ORC

World Leader in Rating Technology

OFFSHORE RACING CONGRESS

ORC Superyacht Rule

2022

Cover picture: The Superyacht Cup – Sailing Energy

Margin bars denote changes from 2021 version

Part 1 - GENERAL

100 Rule Philosophy

100.1 The ORC Superyacht Rule (ORCsy) uses the IMS (International Measurement System) and ORC VPP (Offshore Racing Congress Velocity Prediction Program) modified to cover the features and special characteristics of superyachts in calculating a yacht's predicted speed in different wind and sea conditions. With this information ratings are calculated and used for corrected time calculations in the scoring of races of yachts of different sizes and characteristics.

Alongside its scientific background, the main principle of the rule is transparency. Copies of certificates are available at the ORCsy website (www.orc.org) and each owner or representative has the ability to check the effect on their rating when changing any measurement value by use of the ORCsy 'Sailor Services'.

100.2 Requests for interpretations and clarifications as well as Sailor Service access codes may be requested by email only to: orcsy@orc.org.

101 Superyacht Definition

A superyacht is defined as a yacht with an overall length (LOA) greater than 30.48 m (100 ft). However, smaller yachts can also be measured and rated under this rule when a regatta organizer's eligibility criteria enables smaller yachts to compete in its superyacht fleet.

102 Rule Authority

The sole authority for the ORCsy is the Offshore Racing Congress and it shall be maintained and administered at the ORC's discretion.

103 Rule Administration

103.1 The official language of the ORCsy is English and in case of dispute over translation the English text shall prevail.

103.2 The word "shall" is mandatory and the words "may" and "can" are permissive.

103.4 Except where used in headings, when a term is printed in "**bold**" (but not in italics) the definition in the Equipment Rules of Sailing (ERS) applies and when a term is printed in "*italics"* (but not in bold) the definition in the Racing Rules of Sailing (RRS) applies.

103.3 When a term is printed in "***bold italics***" it refers to measurement taken or recorded by a measurer.

104 Rule Interpretation

The ORCsy Technical Committee may at any time issue interpretations or corrections of the ORCsy. Any such interpretation or correction shall be published and will apply until and unless overruled by the ORC Management Committee and by the ORC Congress.

Part 2 - MEASUREMENT

200 General

200.1 Yachts shall be measured in accordance with the IMS except when modified by these rules. The following measurements with appropriate IMS rules are used for the ORCsy:

Hull and appendages in the symmetry plane

	OFF file	B3
FFM	Freeboard Forward Measured	B5.3
FAM	Freeboard Aft Measured	B5.4
SG	Water Specific Gravity	B5.5

Propeller

	Propeller Type	D2
	Propeller Installation	D3
	Propeller Measurements Installation DWG	D4

Appendages not included in the OFF File

	Appendage definition	C1

Stability

PLM	Length of Manometer	E2.3
GSA	Gauge Surface Area	E2.4
RSA	Reservoir Surface Area	E2.5
WD	Weight Distance	E2.7
W1-4	Inclining Weights	E2.8
PD1-4	Pendulum Deflections	E2.9
LIST	Average List Angle	E4.2
CANT	Average Canting Angle	E6.3

Rig

P	Mainsail Hoist	F2.1
IG	Forestay Height	F3.1
ISP	Height of Spinnaker Hoist	F3.2
BAS	Boom Above Sheerline	F3.4
E	Mainsail Foot	F5.1
J	Foretriangle Base	F6.1
SPL	Spinnaker Pole Length	F7.1
TPS	Tacking Point of Spinnaker	F7.2
WPL	Whisker Pole Length	F7.4
MDT1	Max. Transverse Mast	F4.1
MDL1	Max. Fore-and-Aft Mast	F4.2
MDT2	Min. Transverse Mast	F4.3
MDL2	Min. Fore-and-Aft Mast	F4.4
TL	Taper Length	F4.5
MW	Mast Width	F4.6
GO	Forestay Outrigger	F4.7
CPW	Chainplate width	F6.3

Mizzen Rig

PY	Mainsail Hoist Mizzen	F10.1
BASY	Boom Above Sheerline Mizzen	F10.1
EY	Mainsail Foot Mizzen	F10.1
BDY	Boom Diameter Mizzen	F10.1
IY	Height of Mizzen Staysail Hoist	F10.2
EB	Distance Between Masts	F10.3
MDT1Y	Max. Transverse Mast Mizzen	F10.1
MDL1Y	Max. Fore-and-Aft Mast Mizzen	F10.1
MDT2Y	Min. Transverse Mast Mizzen	F10.1
MDL2Y	Min. Fore-and-Aft Mast Mizzen	F10.1
TLY	Taper Length Mizzen	F10.1

Sails

MHB	Mainsail Top Width	G2.1
MUW	Mainsail Upper Width	G2.1
MTW	Mainsail 3/4 Width	G2.1
MHW	Mainsail 1/2 Width	G2.1
MQW	Mainsail 1/4 Width	G2.1
MHBY	Mizzen Top Width	G3
MUWY	Mizzen Upper Width	G3
MTWY	Mizzen 3/4 Width	G3
MHWY	Mizzen 1/2 Width	G3
MQWY	Mizzen 1/4 Width	G3
HHB	Headsail Top Width	G4.1
HUW	Headsail Upper Width	G4.1
HTW	Headsail 3/4 Width	G4.1
HHW	Headsail 1/2 Width	G4.1
HQW	Headsail 1/4 Width	G4.1
HLU	Headsail Luff	G4.1
HLP	Headsail Perpendicular	G4.1
SHW	Symm. Spinnaker Mid Width	G6.4
SFL	Symm. Spinnaker Foot	G6.4
SLU	Symm. Spinnaker Luff	G6.4
SLE	Symm. Spinnaker Leech	G6.4
SHW	Asymm. Spinnaker Mid Width	G6.5
SFL	Asymm. Spinnaker Foot	G6.5
SLU	Asymm. Spinnaker Luff	G6.5
SLE	Asymm. Spinnaker Leech	G6.5

200.2 Measurements shall be taken by actual measurement whenever possible. However, it may also be taken from:

a) A 3D hull file provided by the designer
b) A stability booklet
c) A sailmaker's sail measurement declaration
d) Sail and deck plans provided by the designer
e) Any other information including photos, drawings, designs and technical data verified by the ORC Rating Office

200.3 The "Measurement Guidance", available at this www.orc.org/superaycht shall deemed to be the reference document for ORCsy measurers.

