

| | | |
|--|----------------------------|--|
| BOAT Name MAMMA AIUTO Sail Nr GRE-1743 | GPH 559.2 | HULL Length Overall 10.320m Maximum Beam 3.008m Displacement 2,671kg Draft 2.524m IMS Reg. Division Performance Dynamic Allowance 0.001% Fwd Accommodation No Hull Construction Cored Carbon Rudder Yes Crew Arm Extension |
| GENERAL Class M34 Designer JOUBERT/NIVELT Builder ARCHAMBAULT Series 10/2010 Age 01/2011 Age Allowance 0.260% Offset File M34.off - 02/09/2011 14:02:52 Measurement by VOGIATZIS - 31/07/2015 | | IMSL 10.028m VCGD -0.261m Sink 15.22kg/mm RL 9.434m VCGM -0.258m WS 19.95m² LSM0 9.616m Displacement/Length ratio 3.0039 |



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Certificate

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Offshore
Racing
Congress



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| SCORING OPTIONS | | | | | | |
|------------------------|--------------------------------|---------------|---------------|---------------------------|---------------|---------------|
| | COASTAL / LONG DISTANCE | | | WINDWARD / LEEWARD | | |
| Time on Distance | 546.1 | | | 615.0 | | |
| Time on Time | 1.0988 | | | 1.0976 | | |
| Triple Number | Low | Medium | High | Low | Medium | High |
| Time on Distance | 623.4 | 501.8 | 444.3 | 801.4 | 622.1 | 541.4 |
| Time on Time | 1.0827 | 1.3451 | 1.5194 | 0.8423 | 1.0851 | 1.2468 |

| TIME ALLOWANCES | | | | | | | |
|------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Wind Velocity | 6 kt | 8 kt | 10 kt | 12 kt | 14 kt | 16 kt | 20 kt |
| Beat VMG | 912.9 | 750.4 | 702.9 | 687.5 | 676.6 | 665.6 | 671.9 |
| 52° | 600.2 | 510.2 | 490.6 | 483.4 | 479.9 | 472.2 | 470.6 |
| 60° | 567.4 | 494.3 | 475.2 | 467.0 | 462.7 | 455.5 | 448.9 |
| 75° | 544.8 | 483.9 | 455.2 | 439.0 | 430.1 | 425.3 | 408.9 |
| 90° | 551.8 | 485.7 | 451.4 | 419.8 | 400.5 | 390.4 | 382.7 |
| 110° | 538.7 | 471.2 | 444.2 | 419.5 | 397.3 | 377.6 | 333.8 |
| 120° | 554.0 | 473.7 | 431.2 | 404.9 | 382.3 | 360.7 | 323.7 |
| 135° | 625.2 | 502.3 | 454.5 | 407.5 | 363.1 | 330.9 | 291.6 |
| 150° | 746.3 | 589.3 | 504.3 | 459.0 | 419.7 | 376.0 | 295.8 |
| Run VMG | 861.8 | 680.5 | 582.7 | 530.8 | 484.6 | 434.2 | 341.6 |

Certificate

Number **001126**
ORC Ref **GRE01009897**
Issued On **30/05/2018**
VPP Ver. **2018 1.00**
Valid until **28/02/2019**

Crew Weight

Default 651kg
Maximum **610kg**
Minimum* **458kg**
**when applied by the NoR and SI*
Non Manual Pwr **No**

Special Scoring

| | | |
|--------------|--------------|---------------|
| | ToD | ToT |
| Non Spin GPH | 602.4 | 0.9960 |
| Non Spin OSN | 588.2 | 1.0200 |

| Selected Courses | | | | | | | |
|-------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Windward / Leeward | 887.3 | 715.4 | 642.8 | 609.2 | 580.6 | 549.9 | 506.7 |
| Circular Random | 757.1 | 617.1 | 543.8 | 501.2 | 473.4 | 452.8 | 421.8 |
| Coastal / Long Distance | 884.8 | 674.5 | 581.2 | 527.5 | 490.6 | 454.7 | 400.6 |
| Non Spinnaker | 835.0 | 672.0 | 584.3 | 532.8 | 499.9 | 477.3 | 446.8 |

