5°C Empty Collector Weight – 46.50 kg</p> <p>TERSOL 2.72V: Gross dimensions of 2160 x 1260 x 100 mm; Gross Area – 2.72 m²; Aperture area – 2.57 m²; Total Absorber Area – 2.57m²; Headers – 2 horizontal copper tube of 22 mm diameter Risers –vertical copper tubes of 8 mm diameter; Maximum operational pressure – 10 bars; Maximum Stagnation Temperature – 171.5°C Empty Collector Weight – 51.80 kg</p>
--	--	--	--

**DUBAI CENTRAL LABORATORY DEPARTMENT
DCLD-CQPS PRODUCT CONFORMITY CERTIFICATION SCHEME**

**SCOPE OF CERTIFICATION
FOR CERTIFICATE NO. CL16020380**

			<p>TERSOL 2.72H:</p> <p>Gross dimensions of 1260 x 2160 x 100 mm;</p> <p>Gross Area – 2.72 m²; Aperture area – 2.57 m²; Total Absorber Area – 2.57m²;</p> <p>Headers – 2 horizontal copper tube of 22 mm diameter</p> <p>Risers –vertical copper tubes of 8 mm diameter;</p> <p>Maximum operational pressure – 10 bars;</p> <p>Maximum Stagnation Temperature – 171.5°C</p> <p>Empty Collector Weight – 53.00 kg</p>
3.	<p>FLAT PLATE TYPE SOLAR COLLECTOR</p> <p>Absorber Materials: 0.5 mm Aluminum Absorber Sheet with high selective surface treatment and laser welded into copper tubes (Serpentine Type)</p> <p>Rockwool thermal insulation of 70 kg/m³ density with thermal conductivity of 0.035 w/(m- ° K); 50 mm thickness for back insulation and 20 mm thickness for side insulation</p> <p>3.2 mm Low Iron Tempered Mistlite Glass Cover</p> <p>1 mm thickness Aluminum powder coated casing material with 0.4 mm thickness Aluzinc back cover material</p> <p>EPDM elastic rubber & silicone as sealing materials</p> <p>Use with anti-freeze thermal fluid (propylene glycol for solar system)</p>	<p>“SOLAR FLAME & SOLAIR” Brands for MSFC100 Models</p>	<p>MSFC100 - 1.50:</p> <p>Gross dimensions of 1480 x 1010 x 100 mm;</p> <p>Gross Area – 1.50 m²; Aperture area – 1.38 m²; Total Absorber Area – 1.38 m²;</p> <p>Headers – 2 horizontal copper tube of 22 mm diameter; 18 Meander loops of 8 mm diameter; Meander radius of 30 mm</p> <p>Maximum operational pressure – 10 bars;</p> <p>Maximum Stagnation Temperature – 200°C</p> <p>Empty Collector Weight – 29.50 kg</p> <p>MSFC100 - 1.82:</p> <p>Gross dimensions of 1480 x 1230 x 100 mm;</p> <p>Gross Area – 1.82 m²; Aperture area – 1.72 m²; Total Absorber Area – 1.72 m²;</p>

**DUBAI CENTRAL LABORATORY DEPARTMENT
DCLD-CQPS PRODUCT CONFORMITY CERTIFICATION SCHEME**

**SCOPE OF CERTIFICATION
FOR CERTIFICATE NO. CL16020380**

			<p>Headers – 2 horizontal copper tube of 22 mm diameter; 18 Meander loops of 8 mm diameter; Meander radius of 30 mm Maximum operational pressure – 10 bars; Maximum Stagnation Temperature – 200°C Empty Collector Weight – 31.00 kg</p> <p>MSFC100 - 2.00: Gross dimensions of 1980 x 1010 x 100 mm; Gross Area – 2.00 m²; Aperture area – 1.86 m²; Total Absorber Area – 1.86 m²; Headers – 2 horizontal copper tube of 22 mm diameter; 24 Meander loops of 8 mm diameter; Meander radius of 30 mm Maximum operational pressure – 10 bars; Maximum Stagnation Temperature – 200°C Empty Collector Weight – 36.00 kg</p> <p>MSFC100 - 2.37: Gross dimensions of 1930 x 1230 x 100 mm; Gross Area – 2.37 m²; Aperture area – 2.23 m²; Total Absorber Area – 2.23 m²; Headers – 2 horizontal copper tube of 22 mm diameter; 24 Meander loops of 8 mm diameter; Meander radius of 30 mm Maximum operational pressure – 10 bars; Maximum Stagnation Temperature – 200°C Empty Collector Weight – 46.00 kg</p> <p>MSFC100 - 2.72: Gross dimensions of 1260 x 2160 x 100 mm;</p>
--	--	--	--