201 Hull Measurement

201.1 A yacht shall be measured in a measurement trim as defined in IMS Rule B4. Items listed in B4.2 when impracticable to be removed from the boat may remain aboard with their weight and longitudinal and vertical position recorded.

The measurement inventory (as shown on the Page 2 of the ORCsy certificate – column "Measurement") shall include the weight and the longitudinal and vertical position of each item heavier than 20 kg. Freeboard measurements shall be taken only if the measured hull offset file is available.

201.2 If the centreboard is raised when sailing downwind this shall be recorded as "YES" and if not as "NO".

201.3 For each non manual powered winch for spinnaker halyard and headsail sheet the maximum power in kW and maximum speed in metres/minute shall be recorded.

201.4 Frontal and lateral superstructures shall be recorded as the projected area taken above the highest points on each station in the hull offset file.

201.5 The frontal area of each dome larger than 0.10 m^2 shall be recorded.

201.6 The diameter of a permanently open bow thruster tunnel shall be recorded.

201.7 If a yacht is MCA (Maritime Coastguard Agency) certified this shall be recorded as "YES" and if not as "NO".

201.8 If a full height skeg is present in front of the rudder this shall be recorded as "YES" and if not as "NO".

202 Stability Measurement

A yacht's stability shall be derived as follows:

a) From the inclining test, performed using the boom as an extension arm as defined in IMS Rule E2.2, with a minimum of 1 degree heel each side. This method shall be used only if a measured offset file is available and freeboards are measured at the same time of inclining.

b) From the data available in the stability booklet.

203 Rig Measurement

203.1 Rig measurements shall be taken in accordance with IMS Part F with additional measurements taken as follows:

203.2 If there is a mainsail furler in the boom this shall be recorded as "YES" and if not as "NO".

203.3 If a yacht has only two furling headsails in the inventory: one overlapping (***HLP*** > 110% of ***J***) on a forestay and one non-ovrelapping on a inner stay, additional measurements of the inner stay shall be taken as ***I1*** and ***J1***.

204 Sail Measurement

204.1 Sail measurements shall be taken in accordance with IMS Part G with additional measurements and requirements as follows:

204.2 Complete sails inventory with all sail measurements shall be recorded in the certificate.

204.3 If a headsail is set on the furler this shall be recorded as "YES" and if not as "NO".

204.4 If a headsail luff perpendicular (***HLP***) is furled more than 50% while tacking this shall be recorded as "YES" and if not as "NO".

204.5 The number of headsails furled around a fixed stay (not deployed) when sailing upwind shall be recorded.

204.6 If an inner jib is unfurled or is already deployed when a larger jib is furled while tacking this shall be recorded as "YES" and if not as "NO".

204.7 An unconventional sail not measured as a mainsail, mizzen, mizzen staysail, headsail or spinnaker shall have its area recorded as calculated from the sail dimensions as definded by the ERS or by drawings or pictures submitted to the ORCsy Rating Office. The use of such a sail shall be recorded as: upwind, downwind or both.

204.8 The use of a mizzen staysail shall be declared as one of three options: with headsail, with spinnaker or with both headsail and spinnaker. The mizzen staysail declared as "used with spinnaker" may also be used when spinnaker is not hoisted.

204.9 If a yacht has overlapping and non-ovealapping headsails (with ***HLP*** > 110% of ***J*** for overlapping), the largest of each shall be measured.

Part 3 - RATING

300 Sailing Trim

300.1 The ORCsy VPP is used to calculate ratings from a yacht's predicted performance in various wind. VPP calculations are made with the yacht in sailing trim, that is in as close as is possible to the actual condition in which the yacht races.

300.2 If any of the measurements listed in 200.1 is not entered, it shall be taken as default defined in the ORCsy VPP documentation.

301 Completely Measured Yacht ("Measured" ORCsy Rating Certificate)

If the hull offset file, freeboards and stability are completely measured this is marked with an "M" on the ORCsy certificate. Displacement in the sailing trim is calculated from the hull geometry and measured freeboards with:

a) weights that are declared not to be onboard while racing deducted (listed in the measurement inventory), and
b) weights that are declared to be onboard while racing but were not on the boat during the measurement (listed in sailing inventory) added.

302 Partially Measured Yacht ("Declared" ORCsy Rating Certificate)

302.1 If any of the hull offset file, freeboards or stability are not measured this is marked with a "D" on the ORCsy certificate. In this case displacement is calculated from the light ship trim from the stability booklet with default weights added for racing gear, crew, sails and declared values for liquids, anchors and chain, which are underestimated so as to not unduly favour yachts not completely measured

302.2 If any of the hull offset file, freeboards or stability are not measured and a stability booklet is not available, displacement and stability data may be taken from any other source. The sailing trim and righting moment will be evaluated by the Rating Office which may apply a rating adjustment due to

the uncertainty of the data. Should new data become available at a later date, a certificate may be updated.

302.3 A boat with a "Declared" ORCsy certificate shall receive an adjustment on her rating time allowances. The adjustment shall be 0.5% if the yacht had no previous ORCsy certificate or 1% if the yacht had an ORCsy certificate in the previous years

303 Corinthian Spirit Class

303.1 The "Corinthian Spirit Class" is a specific type of "Declared ORC Rating Certificate" where less information is required on the application form while the remaining data either uses default values or is taken from designers, shipyards or captains data and declarations. Its main characteristics are as follows:

a) Simplified application and a reduced fee, with the ORC and the SYRA available to assist the captain as needed;
b) A Corinthian Spirit Handicap (ORCcs) – a handicap that incorporates a pre-regatta assessment on the actual status, general preparation and optimization of the yacht to race (e.g. age of sails, condition of bottom, etc.);

303.2 The event organizer can declare a minimum number of entries to feature a Corinthian Spirit class and if not met allow these yachts race in an ORCsy class.