Sails Limitations

| | |
|-----------|------------|
| Headsails | Spinnakers |
| 5 | 3 |

| Velocity Prediction in Knots for True Wind Speeds | | | | | | | |
|--|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Wind Velocity | 6 kt | 8 kt | 10 kt | 12 kt | 14 kt | 16 kt | 20 kt |
| Beat Angles | 42.4° | 40.9° | 38.9° | 38.4° | 38.2° | 38.1° | 39.1° |
| Beat VMG | 3.94 | 4.80 | 5.12 | 5.24 | 5.32 | 5.41 | 5.36 |
| 52° | 6.00 | 7.06 | 7.34 | 7.45 | 7.50 | 7.62 | 7.65 |
| 60° | 6.34 | 7.28 | 7.58 | 7.71 | 7.78 | 7.90 | 8.02 |
| 75° | 6.61 | 7.44 | 7.91 | 8.20 | 8.37 | 8.47 | 8.80 |
| 90° | 6.52 | 7.41 | 7.97 | 8.58 | 8.99 | 9.22 | 9.41 |
| 110° | 6.68 | 7.64 | 8.10 | 8.58 | 9.06 | 9.53 | 10.78 |
| 120° | 6.50 | 7.60 | 8.35 | 8.89 | 9.42 | 9.98 | 11.12 |
| 135° | 5.76 | 7.17 | 7.92 | 8.83 | 9.92 | 10.88 | 12.35 |
| 150° | 4.82 | 6.11 | 7.14 | 7.84 | 8.58 | 9.57 | 12.17 |
| Run VMG | 4.18 | 5.29 | 6.18 | 6.78 | 7.43 | 8.29 | 10.54 |
| Gybe Angles | 142.5° | 144.3° | 150.2° | 150.8° | 147.3° | 144.8° | 144.5° |

Class Division Length

CDL = **9.732**

Storm Sails Areas

Heavy Weather Jib **23.95**
Storm Jib (JL=8.66) **8.87**
Storm Trysail **11.64**

Owner

| | |
|-------------------------|---------------------------------|
| BOAT | |
| Name MAMMA AIUTO | Sail Nr GRE-1743 |
| File GR1743 | Data in meters/kilograms |

| | | | |
|--|------------------|-----------------------|--|
| INCLINING TEST AND FREEBOARDS | | | |
| Inclining Test Current Inclining | | | |
| Flotation date 30/07/2015 | SG 1.0280 | | |
| FFM 1.314 | FF 1.313 | SFFP 0.514 | |
| FAM 0.918 | FA 0.924 | SAFP 10.284 | |
| W1 60.0 | PD1 271.0 | WD 9.350 | |
| W2 60.0 | PD2 271.0 | GSA 50.0 | |
| W3 60.0 | PD3 271.0 | RSA 5542.0 | |
| W4 60.0 | PD4 271.0 | PLM 2026.0 | |
| LCF from stem on CL / on sheer | | 5.752 / 5.927 | |
| Maximum beam station from stem | | 8.569 | |
| RM Measured | | 72.7kg·m | |
| RM Default | | 77.4kg·m | |
| Limit of positive stability / Stab.Index | | 131.6° / 127.5 | |
| Freeboard at mast at 4.120 | | 1.073 | |



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IMS Measurement Certificate

| | | | |
|--------------------------------|----------------------------|-------------------|-------------------|
| RIG | | | |
| Forestay Tension Aft | Spreaders 2 | | |
| Inner Stay None Fitted | Runners 0 | | |
| Carbon Mast Yes | Jumper Struts None | | |
| Taper Hollows No | Jib Furler No | | |
| Fiber Rigging No | Main Furler No | | |
| Lenticular Rigging No | Without Backstay No | | |
| Articulated Bowsprit No | | | |
| P 13.855 | E 4.800 | MDT1 0.099 | MW 0.197 |
| IG 13.320 | J 4.020 | MDL1 0.198 | GO 0.197 |
| ISP 15.365 | SFJ 0.100 | MDT2 0.095 | BD 0.220 |
| BAS 1.350 | SPL | MDL2 0.152 | MWT 105.00 |
| FSP 0.064 | TPS 5.620 | TL 1.810 | MCG 5.300 |

| | |
|-------------------------------|--|
| Certificate | |
| Number 001126 | |
| ORC Ref GRE01009897 | |
| Issued On 30/05/2018 | |
| VPP Ver. 2018 1.00 | |
| Valid until 28/02/2019 | |

| | |
|-----------------------------|--|
| MIZZEN RIG AND SAILS | |
| N/A | |

| | | | |
|------------------------------|--------------------|------------------|--|
| PROPELLER | | | |
| Installation Strut | PRD 0.405 | | |
| Type Folding 2 blades | PBW 0.100 | | |
| Twin Screw No | PIPA 0.0038 | | |
| ST1 0.065 | ST3 0.180 | ST5 0.300 | |
| ST2 0.180 | ST4 0.110 | EDL 1.770 | |

