

BOAT
Name TOGNA Sail Nr PER 390

GPH
694.4

HULL					
Length Overall	11.215 m				
Maximum Beam	3.846 m				
Displacement	8,022 kg				
Draft	1.675 m				
IMS Reg. Division	Cruiser/Racer				
Dynamic Allowance	1.497%				
Fwd Accommodation	Yes				
Hull Construction	Solid				
Carbon Rudder	No				
Trim Tab	No				
IMS L	9.993	VCGD	0.207	VCGM	0.226
Sink	21.34 kg/mm	Wetted Area	29.71 m²		



2010
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GENERAL
Class Beneteau Ocean 390
Designer Briand
Builder Beneteau
Series 02/1988
Age 02/1988
Age Allowance 0.975%
Offset File H190.BOF - 04/01/1994 11:51:16 a.m.
Measurement by G LIZA / L YARLAQU - 26/07/2010

SCORING OPTIONS						
	OFFSHORE			INSHORE		
	COASTAL / LONG DISTANCE			WINDWARD / LEEWARD		
Time On Distance	694.4			792.6		
Time On Time	0.8640			0.8517		
Performance Line	PLT	PLD		PLT	PLD	
	0.697	59.8		0.772	210.3	
Triple Number	Low	Medium	High	Low	Medium	High
	0.8252	1.1073	1.2728	0.6184	0.8679	1.0349

Rating Office

Roberto Peschiera
peschiera56@gmail.com
Asociación de Veleros
Oceánicos del Peru

TIME ALLOWANCES							
Wind Velocity	6 kt	8 kt	10 kt	12 kt	14 kt	16 kt	20 kt
Beat VMG	1307.9	1059.7	927.9	853.4	812.3	786.0	763.2
52°	816.6	667.6	589.8	551.4	531.1	518.9	507.0
60°	743.1	612.7	554.0	521.6	502.1	491.6	480.8
75°	685.7	573.4	519.4	494.0	478.7	463.6	448.3
90°	650.7	546.8	502.7	476.4	460.6	452.9	438.6
110°	671.3	559.8	511.2	481.0	457.7	438.9	416.6
120°	713.4	582.4	524.3	490.4	465.4	444.7	412.0
135°	816.1	649.9	560.2	515.0	485.7	462.9	426.7
150°	973.4	757.4	633.0	558.5	516.6	488.3	447.2
Run VMG	1124.0	874.5	730.6	633.4	571.1	529.6	477.6

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VPP Ver.	2010 1.11
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Selected Courses							
Windward / Leeward	1237.1	982.4	840.6	754.0	700.2	665.3	627.1
Circular Random	977.5	780.2	672.5	608.7	568.7	542.5	510.3
Ocean for PCS	1047.4	817.2	687.2	606.7	553.5	516.0	465.0
Non Spinnaker	1051.7	832.5	711.0	637.9	591.5	560.7	523.2

Crew Weight	
Declared	661 kg
Default*	661 kg
Non Manual Power	No

Special Scoring		
	ToD	ToT
Double Handed	696.0	0.8620
Non Spinnaker	735.2	0.8161
N/S Perf. Line	30.8	0.622

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	47.9°	46.3°	46.6°	45.0°	44.0°	42.7°	42.5°
Beat VMG	2.75	3.40	3.88	4.22	4.43	4.58	4.72
52°	4.41	5.39	6.10	6.53	6.78	6.94	7.10
60°	4.84	5.88	6.50	6.90	7.17	7.32	7.49
75°	5.25	6.28	6.93	7.29	7.52	7.77	8.03
90°	5.53	6.58	7.16	7.56	7.82	7.95	8.21
110°	5.36	6.43	7.04	7.48	7.87	8.20	8.64
120°	5.05	6.18	6.87	7.34	7.73	8.10	8.74
135°	4.41	5.54	6.43	6.99	7.41	7.78	8.44
150°	3.70	4.75	5.69	6.45	6.97	7.37	8.05
Run VMG	3.20	4.12	4.93	5.68	6.30	6.80	7.54
Gybe Angles	143.8°	148.4°	152.0°	160.2°	168.2°	172.2°	175.0°

Sails Limitations		
Genoa	Jibs	Spinnakers
1	0	3
Spinnaker configuration Symmetric		

Storm Sails Areas	
Heavy Weather Jib	27.50
Storm Jib (JL=9.28)	10.19
Storm Trysail	9.22