303.3 If so stated by the Notice of Race and/or Sailing Instructions, a rating credit of 1% shall be applied for a yacht on which owner is on the helm for the start and at least 50% of the course.

304 Use of Sails

304.1 Sails to be used for an event shall be declared for each of:

a) mainsail
b) headsails set on a stay
c) headsails set flying
d) spinnakers (symmetric and asymmetric)
e) mizzen
f) mizzen staysail

304.2 The number of sails aboard while racing shall not be greater than the number of respective type of sails as declared in 304.1. The yacht may elect not to carry all delacred sails while racing, but the number of sails on board shall remain the same for each individual race day, including days with multiple races even in the case of damage to sails. The race day begins when the yacht leaves for the race course from its dock or mooring.

Sails damaged during the event may be repaired. Sails beyond repair may be replaced with permission of the Technical Committee

304.3 A yacht's ratings will be adjusted based on declared number of headsails set on forestay(s) (excluding those with area less than $0.135 * \boldsymbol{IG}^2$), declared number of headsails set flying tacked in front of the forestay and declared number of spinnakers as follows:

a) Headsails set on the forestay
   - No rating penalty for 2 headsails
   - 0.5% rating penalty for each headsail in excess of 2
   - 0.5% rating credit for yachts with furlers

b) Headsails set flying tacked in front of the forestay
   - No rating penalty for 1 headsail set flying
   - 0.5% rating penalty for each headsail in excess of 1

c) Spinnakers
   - No rating penalty for 2 spinnakers
   - 1.0% rating penalty for a 3rd spinnaker
   - 0.5% rating penalty for each spinnaker in excess of 3

305 Use of Headsails

305.1 Headsails may be set on the forestay or **set flying**.

305.2 Headsails **set flying** may be tacked:

a) in front of the forestay, when

i) it shall be tacked approximately on the yacht's centreline, and
ii) it shall not be used when a spinnaker is set.

b) between the forestay (and including it) and the forward mast, when

i) it shall have ***HLP*** <= 1.1***J,*** and
ii) it shall be tacked inside any spinnaker sheet, and
iii) it may be tacked away from the yacht's centreline.

305.3 When more than one headsail is used at the same time, if they are trimmed flat along the centerline of the yacht and the clew of the foremost-tacked headsail is forward of the clew of any other headsail the measurement of the largest headsail set on the forestay shall be assumed to be as follows:

a) ***HLP*** shall be the distance between the aftmost clew and the foremost headstay

b) ***HLU*** shall be the longest luff of all headsails in the sail inventory

The resulting area will be reduced by 10% if there are 3 or more headsails used at the same time.

306 Sailing Inventory Weights

Weights of items onboard recorded in the inventory list on the ORCsy certificate (racing gear, anchor and chain, items that cannot be removed while racing) shall not be less than the values recorded in the "Weight Sailing" column.

307 Observed Performance Factor (OPF)

307.1 A yacht's rating may be adjusted by an Observed Performance Factor (OPF)**.** OPF is adjusting time allowances for yacht's performance for light and strong wind while effect on the wind ranges in between is calculated proportionally between light and strong wind. It is expressed in percentage of modification of time allowances. OPF may be applied between regattas or between races at a regatta by the ORC Rating Office when:

a) the data and measurement information from the handicap/rating application form is insufficient to provide a detailed assessment of the yacht's speed potential, or it is submitted late, or

b) there is evidence from race tracking data and/or from observed performance and timings that the yacht's elapsed time (for a race or part of a race) is significantly different from that predicted based on the rating allowances published on the certificate.

c) there is unusual class composition, where a class is comprised of yachts with significantly different sailing characteristics and/or rating values and it is assessed that the VPP will not rate the yachts fairly relative to one another. In this circumstance, the rating adjustment will be referred to as a 'Regatta Specific OPF' and will only be valid for that particular regatta.

An OPF will not be applied in those cases where a yacht's performance is clearly affected by tactical mistakes or poor boat handling, as determined by tracking and/or observation.

307.2 When an OPF is applied to a yacht that has a valid certificate, that certificate shall be withdrawn and replaced with a new one that will adjust all time allowances based on the assigned OPF. If the OPF is applied during a regatta, races scored with the withdrawn certificate shall not be re-scored and the new certificate, modified with the OPF, shall apply only to races thereafter.

307.3 The decision to apply or not to apply an OPF is at the sole discretion of the ORC and shall not be grounds for request for redress. This changes RRS 60.1(b).

Part 4 - CERTIFICATES

400 Certificate Request

400.1 A request for an ORCsy certificate shall be made by completing the on-line application form at the ORCsy website. The application and all relevant documents to process a ORCsy certificate shall be submitted no later than 6 weeks prior to the first racing day of the event, unless otherwise stated in the regatta's Notice of Race. The ORC may extend this deadline at its sole discretion.

400.2 The final inventory of sails, the anchors and the amount of liquids (water and fuel) onboard while racing shall be declared by email to the ORCsy Technical Committee (orcsy@orc.org) at the latest 2 weeks before the first racing day. If events are taking place on two or three consecutive weeks exceptions will be considered. Tankage values shall be declared with the following approximations: 0.10 - 0.30 - 0.50 - 0.70 - 0.90 of the total capacity of fresh water and fuel.

400.3 Applications, documents, data and late configuration declarations arriving after the deadlines above will incur a 30% increase in fee.

401 Certificate Issue

401.1 Certificates shall be issued by the ORC Central Rating Office. A fee, detailed on the ORCsy website, shall be paid for all valid certificates issued.

401.2 The Rating Office has the authority to issue a certificate upon receipt of measurement data, but if anything is found that is considered unusual or against the general interest of the ORCsy the Rating Office may withhold the certificate pending an examination of the case and will only issue it after approval is obtained from the ORCsy Committee.

401.3 The certificate shall be valid until the date printed on the certificate, which will normally be the 31st of December of the current year.

401.4 A yacht shall have only one valid certificate at any one time. The valid certificate shall be the last one issued.

401.5 A certificate, once issued, is considered public and copies are available to all superyacht owners or their representatives registered through the ORCsy Sailor Services website.