| | |
|----------------------|--|
| COMMENTS | |
| ex "SODEBO" (FRA-12) | |

| | |
|------------------------|--|
| MOVABLE BALLAST | |
| N/A | |



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Invalid for racing

| | |
|--------------------|--|
| CENTERBOARD | |
| N/A | |

| | | | | | | | | | |
|------------------------------|------------|------------|------------|------------|------------|-------------|------------------------|---|--|
| SAILS (Maximum Areas) | | | | | | | | | |
| Mainsail | MHB | MUW | MTW | MHW | MQW | Area | Area (r) | Formula | |
| | 0.190 | 1.19 | 1.99 | 3.07 | 3.95 | 40.11 | 41.01 | P/8 · (E + 2·MQW + 2·MHW + 1.5·MTW + MUW + 0.5·MHB) | |
| Symmetric | | | | | | | | | |
| Not Available | | | | | | | | | |
| Asymmetric | SLU | SLE | SL | SHW | SFL | Area | Formula | | |
| | 16.75 | 14.51 | 15.63 | 9.43 | 9.29 | 122.46 | AS · (SFL + 4·SHW) / 6 | | |

| | | | | | | | | | | | | |
|---|------------|------------|------------|------------|------------|------------|-------------|------------|------------|------------------|-----------------|----------------|
| HEADSAILS | | | | | | | | | | | | |
| Area = 0.1125·HLU · (1.445·HLP + 2·HQW + 2·HHW + 1.5·HTW + HUW + 0.5·HHB) | | | | | | | | | | | | |
| HHB | HUW | HTW | HHW | HQW | HLP | HLU | Area | Btn | Fly | Meas.Date | Material | Comment |
| 0.07 | 0.60 | 1.15 | 2.20 | 3.23 | 4.29 | 13.07 | 28.55 | Y | | 22/07/2015 | Carbon | #1 (J 1-2) |
| 0.07 | 0.60 | 1.15 | 2.20 | 3.23 | 4.27 | 13.02 | 28.40 | Y | | 22/07/2015 | Carbon | #1 (J 1-1-1) |
| 0.07 | 0.58 | 1.13 | 2.19 | 3.24 | 4.29 | 13.02 | 28.37 | Y | | 22/07/2015 | Kevlar | #1 (J 1-1) |
| 0.06 | 0.59 | 1.12 | 2.18 | 3.24 | 4.21 | 12.97 | 28.05 | Y | | 31/07/2015 | Kevlar | Light #1 |
| 0.06 | 0.52 | 1.02 | 2.05 | 3.12 | 4.14 | 12.95 | 26.81 | Y | | 31/07/2015 | Kevlar | Medium #2 |
| 0.06 | 0.50 | 1.03 | 2.05 | 3.11 | 4.17 | 12.25 | 25.38 | Y | | 22/07/2015 | Carbon | #2 (J 2-2) |
| 0.06 | 0.51 | 1.01 | 2.02 | 3.05 | 4.12 | 12.31 | 25.13 | Y | | 31/07/2015 | Kevlar | #2 (J 2-1) |
| 0.05 | 0.45 | 0.93 | 1.89 | 2.88 | 3.89 | 11.33 | 21.71 | Y | | 31/07/2015 | Kevlar | Heavy #3 |
| 0.06 | 0.44 | 0.91 | 1.81 | 2.73 | 3.65 | 10.73 | 19.54 | Y | | 31/07/2015 | Carbon | #3 (J 3-2) |
| 0.06 | 0.43 | 0.91 | 1.80 | 2.71 | 3.68 | 10.72 | 19.49 | Y | | 31/07/2015 | Carbon | #3 (J 3-A2) |
| | | | | | 2.45 | 6.42 | 8.01 | | | 31/07/2015 | Dacron | Storm Jib |