**DUBAI CENTRAL LABORATORY DEPARTMENT
DCLD-CQPS PRODUCT CONFORMITY CERTIFICATION SCHEME**

**SCOPE OF CERTIFICATION
FOR CERTIFICATE NO. CL16020380**

			Gross Area – 2.72 m ² ; Aperture area – 2.57 m ² ; Total Absorber Area – 2.57m ² ; Headers – 2 horizontal copper tube of 22 mm diameter; 26 Meander loops of 8 mm diameter; Meander radius of 30 mm Maximum operational pressure – 10 bars; Maximum Stagnation Temperature – 200°C Empty Collector Weight – 53.00 kg
4.	<p>FLAT PLATE TYPE SOLAR COLLECTOR</p> <p>Absorber Materials: 0.5 mm Aluminum Absorber Sheet with high selective surface treatment and laser welded into copper tubes</p> <p>Rockwool thermal insulation of 50 kg/m³ density with thermal conductivity of 0.035 w/(m- ° K); 40 mm thickness for back insulation and 20 mm thickness for side insulation</p> <p>3.2 mm Low Iron Tempered Mistlite Glass Cover</p> <p>1 mm thickness Aluminum powder coated casing material with 0.4 mm thickness Aluzinc back cover material</p> <p>Polyurethane sealant + PVC Rubber, EPDM elastic rubber & silicone as sealing materials</p> <p>Use with anti-freeze thermal fluid (propylene glycol for solar system)</p>	<p>FMAX</p> <p>SOLAR VEMP</p> <p>SOLO ENERGY</p> <p>Brand for SOLO Model</p> <p>NOVASUN Brand</p>	<p>FMAX / SOLO 1.50 V:</p> <p>Gross dimensions of 1480 x 1010 x 86 mm; Gross Area – 1.50 m²; Aperture area – 1.38 m²; Total Absorber Area – 1.38 m²; Headers – 2 horizontal copper tube of 22 mm diameter ; Risers – 9 vertical copper tubes of 8 mm diameter; Maximum operational pressure – 10 bars; Maximum Stagnation Temperature – 163.8°C Empty Collector Weight – 27.80 kg</p> <p>FMAX / SOLO 1.50 H:</p> <p>Gross dimensions of 1010 x1480 x 86 mm; Gross Area – 1.50 m²; Aperture area – 1.38 m²; Total Absorber Area – 1.38 m²; Headers – 2 horizontal copper tube of 22 mm diameter ; Risers – 14 vertical copper tubes of 8 mm diameter; Maximum operational pressure – 10 bars; Maximum Stagnation Temperature – 163.8°C Empty Collector Weight – 28.20 kg</p>

**DUBAI CENTRAL LABORATORY DEPARTMENT
DCLD-CQPS PRODUCT CONFORMITY CERTIFICATION SCHEME**

**SCOPE OF CERTIFICATION
FOR CERTIFICATE NO. CL16020380**

			<p>FMAX / SOLO 1.82 V: Gross dimensions of 1480 x 1230 x 86 mm; Gross Area – 1.82 m²; Aperture area – 1.72 m²; Total Absorber Area – 1.72 m²; Headers – 2 horizontal copper tube of 22 mm diameter ; Risers – 11 vertical copper tubes of 8 mm diameter; Maximum operational pressure – 10 bars; Maximum Stagnation Temperature – 163.8°C Empty Collector Weight – 32.80 kg</p> <p>FMAX / SOLO 1.82 H: Gross dimensions of 1230 x 1480 x 86 mm; Gross Area – 1.82 m²; Aperture area – 1.72 m²; Total Absorber Area – 1.72 m²; Headers – 2 horizontal copper tube of 22 mm diameter ; Risers – 14 vertical copper tubes of 8 mm diameter; Maximum operational pressure – 10 bars; Maximum Stagnation Temperature – 163.8°C Empty Collector Weight – 33.20 kg</p> <p>FMAX / SOLO 2.00 V: Gross dimensions of 1980 x 1010 x 86 mm; Gross Area – 2.00 m²; Aperture area – 1.86 m²; Total Absorber Area – 1.86 m²; Headers – 2 horizontal copper tube of 22 mm diameter; Risers – 9 vertical copper tubes of 8 mm diameter; Maximum operational pressure – 10 bars; Maximum Stagnation Temperature – 163.8°C Empty Collector Weight – 36.20 kg</p>
--	--	--	---