402 Owner's Responsibility

402.1 A yacht's owner and any other person in charge shall be responsible for:

a) Preparing the yacht for measurement in accordance with the ORCsy rule

b) Declaring any required data to the measurer and/or on the handicap application

c) Ensuring compliance of any measurement data to those printed on the certificate. Compliance with the certificate shall be defined as follows:

i) All measured, declared or recorded values shall be as close as possible to those on the certificate. Differences are allowed only if the values on the certificate give a less favourable rating.

ii) The owner-declared values for tankage and sails inventory declarations shall not be considered as an issue of compliance with the certificate, but they are applied as owner's responsibility to follow ORCsy rules.

d) Using the yacht and equipment as prescribed by the RRS and the ORCsy.

402.2 A certificate shall be automatically invalidated by a change of ownership. A new owner may request a new certificate with a simple declaration that no changes have been made. A new certificate may therefore be issued without the need to submit a new handicap application or conduct any new measurement. Conversely, a new owner has the right to have the boat re-measured.

402.3 Any change of measurement data requires the declaration of all changes and/or a new measurement after which the ORC will issue a new certificate. Examples of change include:

a) Change of ballast amount, location or configuration.

b) Change of tankage, fixed or portable, in size or location.

c) Change in the engine and/or propeller installation.

d) Change to the size, cut or shape of the maximum area sails (this will be better defined)

e) Change to the shape of the yacht's hull and/or appendages

f) Change to spars or standing rigging configuration

g) Change to the data listed in the handicap application and certificate that affects the yacht's rating.

403 Compliance with Certificate

403.1 When, as a result of an inspection, a measurement check, a discovered error, or a measurement protest, it is determined that a yacht does not comply with her certificate:

a) If the ORC determines that the non-compliance is not the fault of the owner or his representative the certificate shall be withdrawn and replaced with a new certificate that reflects any new measurement data. If the non-compliance is discovered during a regatta future races in the series shall be scored using the new certificate. Whether any or all completed races scored using the old certificate are to be re-scored is at the sole discretion of the Race Committee. This changes RRS A5.

b) If the ORC determines that the non-compliance is the fault of the owner or his representative the certificate matter shall be reported to the Technical Committee who shall act in accordance with the RRS. Non-compliance as defined in 402.1(c) shall be calculated as a difference in percentage of time allowance in s/NM for Moderate wind, as follows:

i) If the difference is less than or equal to 0.1% and the original certificate will be maintained, the protest will be dismissed and the protestor will have to cover any cost involved. RRS 64.3(a) will apply but no corrections are needed.

ii) If the difference is more than 0.1% but less than or equal to 0.25%, no penalty shall apply, but a new certificate shall be issued based on the new measurement data and all races of the series shall be rescored using the new certificate data. The Protest will be considered accepted and the protestee will have to cover any cost involved.

iii) If the difference is more than 0.25% but less than 0.40%, a boat shall receive a scoring penalty that shall be 50% of the score for Did not Finish, rounded to the nearest whole number (0.5 rounded upward) in any race in which her rating was incorrect. New certificate shall be issued based on the new measurement data and all races of the series shall be rescored using the new certificate data. The Protest will be considered accepted and the protestee will have to cover any cost involved.

iv) If the difference is 0.40% or more, a boat shall be disqualified (DSQ) in any race in which her rating was incorrect. The Protest will be considered accepted and the protestee will have to cover any cost involved and the yacht shall not race again until all non-compliance issues are corrected to the limit defined in a) above.

Nothing in this paragraph shall bar action under the RRS concerning a yacht deliberately altered to not comply with her certificate and shall not limit in any way action by a Race Committee and/or by a Protest Committee against any individual involved.

403.2 Compliance with the certificate and any rating matters may be checked by the Technical Committee or Race Committee at any time at the dock or while racing. The ORC representative in the Technical Committee or in the Race Committee shall be allowed onboard after a request has been made to the yacht. The penalty for infringement of this rule may be other than disqualification, or no penalty, at discretion of the Protest Committee.

Part 5 - SCORING

500 Five Ratings Scoring Method

500.1 The ORCsy provides rating time allowances expressed in s/NM for 'light', 'light-moderate', 'moderate', 'moderate-strong' and 'strong' wind speeds . Time allowances in s/NM are used for the Time on Distance (ToD) scoring method, while for Time on Time (ToT) scoring coefficients are calculated from ToT = 500 / ToD for each time allowance.

500.2 Time allowances are caclulated for the All Purpose course that includes equal distribution of all wind directions (a hypothetical course type in which the boat circumnavigates a circular island with the true wind direction held constant). The Race Committee shall therefore attempt, when feasable, to establish course composition that features approximately the same amount of beating, reaching and running.

500.3 Corrected times using the Time on Distance scoring method are calculated as follows:

*Corrected time = Elapsed time – (ToD_{Delta} * Distance)*

Where $ToD_{Delta} = ToD_{\text{the boat}} - ToD_{\text{the lowest (fastest boat) in the fleet}}$

500.4 Corrected times using the Time on Time scoring method are calculated as follows:

*Corrected time = ToT * Elapsed time*

500.5 Corrected time shall be displayed in 'days:hours:minutes:seconds'. When calculating corrected time, a yacht's elapsed time shall be translated to seconds, the corrected time shall be rounded to the nearest second (for example: 12345.5 = 12346 seconds) which shall be then put back into 'days:hours:minutes:seconds'.

500.6 Wind ranges are as follows:

Light	TWS < 8 kts
Light - Moderate	8 kts ≤ TWS < 11 kts
Moderate	11 kts ≤ TWS < 14 kts
Moderate – Strong	14 kts ≤ TWS < 17 kts
Strong	TWS ≥ 17 kts

A reference height for the wind speed is 10 metres above sea level.

500.7 The Race Committee will decide the scoring method, course length (for ToD), wind range for scoring each race (using the resources at its disposal, such as forecasts, pre-race readings from on-course Race Committee boats, trends, etc) and its decisions shall not be grounds for redress by the boat. This changes RRS 60.1(b). For each class with a staggered start, wind range for scoring will be communicated to boats when the leading boat is on the last leg of the course.