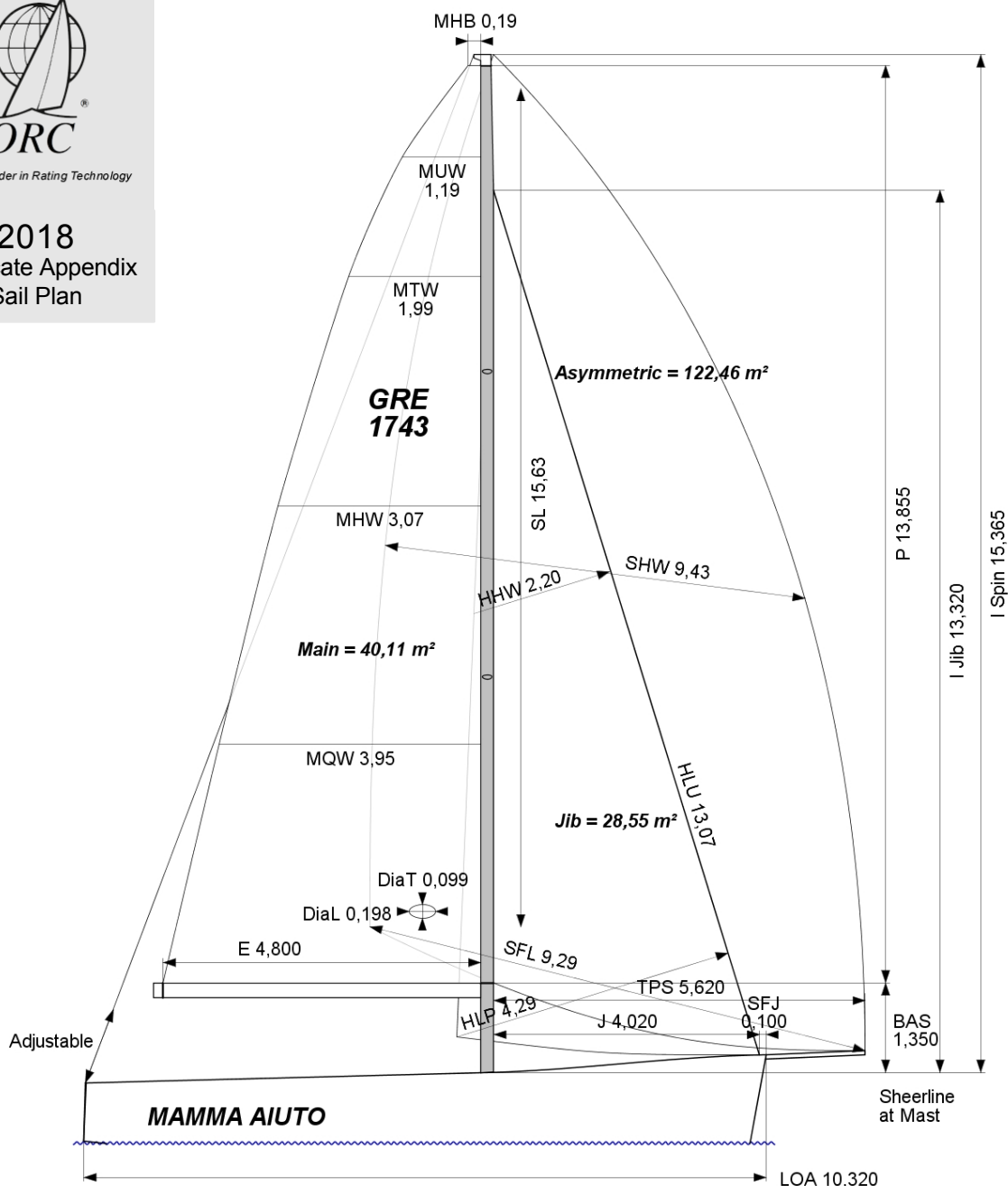
| | | | | |
|----------------------------------|-------------|---------------------------|-----------------|------------------------|
| MEASUREMENT INVENTORY | | | | |
| Measurer VOGIATZIS GRE-17 | | | | |
| Date 30/07/2015 | | | | |
| Comment | | | | |
| Id | Item | Weight | Distance | VCG Description |
| Id | Item | Maker | Model | |
| 1 | Engine | Volvo | Volvo Penta | |
| Id | Item | Weight Description | | |

| | | | | | | | |
|------------------------------|-------------|-----------------|------------------|-------------------------|--------------|------------|---------------------------|
| MEASUREMENT INVENTORY | | | | | | | |
| Id | Item | Tank Use | Tank Type | Capcty | Dist. | VCG | Condtn Description |
| 1 | Tank | Diesel | Plastic | 50.0 | 7.00 | -0.20 | 50.0 |
| Id | Item | Weight | Distance | VCG Description | | | |
| 1 | Ballast | 9.6 | 4.60 | -0.40 2 X Plumb weights | | | |
| 2 | Battery | 37.8 | 5.70 | -0.20 1 X 130 Ah | | | |
| 1 | Battery | 12.0 | 5.60 | -0.20 1 X 40 Ah | | | |



