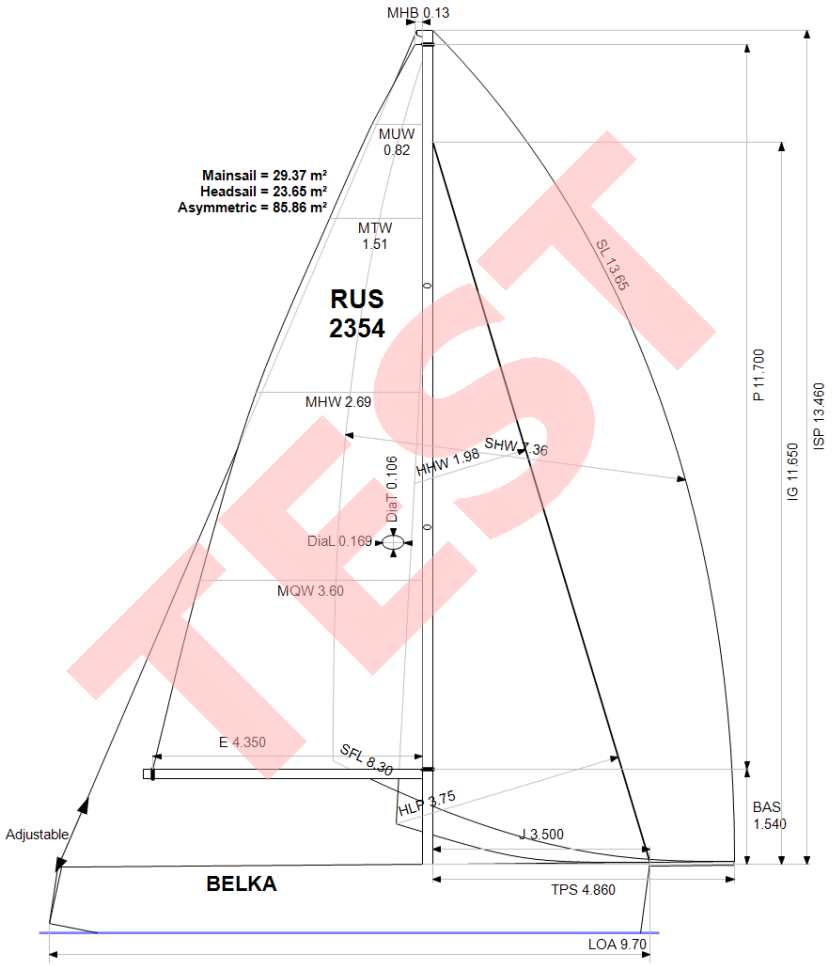
Club
Certificate
2022

Boat
BELKA
RUS 2354

Novokolomiazhskii av 11-70
St-Petersburg
Russia



TEST

APH: **568.0** CDL: **8.643**

GPH: **639.0** CertNo: **2354.2**

BOAT

Class	**Raketa 970**
Designer	**M.Tikhonov**
Builder	**Raketa Yachts**
Age date	**01.2020**
Series date	**01.2009**
Offset file	**Raket970.off**
Data file	**RU2354_BELKA**

HULL

Length Overall	**9.700 m**
Maximum Beam	**3.170 m**
Draft	**2.080 m**
Displacement	**3 538 kg**
DLR	**4.6751**
IMS Division	**Cruiser/Racer**
Dynamic Allowance	**0.207%**
Age Allowance	**0.422%**

PROPELLER

Installation	**Strut**
Type	**Folding 2 blades**
Diameter	**0.412m**

CREW

Maximum weight	**603 kg**
Minimum weight	**452 kg** ** when applied*
Non Manual Power	**No**
Crew Arm Extension	

SAIL AREAS (m²)

	Measured	Rated
Mainsail	**29.37**	**29.91**
Headsail Luffed	**23.65**	**23.65**
Headsail Flying		
Symmetric		
Asymmetric	**85.86**	**85.86**

(All asymmetric spinnakers with SHW/SFL > 85%)

STORM SAIL AREAS (m²)

Trysail	**8.91**
Storm Jib	**6.79**
Heavy Weather Jib	**18.33**

SAIL LIMITS

Headsails	**5** ** Woven polyester sails*
Spinnakers	**4**

STABILITY

Righting Moment	**88.2 kg·m**
Stability Index	**N/A**

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 Rule 304.