Owner

Enrique Ballen/Juan L Kruger

I certify that I understand my responsibilities under ORC Rules and Regulations

Signature

BOAT	
Name TOGNA File PER390.dxt	Sail Nr PER 390 Data in meters/kilograms

RIG	
Forestay Tension Fixed	Spreaders 2
Inner Forestay Adjustable	Runners 0
Carbon Mast No	Jumpers None
Taper Hollows No	Jib Furler Yes
Fiber Rigging No	w/o Backstay No

P 12.450	E 4.230	MDT1 0.141	TL
IG 14.250	J 4.398	MDL1 0.221	MWT
ISP 14.460	SFJ 0.000	MDT2 0.141	MCG
SPS 2.515	SPL 3.758	MDL2 0.221	CPW 2.495
BAS 1.658	TPS	MW 0.221	BD 0.144
BAL 0.147	FSP 0.084	GO 0.228	BWT

MIZZEN RIG AND SAILS	
N/A	

COMMENTS	
primera medición ORCi del barco	

INCLINING TEST AND FREEBOARDS			
Inclining Test Current Inclining			
Flotation date 02/07/2010		SG 1.0260	
FFM 1.269	FF 1.269	SFFP 0.486	
FAM 1.085	FA 1.085	SAFP 10.477	
W1 80.000	PD1 552.3	WD 11.350	
W2 80.000	PD2 552.3	GSA 1.0	
W3 80.000	PD3 552.3	RSA 1.0	
W4 80.000	PD4 552.3	PLM 9000.0	
Maximum beam station from stern			6.945
RM Measured / Default			129.5 / 143.1
Limit of positive stability			105.7°
Stability Index			109.1
Freeboard at mast at 4.398			1.144

PROPELLER			
Installation Shaft	PRD 0.464		
Type Feathering 3 blades	PBW 0.151		
Twin Screw No	PIPA 0.0016		
PSA 40.000	PHL 0.125	ST3	ESL 0.000
PSD 0.030	ST1	ST4	
PHD 0.075	ST2	ST5	

WATER BALLAST	
N/A	

CENTERBOARD	
N/A	




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SAILS (Maximum Areas)									
Mainsail	HB	MGT	MGU	MGM	MGL	MSW	Area	Area (r)	Formula
	0.175	0.76	1.38	2.50	3.37	17.50	29.39	29.74	$P/8 \cdot (E + 2 \cdot MGL + 2 \cdot MGM + 1.5 \cdot MGU + MGT + 0.5 \cdot HB)$
Jib/Genoa	JH	JGT	JGU	JGM	JGL	JL	LPG		
	0.70	0.71	1.40	2.94	4.66	13.63	6.50		$0.1125 \cdot JL \cdot (1.445 \cdot LPG + 2 \cdot JGL + 2 \cdot JGM + 1.5 \cdot JGU + JGT + 0.5 \cdot JH)$
Symmetric	SL	SMG	SF						
	13.90	7.84	7.82						$SL \cdot (SF + 4 \cdot SMG) / 6$