501 Starting Formats

501.1 For safety reasons, most superyacht regattas have yachts start individually with a minimum gap between starts of 30 seconds. The starting sequence shall be published before the start of each race and will depend on the ratings (based on the wind range and sea state), fleet size, course configuration and other safety and fair racing considerations. There are two common starting formats:

a) **Staggered Start:** Slower rated yachts start before faster rated yachts (or vice versa), the gap between yachts typically being 1, 2, or 3 minutes. The elapsed time for each yacht is calculated from the time of her starting signal to her finishing time and it is then converted into a corrected time.

b) **Pursuit Start**: The starting time for each yacht is calculated from the appropriate Time on Distance (ToD) rating and course length such that all yachts will theoretically finish at the same time. Starting times may be rounded to the nearest 5-second increment (05, 10, 15, etc) and where necessary further adjusted to maintain a safety gap between starters. In addition, and also for safety reasons, the starting sequence may be arranged to create a gap between class finish times (typically 10 minutes between class finishes).

If two or more yachts have the same ToD rating, starting order will be determined by the slowest average of the ToD ratings. The yacht with the highest average ToD rating will start before the other ones. If a tie still remains it will be broken by a draw. If the situation reoccurs on a subsequent day of the same event their starting order will be swapped and this will be repeated as necessary.

Yachts will be scored based on the order of finish, adjusted for any penalties taken on the water.

i) Shortened course
If a course is shortened, the elapsed time for each yacht is calculated from the time of her starting signal to her finishing time. Results are then determined by correcting the elapsed times by the Time on Distance scoring method.

ii) Fleet scoring
When scoring fleet results for a multi-class regatta with gapped class finish times, the finishing times of each yacht are adjusted by the class finishing time gap(s).

The Race Committee's selection of starting format and times shall not be grounds for redress. This changes RRS 62.1.

502 Re-scoring

502.1 Once the results of a race have been published it may only be re-scored if a yacht's certificate is replaced in accordance with the rule 403.

502.2 Re-scoring shall be performed as follows:

a) **Staggered Start:** The new ToD or ToT scoring coefficient shall be used to re-calculate the corrected time.

b) **Pursuit Starts**: The finishing time for the yacht shall be adjusted using the following formula:

*New finishing time = Old finishing time + ($ToD_{old} – ToD_{new}$) * course length*

503 Polar Curve Scoring

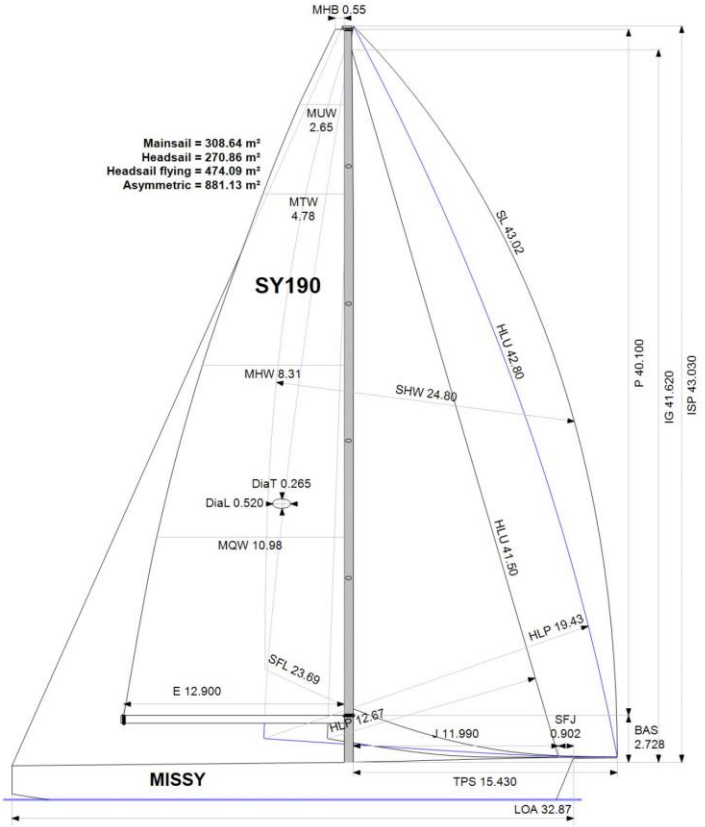
In addition to the scoring method defined in rules 500 - 502, a Polar Curve Scoring with the All-Purpose and Windward/Leeward pre-selected courses may be used as defined in the ORC Rating Systems rule 402.

ORC SUPERYACHT CERTIFICATE SAMPLES

ORC Super Yacht Measured Certificate 2022

Boat
MISSY
SY190

ORC Superyacht
Rating Office
www.orc.org/superyacht
orcsy@orc.org



Rated boat velocities in knots

Wind Velocity	6 kt	8 kt	10 kt	12 kt	14 kt	16 kt	20 kt
Beat Angles	47.4°	45.9°	44.8°	43.3°	42.5°	41.8°	41.0°
Beat VMG	4.50	5.75	6.69	7.36	7.84	8.20	8.55
52°	7.21	9.05	10.43	11.31	11.88	12.23	12.59
60°	8.08	9.95	11.24	12.02	12.45	12.72	13.05
75°	9.06	11.05	12.12	12.66	13.04	13.32	13.78
90°	9.32	11.36	12.45	12.97	13.32	13.74	14.51
110°	8.63	10.57	12.23	12.96	13.39	13.85	14.96
120°	8.09	10.18	11.91	12.86	13.50	14.03	15.04
135°	6.95	8.86	10.56	12.03	12.91	13.57	15.12
150°	5.72	7.38	8.86	10.22	11.37	12.21	13.43
Run VMG	4.95	6.39	7.67	8.85	9.84	10.57	11.88
Gybe Angles	139.5°	141.5°	142.5°	143.0°	145.5°	149.0°	162.0°

BOAT

Class	**MM330**
Designer	**Malcom McKeon YD**
Builder	**Vitters Shipyard**
Age date	**06/2016**
Series date	**04/2013**
Offset file	**SY190A.off**
Data file	
OPF light | strong	**0.0% | 0.0%**