Rated boat velocities in knots							
Wind Velocity	**6 kt**	**8 kt**	**10 kt**	**12 kt**	**14 kt**	**16 kt**	**20 kt**
Beat Angles	43.3°	41.8°	41.1°	39.1°	38.4°	38.2°	38.4°
Beat VMG	3.17	3.88	4.45	4.88	5.04	5.10	5.14
52°	4.88	5.86	6.55	6.93	7.09	7.15	7.19
60°	5.18	6.17	6.76	7.09	7.29	7.37	7.43
75°	5.40	6.40	6.92	7.23	7.51	7.75	7.95
90°	5.65	6.72	7.21	7.42	7.60	7.91	8.51
110°	5.72	6.82	7.36	7.85	8.24	8.53	9.07
120°	5.56	6.71	7.28	7.80	8.38	8.96	9.73
135°	5.00	6.21	6.99	7.46	8.00	8.59	10.18
150°	4.25	5.36	6.32	6.93	7.27	7.60	8.42
Run VMG	3.68	4.64	5.47	6.00	6.31	6.82	7.53
Gybe Angles	144.4°	147.8°	148.5°	150.1°	152.0°	174.8°	175.3°

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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	1134.5	926.8	808.4	737.8	713.8	705.4	700.7
52°	737.6	614.4	549.5	519.7	507.7	503.3	500.9
60°	695.6	583.8	532.5	507.8	494.0	488.2	484.8
75°	666.7	562.5	520.2	497.7	479.1	464.3	452.6
90°	637.7	535.6	499.2	485.0	473.9	455.0	423.1
110°	629.5	527.5	489.1	458.7	436.9	422.2	397.0
120°	647.7	536.7	494.5	461.6	429.5	401.8	369.8
135°	720.0	579.7	515.0	482.4	450.2	419.2	353.8
150°	846.9	671.5	569.6	519.5	495.1	473.4	427.5
Run VMG	977.9	775.3	657.7	599.8	570.9	527.5	478.0
Selected Courses							
Windward / Leeward	1056.2	851.1	733.1	668.8	642.4	616.5	589.4
All purpose	810.5	663.0	587.6	546.6	524.8	506.6	481.3

Single Number Scoring Options		
Course	**Time On Distance**	**Time On Time**
Windward / Leeward	704.8	0.8514
All purpose	568.0	1.0563

Custom scoring options for Russia

Single Number	Time On Distance	Time On Time
Predominantly Upwind	620.0	0.9677
Predominantly Downwind	571.9	1.0492

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

HULL AND APPENDAGES (Lightship Trim)

Class	**Raketa 970**	LOA	**9.700**	VCGD	**0.004**
Measurement	**30.04.2021**	Max. Beam	**3.170**	VCGM	**-0.073**
HIN		Draft	**2.080**	RM Measured (kg·m)	**88.2**
Plan review		Displacement	**3 538**	RM Default (kg·m)	**81.6**
Hull construction	**Cored**	Wetted area	**20.95**	Limit of positive stability(°)	**N/A**
Aramid Hull Core	**No**	IMS L	**9.095**	Stability Index	**N/A**
Carbon Rudder	**No**	LSM0	**9.112**		
Light stanchions	**No**	Acc. length	**9.700**		
Trim tab	**No**	Sink (kg/mm)	**15.58**		

PROPELLER

Propeller Type	**Folding 2 blades**				
Installation	**Strut**	PRD	**0.412**	EDL	ST3
Twin screw	**No**	PBW		ST1	ST4
Hydro generator	**No**	PIPA	**0.0007**	ST2	ST5

RIG

Forestay tension	**Aft**	P	**11.700**	E	**4.350**
Inner stay	**None Fitted**	IG	**11.650**	J	**3.500**
Carbon mast	**No**	ISP	**13.460**	BAS	**1.540**
Headsail furler	**No**	MDT1	**0.106**	FSD	**0.026**
Mainsail furler	**No**	MDL1	**0.169**	SFJ	
Articulated bowsprit	**No**	MDT2		SPL	
Non-circular rigging	**No**	MDL2		WPL	
Fiber rigging	**No**	TL	**No Taper**	TPS	**4.860**
Runners/Checkstays	**0**	MW		BD	
Spreaders	**2**	GO		MWT	
				MCG	

FLOTATION AND STABILITY

Calculation method	**RM entered directly**	SFFP	**0.497**	SAFP	**9.500**
Flotation Date	**29.04.2021**	FFM		FAM	
Measurer		FF	**1.139**	FA	**1.057**
Comment		LCFcl	**5.211**	LCFsh	**5.422**
		SG		HBI	**1.101**

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MAINSAIL

Id	*MHB*	*MUW*	*MTW*	*MHW*	*MQW*	*Area*	*Meas.Date*	*Maker*	*Material*	*Comment*
1	0.13	0.82	1.51	2.69	3.60	29.37		Ulman Sails	Dacron	

HEADSAIL

Id	*HHB*	*HUW*	*HTW*	*HHW*	*HQW*	*HLP*	*HLU*	*Btn*	*Flying*	*FT*	*Area*	*Meas.Date*	*Maker*	*Material*	*Comment*
1	0.05	0.53	1.02	1.98	2.91	3.75		Yes	No		23.65		Ulman Sails	Dacron	

ASYMMETRIC SPINNAKER

Id	*SLU*	*SLE*	*SL*	*SHW*	*SFL*	*Ratio*	*Area*	*Meas.Date*	*Maker*	*Material*	*Comment*
1	14.90	12.40	13.65	7.36	8.30	89%	85.86		Unman Sails	Nylon	