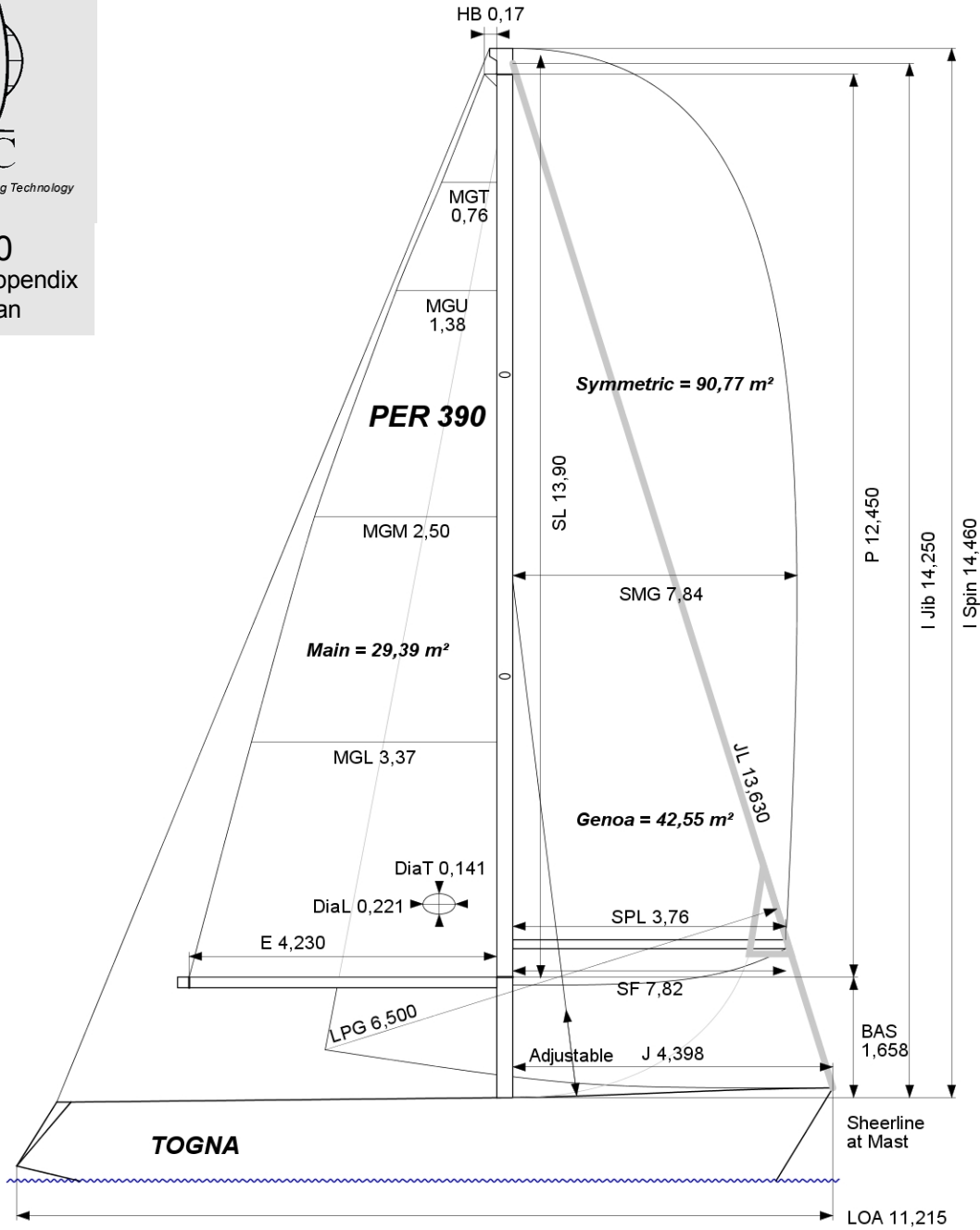
MEASUREMENT INVENTORY			
Measurer G LIZA / L YARLEQUE			
Date 02/07/2010			
Comment			
Id	Item	Weight	Distanc Description
Id	Item	Weight	Description
3.9	Deck Gear	30.0	jjo. escotas, manillas
3.3	Fwd Items		refrigerador proa babor

MEASUREMENT INVENTORY						
Id	Item	Tank Use	Tank Type	Capct	Dist.	Condt Description
2.5	Liquid Tank	combustible	acero	40.0	8.90	3.0 a popa sobre
2.4	Liquid Tank	agua	plastico	20.0	8.50	0.0 a popa babor
2.3	Liquid Tank	agua	plastico	20.0	5.80	0.0 a estribor debajo
2.2	Liquid Tank	agua	acero	20.0	2.70	0.0 proa sobre crujia
2.1	Liquid Tank	agua	plastic	50.0	2.10	0.0 proa sobre crujia
Id	Item	Weight	Distanc	Description		
3.7	Battery	80.0	4.50	4 baterias a popa estribor		
3.6	Miscellaneous	20.0	5.95	cocina lado babor		
3.4	Miscellaneous	10.0	4.90	horno microwondas a babor		
3.2	Miscellaneous	2.0	0.00	bomba de agua		
3.1	Miscellaneous	15.0	3.70	motor refrigerador		



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Sail Plan



SAILS INVENTORY

MANSAIL

Id	HB	MGT	MGU	MGM	MGL	MSW	Area	Measurer	Meas.Date	Manufacture	Material	Comment
M1	0.175	0.76	1.38	2.50	3.37	17.50	29.39	GLIZA/L YAR	09/07/2010	OMEGA	Dacron	

JIBS / GENOAS

Id	JH	JGT	JGU	JGM	JGL	LPG	JL	Overlp	Area	Measurer	Meas.Date	Manufacture	Material	Comment
G1	0.70	0.71	1.40	2.94	4.66	6.50	13.63	148%	42.55	G LIZA/L	09/07/2010	QUANTUM	Dacron	

SYMMETRIC SPINNAKERS

Id	SL	SMG	SF	Area	Measurer	Meas.Date	Manufacture	Material	Comment
S1	13.90	7.84	7.82	90.77	G LIZA/L YAR	09/07/2010	QUANTUM	Nylon	

ASYMMETRIC SPINNAKERS

Id	SLU	SLE	ASL	AMG	ASF	Area	Kind	Measurer	Meas.Date	Manufacture	Material	Comment
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