HULL

Length Overall		
Maximum Beam	**7.504 m**	
Dynamic Allowance	**0.000%**	
	Lightship	Sailing
Displacement (kg)	**92,474**	**100,164**
Draft (m)	**5.097**	**5.150**
RM at 1° (kg·m)	**5270.0**	**5378.2**
VCGD (m)	**0.090**	**0.209**
VCGM (m)	**-0.032**	**0.087**

SAIL AREAS (m²)

	Measured	Rated
Mainsail	**308.64**	**313.86**
Headsail Luffed	**270.86**	**270.86**
Headsail Flying	**474.09**	**474.09**
Symmetric		
Asymmetric	**881.12**	**881.12**
Total upwind	**579.51**	
Total downwind	**1189.76**	

SAILS IN INVENTORY

Headsails Luffed	**1**
Headsails Flying	**1**
Spinnakers	**2**

USE OF SAILS

Furled Sails Upwind	**0**
Mainsail Furler	**On boom**
Multiple Headsails	**No**
Tacking Unfurling Staysail	**No**

The owner and any other person in charge is responsible that boat is complying with her certificate in accordance with RRS 78.1 and ORC SY 402.

ORC Ref **03190001RS8** Issued on **25/02/2022** Valid until **31/12/2022**

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SY190

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Time Allowances in secs/NM							
Wind Velocity	**6 kt**	**8 kt**	**10 kt**	**12 kt**	**14 kt**	**16 kt**	**20 kt**
Beat VMG	799.2	626.2	538.4	489.3	459.0	439.0	420.8
52°	499.1	397.8	345.0	318.3	303.1	294.4	286.0
60°	445.5	361.7	320.3	299.5	289.1	283.0	275.8
75°	397.6	325.9	296.9	284.3	276.1	270.3	261.2
90°	386.2	316.8	289.1	277.6	270.2	262.0	248.0
110°	417.3	340.6	294.5	277.7	268.9	259.9	240.7
120°	445.0	353.5	302.3	279.9	266.7	256.5	239.4
135°	518.2	406.4	340.9	299.3	278.9	265.4	238.1
150°	629.9	488.0	406.5	352.2	316.8	294.8	268.1
Run VMG	727.4	563.5	469.4	406.7	365.8	340.5	303.0
Selected Courses							
Windward / Leeward	763.3	594.9	503.9	448.0	412.4	389.7	361.9
All purpose	560.3	443.0	381.1	346.2	325.1	310.9	291.7

Scoring Options					
Wind Strength	**Light TWS < 8**	**Light-Moderate 8 ≤ TWS < 11**	**Moderate 11 ≤ TWS < 14**	**Moderate-Strong 14 ≤ TWS < 17**	**Strong TWS ≥ 17**
Time on Distance	482.0	392.5	339.9	314.0	298.1
Time on Time	1.0374	1.2737	1.4710	1.5924	1.6772

Super Yacht Measured Certificate 2022

Boat
MISSY
SY190

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Data in **meters/kilograms (Metric)**

HULL AND APPENDAGES (Lightship Trim)

Class	**MM330**	LOA		VCGD	**0.090**
Hull construction	**Carbon**	Max. Beam	**7.504**	VCGM	**-0.032**
Aramid Hull Core	**No**	Draft	**5.097**	Righting Moment (kg·m)	**4964.5**
Carbon Rudder	**Yes**	Displacement	**92,474**	Skeg	**No**
Trim tab	**No**	IMS L	**30.068**		
MCA Certified	**No**	Sink (kg/mm)	**139.47**		

PROPELLER (measured)

Propeller Type	**Feathering 4 blades**		
Installation	**Shaft exposed**	PRD	**0.750**
Twin screw	**No**	PIPA	**0.0582**
Bow Thruster Diam.			

POWERED WINCHES

Halyard Power (KW)	
Halyard Speed (m/min)	**127.0**
Sheet Power (KW)	
Sheet Speed (m/min)	**98.0**

SUPERSTRUCTURES

Area Front	**3.50**
Area Side	**7.66**
Dome frontal areas (m²)	

RIG

Rig Type	**Sloop**	P	**40.100**	MDT1	**0.265**	J	**11.990**
Carbon mast	**Yes**	IG	**41.620**	MDL1	**0.520**	SFJ	**0.902**
Non-circular rigging	**No**	ISP	**43.030**	MDT2	**0.250**	FSD	**0.000**
Fiber rigging	**Yes**	BAS	**2.728**	MDL2	**0.414**	SPL	
		E	**12.900**	TL	**11.023**	TPS	**15.430**
		BD		MW	**0.414**	WPL	
		CPW	**6.480**	GO	**0.451**		

FLOTATION AND STABILITY

Calculation method	**Boom inclining**	SFFP	**0.605**	SAFP	**32.867**	W1	**641.5**	PD1	**230.1**	WD	**22.250**
Flotation Date	**08/01/2019**	FFM	**0.428**	FAM	**0.292**	W2	**642.5**	PD2	**225.2**	PLM	**9000.00**
Measurer		FF	**0.544**	FA	**0.331**	W3	**641.5**	PD3	**224.3**	GSA	**1.0**
Comment		LCFcl	**17.800**	LCFsh	**18.162**	W4	**641.5**	PD4	**232.9**	RSA	**1.0**
		SG	**1.0252**	HBI	**2.198**	LCFD					

TANKS

Id	*Use*	*Description*	*Volume*	*LCG*	*VCG*	*Sp.Wght*	*Level Measurement*	*Level Sailing*
A	WATER	ATB	1,455	15.68	-0.26	1.0000	0.883	0.500
B	WATER	PORT	1,455	15.68	-0.26	1.0000	0.841	0.500
B	FUEL	PORT	3,352	18.21	0.40	0.8400	0.827	0.300
C	FUEL	STB	2,497	17.78	0.39	0.8400	0.916	0.300
D	FUEL	DAY TANK	150	20.60	0.95	0.8400	0.459	0.500