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Certificate Appendix
Sail Plan



| SAILS INVENTORY | | | | | | | | | | | | | | | | |
|---------------------------|-------|-------|-------|------|------|--------|-----------|------------|-------------|-------------|----------|----------|------------|-------------|----------|--------------|
| MAINSAIL (3) | | | | | | | | | | | | | | | | |
| Id | MHB | MUW | MTW | MHW | MQW | Area | Measurer | Meas.Date | Manufacture | Material | Comment | | | | | |
| 2 | 0.190 | 1.19 | 1.99 | 3.07 | 3.95 | 40.02 | VOGIATZIS | 22/07/2015 | North Sails | Carbon | | | | | | |
| 3 | 0.210 | 1.19 | 1.98 | 3.06 | 3.95 | 39.98 | VOGIATZIS | 22/07/2015 | North Sails | Kevlar | | | | | | |
| HEADSAILS (11) | | | | | | | | | | | | | | | | |
| Id | HHB | HUW | HTW | HHW | HQW | HLP | HLU | Ovrlp | Area | Btn | Fly | Measurer | Meas.Date | Manufacture | Material | Comment |
| 01 | 0.07 | 0.60 | 1.15 | 2.20 | 3.23 | 4.29 | 13.07 | 107% | 28.55 | Y | | VOGIATZI | 22/07/2015 | North Sails | Carbon | #1 (J 1-2) |
| 02 | 0.07 | 0.60 | 1.15 | 2.20 | 3.23 | 4.27 | 13.02 | 106% | 28.40 | Y | | VOGIATZI | 22/07/2015 | North Sails | Carbon | #1 (J 1-1-1) |
| 06 | 0.07 | 0.58 | 1.13 | 2.19 | 3.24 | 4.29 | 13.02 | 107% | 28.37 | Y | | VOGIATZI | 22/07/2015 | North Sails | Kevlar | #1 (J 1-1) |
| 08 | 0.06 | 0.59 | 1.12 | 2.18 | 3.24 | 4.21 | 12.97 | 105% | 28.05 | Y | | VOGIATZI | 31/07/2015 | Star Voiles | Kevlar | Light #1 |
| 09 | 0.06 | 0.52 | 1.02 | 2.05 | 3.12 | 4.14 | 12.95 | 103% | 26.81 | Y | | VOGIATZI | 31/07/2015 | Star Voiles | Kevlar | Medium #2 |
| 03 | 0.06 | 0.50 | 1.03 | 2.05 | 3.11 | 4.17 | 12.25 | 104% | 25.38 | Y | | VOGIATZI | 22/07/2015 | North Sails | Carbon | #2 (J 2-2) |
| 07 | 0.06 | 0.51 | 1.01 | 2.02 | 3.05 | 4.12 | 12.31 | 102% | 25.13 | Y | | VOGIATZI | 31/07/2015 | North Sails | Kevlar | #2 (J 2-1) |
| SYMMETRIC SPINNAKERS (0) | | | | | | | | | | | | | | | | |
| Id | SLU | SLE | SL | SHW | SFL | Area | Measurer | Meas.Date | Manufacture | Material | Comment | | | | | |
| ASYMMETRIC SPINNAKERS (4) | | | | | | | | | | | | | | | | |
| Id | SLU | SLE | SL | SHW | SFL | Area | Kind | Measurer | Meas.Date | Manufacture | Material | Comment | | | | |
| 1 | 16.75 | 14.51 | 15.63 | 9.43 | 9.29 | 122.46 | asym | VOGIATZIS | 21/07/2015 | North Sails | Nylon | | | | | |
| 3 | 16.73 | 14.49 | 15.61 | 9.41 | 9.37 | 122.30 | asym | VOGIATZIS | 21/07/2015 | North Sails | Nylon | | | | | |
| 2 | 16.78 | 14.49 | 15.64 | 9.33 | 9.30 | 121.48 | asym | VOGIATZIS | 21/07/2015 | North Sails | Nylon | | | | | |
| 4 | 14.42 | 12.69 | 13.55 | 5.76 | 7.66 | 69.36 | asym | VOGIATZIS | 21/07/2015 | North Sails | Nylon | | | | | |