**DUBAI CENTRAL LABORATORY DEPARTMENT
DCLD-CQPS PRODUCT CONFORMITY CERTIFICATION SCHEME**

**SCOPE OF CERTIFICATION
FOR CERTIFICATE NO. CL16020380**

			<p>FMAX / SOLO 2.00 H: Gross dimensions of 1010 x 1980 x 86 mm; Gross Area – 2.00 m²; Aperture area – 1.86 m²; Total Absorber Area – 1.86 m²; Headers – 2 horizontal copper tube of 22 mm diameter; Risers – 18 vertical copper tubes of 8 mm diameter; Maximum operational pressure – 10 bars; Maximum Stagnation Temperature – 163.8°C Empty Collector Weight – 36.60 kg</p> <p>FMAX / SOLO 2.37 V: Gross dimensions of 1930 x 1230 x 86 mm; Gross Area – 2.37 m²; Aperture area – 2.23 m²; Total Absorber Area – 2.23 m²; Headers – 2 horizontal copper tube of 22 mm diameter; Risers – 11 vertical copper tubes of 8 mm diameter; Maximum operational pressure – 10 bars; Maximum Stagnation Temperature – 163.8°C Empty Collector Weight – 43.00 kg</p> <p>FMAX / SOLO 2.37H: Gross dimensions of 1230 x 1930 x 86 mm; Gross Area – 2.37 m²; Aperture area – 2.23 m²; Total Absorber Area – 2.23 m²; Headers – 2 horizontal copper tube of 22 mm diameter; Risers – 18 vertical copper tubes of 8 mm diameter; Maximum operational pressure – 10 bars; Maximum Stagnation Temperature – 163.8°C Empty Collector Weight – 44.00 kg</p> <p>FMAX / SOLO 2.72V: Gross dimensions of 2160 x 1260 x 86 mm;</p>
--	--	--	---

**DUBAI CENTRAL LABORATORY DEPARTMENT
DCLD-CQPS PRODUCT CONFORMITY CERTIFICATION SCHEME**

**SCOPE OF CERTIFICATION
FOR CERTIFICATE NO. CL16020380**

			<p>Gross Area – 2.72 m²; Aperture area – 2.57 m²; Total Absorber Area – 2.57m²; Headers – 2 horizontal copper tube of 22 mm diameter; Risers – 11 vertical copper tubes of 8 mm diameter; Maximum operational pressure – 10 bars; Maximum Stagnation Temperature – 163.8°C Empty Collector Weight – 48.00 kg</p> <p>FMAX / SOLO 2.72H:</p> <p>Gross dimensions of 2160 x 1260 x 86 mm; Gross Area – 2.72 m²; Aperture area – 2.57 m²; Total Absorber Area – 2.57m²; Headers – 2 horizontal copper tube of 22 mm diameter; Risers – 18 vertical copper tubes of 8 mm diameter; Maximum operational pressure – 10 bars; Maximum Stagnation Temperature – 163.8°C Empty Collector Weight – 49.60 kg</p>
--	--	--	---

NOTE 01: This document forms an integral part of the Certificate of Product Conformity bearing the same certificate number.

NOTE 02: The above product shall bear the DCLD Conformity Mark.

Original Issue Date: 09 July 2016

Current Issue Date: 09 July 2023

Valid Until: 08 July 2024



ARIF HUSAIN ALMARZOOQI

MANAGER

CERTIFICATION AND QUALITY CONTROL OF PRODUCTS SECTION