INVENTORY

Id	*Description*	*Weight Msrment*	*Weight Sailing*	*LCG*	*VCG*	*GA*	*Id*	*Description*	*Weight Msrment*	*Weight Sailing*	*LCG*	*VCG*	*GA*
A	ANCHOR #1	137	0	2.60	2.23	X	B	ANCHOR #2 + CHAIN (KEDGE)	70	70	3.00	-0.23	X
C	CHAIN	572	0	4.50	0.13	X	D	LIFERAFT	70	70	30.30	0.73	
E	VARIOUS ITEMS	2,525		17.15	2.42		F	KEEL BALLAST UP	27,929		15.27	-2.73	
G	KEEL BALLAST DOWN	-27,929		15.27	-4.05		H	KEEL DOWN VOLUME	3,024		15.27	-4.05	
I	KEEL UP VOLUME	-2,696		15.27	-2.73								

Super Yacht Measured Certificate **2022**

Boat
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SY190

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MAINSAIL

Id	MHB	MUW	MTW	MHW	MQW	Area	Meas.Date	Maker	Material	Comment
D	0.55	2.65	4.78	8.31	10.98	308.64	24/04/2021		Unknown	

HEADSAIL

Id	HHB	HUW	HTW	HHW	HQW	HLP	HLU	Btn	Flying	Furler	Area	Meas.Date	Maker	Material	Comment
g	0.08	3.23	6.35	12.30	16.50	19.43	42.80	No	Yes	Yes & TA	474.09	29/04/2021		Unknown	
F	0.15	1.89	3.50	6.60	9.65	12.67	41.50	No	No	Yes	270.86	24/04/2021		Unknown	
D	0.10	1.90	3.60	6.40	8.60	10.52	33.30	No	Inner	Yes	196.85	31/05/2019		Unknown	SS

ASYMMETRIC SPINNAKER

Id	SLU	SLE	SL	SHW	SFL	Ratio	Area	Meas.Date	Maker	Material	Comment
D	45.75	40.29	43.02	24.80	23.69	105%	881.12	04/02/2019	NORTH	Unknown	A2-OSP3051-001 85.40 KG
E	45.72	39.20	42.46	24.99	24.48	102%	880.62	04/02/2019	NORTH	Unknown	A4-OSP3051-002 149.7KG

Super Yacht Declared Certificate 2022

Boat
TAWERA
SY222

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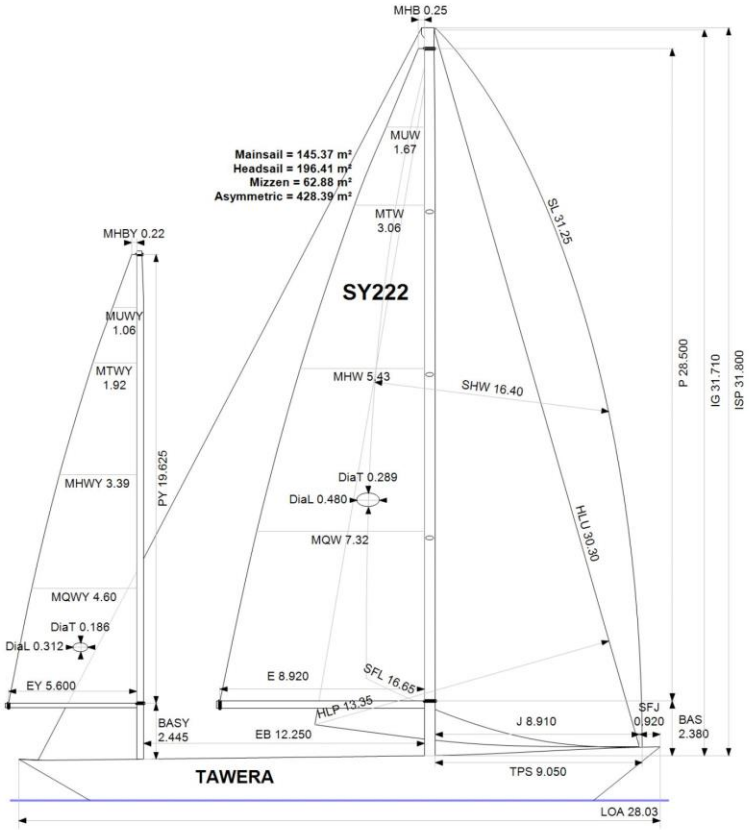

BOAT

Class	
Designer	**HOLLAND**
Builder	**ALLOY YACHT**
Age date	**06/1995**
Series date	**06/1995**
Offset file	**SY222.off**
Data file	
OPF light | strong	**0.0% | 0.0%**

HULL

Length Overall	**28.030 m**	
Maximum Beam	**6.346 m**	
Dynamic Allowance	**2.189%**	
	Lightship	Sailing
Displacement (kg)	**78,000**	**82,666**
Draft (m)	**3.274**	**3.325**
RM at 1° (kg·m)	**1773.7**	**1798.2**
VCGD (m)	**0.346**	**0.390**
VCGM (m)	**0.440**	**0.484**

SAIL AREAS (m²)

	Measured	Rated
Mainsail	**145.37**	**147.17**
Mizzen	**62.87**	**63.51**
Headsail Luffed	**196.41**	**196.41**
Headsail Flying		
Symmetric		
Asymmetric	**428.39**	**428.39**
Total upwind	**404.65**	
Total downwind	**636.63**	

SAILS IN INVENTORY

Headsails Luffed	**2**
Headsails Flying	**0**
Spinnakers	**1**

USE OF SAILS

Furled Sails Upwind	**0**
Mainsail Furler	**On boom**
Multiple Headsails	**No**
Tacking Unfurling Staysail	**No**

The owner and any other person in charge is responsible that boat is complying with her certificate in accordance with RRS 78.1 and ORC SY 402.

Rated boat velocities in knots

Wind Velocity	6 kt	8 kt	10 kt	12 kt	14 kt	16 kt	20 kt
Beat Angles	53.8°	52.3°	50.0°	48.9°	48.5°	48.1°	48.5°
Beat VMG	2.78	3.57	4.17	4.61	4.90	5.13	5.40
52°	4.52	5.80	6.74	7.39	7.85	8.21	8.68
60°	5.29	6.63	7.57	8.16	8.68	9.08	9.52
75°	6.06	7.40	8.44	9.24	9.67	9.94	10.26
90°	6.46	7.99	9.14	9.90	10.31	10.54	10.79
110°	6.55	8.02	9.24	10.18	10.71	10.97	11.33
120°	6.16	7.64	8.87	9.97	10.63	11.04	11.60
135°	5.37	6.84	8.05	9.14	10.07	10.65	11.34
150°	4.43	5.74	6.82	7.75	8.64	9.51	10.71
Run VMG	3.84	4.97	5.91	6.72	7.49	8.28	9.76
Gybe Angles	140.0°	141.5°	143.0°	145.0°	146.0°	161.0°	166.0°

ORC Ref **03190001RS9** Issued on **25/02/2022** Valid until **31/12/2022**

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Boat
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SY222

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Time Allowances in secs/NM							
Wind Velocity	**6 kt**	**8 kt**	**10 kt**	**12 kt**	**14 kt**	**16 kt**	**20 kt**
Beat VMG	1293.3	1007.8	863.6	781.5	734.0	702.4	666.3
52°	796.3	620.5	533.9	487.0	458.5	438.7	414.9
60°	681.1	543.1	475.7	441.0	414.6	396.6	378.2
75°	594.3	486.7	426.5	389.5	372.4	362.3	350.8
90°	557.0	450.3	394.0	363.6	349.1	341.6	333.6
110°	549.2	449.1	389.7	353.7	336.2	328.3	317.7
120°	584.0	471.3	405.7	361.2	338.7	326.2	310.4
135°	670.1	526.4	447.3	393.9	357.5	338.2	317.6
150°	811.8	627.7	527.8	464.3	416.5	378.4	336.0
Run VMG	937.4	724.8	609.4	536.1	481.0	434.9	368.9
Selected Courses							
Windward / Leeward	1115.3	866.3	736.5	658.8	607.5	568.7	517.6
All purpose	812.3	639.5	548.3	493.8	460.0	437.1	409.4

Scoring Options					
Wind Strength	**Light TWS < 8**	**Light-Moderate 8 ≤ TWS < 11**	**Moderate 11 ≤ TWS < 14**	**Moderate-Strong 14 ≤ TWS < 17**	**Strong TWS ≥ 17**
Time on Distance	696.8	565.4	483.7	442.1	418.1
Time on Time	0.7176	0.8843	1.0337	1.1311	1.1958

Super Yacht Declared Certificate 2022

Boat
TAWERA
SY222

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Data in **meters/kilograms (Metric)**

HULL AND APPENDAGES (Lightship Trim)

Class		LOA	**28.030**	VCGD	**0.346**
Hull construction	**Solid**	Max. Beam	**6.346**	VCGM	**0.440**
Aramid Hull Core	**No**	Draft	**3.274**	Righting Moment (kg·m)	**1773.7**
Carbon Rudder	**No**	Displacement	**78,000**	Skeg	**Yes**
Trim tab	**No**	IMS L	**22.605**		
MCA Certified	**Yes**	Sink (kg/mm)	**92.60**		

PROPELLER (measured)

Propeller Type	**Feathering 3 blades**		
Installation	**Shaft exposed**	PRD	**0.965**
Twin screw	**No**	PIPA	**0.0531**
Bow Thruster Diam.			

POWERED WINCHES

Halyard Power (KW)	**45.6**
Halyard Speed (m/min)	
Sheet Power (KW)	**32.4**
Sheet Speed (m/min)	

SUPERSTRUCTURES

Area Front	**4.78**
Area Side	**9.57**
Dome frontal areas (m²)	

RIG

Rig Type	**Ketch**	P	**28.500**	MDT1	**0.289**	J	**8.910**	PY	**19.625**	MDT1Y	**0.186**
Carbon mast	**No**	IG	**31.710**	MDL1	**0.480**	SFJ	**0.920**	IY	**22.394**	MDL1Y	**0.312**
Non-circular rigging	**No**	ISP	**31.800**	MDT2	**0.289**	FSD		EB	**12.250**	MDT2Y	**0.186**
Fiber rigging	**No**	BAS	**2.380**	MDL2	**0.433**	SPL		BASY	**2.445**	MDL2Y	**0.230**
		E	**8.920**	TL	**5.700**	TPS	**9.050**	EY	**5.600**	TLY	
		BD		MW	**0.433**	WPL		BDY			
		CPW	**4.600**	GO	**0.485**						

TANKS

Id	*Use*	*Description*	*Volume*	*LCG*	*VCG*	*Sp.Wght*	*Level Sailing*
A	WATER	2x1640	3,280	10.08	-0.20	1.0000	0.300
B	FUEL	2x1700	3,400	15.10	0.00	0.8400	0.100
C	FUEL	2x1050	2,100	18.37	-0.35	0.8400	0.300

INVENTORY

Id	*Description*	*Weight Sailing*	*LCG*	*VCG*	*GA*	*Id*	*Description*	*Weight Sailing*	*LCG*	*VCG*	*GA*
A	SPARE ANCHOR	20	2.50	0.20	X						

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Boat
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SY222

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MAINSAIL

Id	MHB	MUW	MTW	MHW	MQW	Area	Meas.Date	Maker	Material	Comment
A	0.25	1.67	3.06	5.43	7.32	145.37	28/01/2021		Unknown	MOD

MIZZEN

Id	MHB	MUW	MTW	MHW	MQW	Area	Meas.Date	Maker	Material	Comment
B	0.22	1.06	1.92	3.39	4.60	62.87	28/01/2021		Unknown	MOD

HEADSAIL

Id	HHB	HUW	HTW	HHW	HQW	HLP	HLU	Btn	Flying	Furler	Area	Meas.Date	Maker	Material	Comment
F	0.20	1.52	3.01	6.33	9.77	13.35	30.30	No	No	Yes	196.41	10/03/2021	EVOLUTION NZ	Unknown	Race Jib
E	0.18	1.33	2.63	5.34	8.11	10.59	30.49	No	No	Yes	163.14	09/02/2021		Unknown	HWJ
D	0.20	1.22	2.45	4.89	6.76	8.90	27.00	No	Inner	No	124.99	28/01/2021			

ASYMMETRIC SPINNAKER

Id	SLU	SLE	SL	SHW	SFL	Ratio	Area	Meas.Date	Maker	Material	Comment
A	32.80	29.70	31.25	16.40	16.65	98%	428.39	19/12/2018		Unknown	