

BOAT
Name ATHENEA Sail Nr PER 405

GPH
651.2

HULL					
Length Overall	11.898 m				
Maximum Beam	3.984 m				
Displacement	7,420 kg				
Draft	1.952 m				
IMS Reg. Division	Cruiser/Racer				
Dynamic Allowance	1.096%				
Fwd Accommodation	Yes				
Hull Construction	Solid				
Carbon Rudder	No				
Crew Arm Extension					
IMS L	10.628	VCGD	0.068	VCGM	0.115
Sink	24.48 kg/mm	Wetted Area	31.86 m²		



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2011
ORC International
Certificate

GENERAL
Class Dufour 405 GLarge
Designer FELCI
Builder DUFOUR
Series 02/2009
Age 03/2009
Age Allowance 0.130%
Offset File D405-d.OFF - 10/09/2011 08:33:00 a.m.
Measurement by G.Liza/L.Yarlaque - 24/02/2010

SCORING OPTIONS						
	OFFSHORE			INSHORE		
	COASTAL / LONG DISTANCE			WINDWARD / LEEWARD		
Time On Distance	651.2			723.0		
Time On Time	0.9214			0.9336		
Performance Line	PLT	PLD		PLT	PLD	
	0.724	46.3		0.685	125.6	
Triple Number	Low	Medium	High	Low	Medium	High
	0.8712	1.1833	1.3749	0.6556	0.9231	1.1090

Rating Office

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Oceanicos del Peru



TIME ALLOWANCES							
Wind Velocity	6 kt	8 kt	10 kt	12 kt	14 kt	16 kt	20 kt
Beat VMG	1219.9	991.6	862.4	785.1	746.6	722.0	699.0
52°	766.9	630.6	554.9	511.3	489.3	478.5	468.2
60°	704.4	581.4	522.8	484.7	463.9	454.9	445.4
75°	655.0	547.8	494.7	466.4	444.8	427.9	415.2
90°	642.5	531.2	476.2	451.7	440.3	425.9	401.7
110°	652.4	530.3	469.0	438.0	415.4	396.6	380.8
120°	665.6	541.4	482.0	450.9	426.4	404.9	365.3
135°	769.3	614.0	524.0	477.1	449.8	428.0	390.7
150°	924.5	727.0	605.0	533.8	488.2	459.6	418.2
Run VMG	1067.5	839.5	698.6	610.4	551.1	506.8	453.2

Certificate	
Number	PERI30
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Issued On	11/11/2011
VPP Ver.	2011 1.02
Valid until	31/03/2012

Selected Courses							
Windward / Leeward	1164.3	927.9	791.5	707.9	656.3	621.3	583.1
Circular Random	921.9	734.0	630.5	568.3	529.0	502.8	470.2
Ocean for PCS	986.3	768.2	644.1	566.6	515.0	478.2	426.9
Non Spinnaker	987.4	780.1	664.4	593.9	548.8	518.6	481.3

Crew Weight	
Declared	640 kg
Default*	809 kg
Non Manual Power	No

Special Scoring		
	ToD	ToT
Double Handed	651.4	0.9211
Non Spinnaker	687.0	0.8733
N/S Perf. Line	19.5	0.649

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	46.7°	45.0°	45.5°	43.6°	42.4°	42.1°	42.2°
Beat VMG	2.95	3.63	4.17	4.59	4.82	4.99	5.15
52°	4.69	5.71	6.49	7.04	7.36	7.52	7.69
60°	5.11	6.19	6.89	7.43	7.76	7.91	8.08
75°	5.50	6.57	7.28	7.72	8.09	8.41	8.67
90°	5.60	6.78	7.56	7.97	8.18	8.45	8.96
110°	5.52	6.79	7.68	8.22	8.67	9.08	9.45
120°	5.41	6.65	7.47	7.98	8.44	8.89	9.86
135°	4.68	5.86	6.87	7.55	8.00	8.41	9.21
150°	3.89	4.95	5.95	6.74	7.37	7.83	8.61
Run VMG	3.37	4.29	5.15	5.90	6.53	7.10	7.94
Gybe Angles	141.2°	143.6°	145.4°	157.4°	163.9°	167.9°	173.7°

Sails Limitations		
Genoa	Jibs	Spinnakers
1	0	3
Spinnaker configuration Asymmetric-CL		

Storm Sails Areas	
Heavy Weather Jib	28.75
Storm Jib (JL=9.49)	10.65
Storm Trysail	10.91

Owner

Carlos Manuel Leon-Velarde

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

Signature

BOAT	
Name ATHENEA File PER405.dxt	Sail Nr PER 405 Data in meters/kilograms

RIG	
Forestay Tension Aft	Spreaders 2
Inner Forestay None Fitted	Runners 0
Carbon Mast No	Jumper Struts None
Taper Hollows No	Jib Furler Yes
Fiber Rigging No	Main Furler No
Lenticular Rigging No	Without Backstay No
Articulated Bowsprit No	

P 13.553	E 4.600	MDT1 0.140	TL
IG 14.560	J 4.490	MDL1 0.220	MWT
ISP 15.150	SFJ 0.150	MDT2 0.140	MCG
SPS	SPL	MDL2 0.220	CPW 2.760
BAS 1.797	TPS 5.420	MW 0.220	BD 0.195
BAL 0.128	FSP	GO 0.230	BWT

MIZZEN RIG AND SAILS	
N/A	

COMMENTS	
Cambio off set	

INCLINING TEST AND FREEBOARDS		
Inclining Test Current Inclining		
Flotation date 10/11/2011	SG 1.0260	
FFM 1.513	FF 1.513	SFFP 0.533
FAM 1.275	FA 1.275	SAFP 11.378
W1 127.30	PD1 593.1	WD 13.580
W2 127.30	PD2 593.1	GSA 1.0
W3 127.30	PD3 593.1	RSA 1.0
W4 127.30	PD4 593.1	PLM 9000.0
Maximum beam station from stem		7.400
RM Measured / Default		229.5 / 213.3
Limit of positive stability		116.9°
Stability Index		117.9
Freeboard at mast at 4.640		1.377

PROPELLER		
Installation Strut	PRD 0.450	
Type Folding	PBW 0.115	
Twin Screw No	PIPA 0.0039	
ST1 0.066	ST3 0.178	
ST2 0.177	ST4 0.111	
ST5 0.289	EDL 2.780	

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
	0.135	0.86	1.58	2.76	3.74	16.40	35.40	35.89	$P/8 \cdot (E + 2 \cdot MGL + 2 \cdot MGM + 1.5 \cdot MGU + MGT + 0.5 \cdot HB)$
Jib/Genoa	JH	JGT	JGU	JGM	JGL	JL	LPG		
	0.08	0.78	1.54	3.15	4.86	14.51	6.65	46.94	$0.1125 \cdot JL \cdot (1.445 \cdot LPG + 2 \cdot JGL + 2 \cdot JGM + 1.5 \cdot JGU + JGT + 0.5 \cdot JH)$
Asymmetric	SLU	SLE	ASL	AMG	ASF				
	16.16	14.82	15.49	9.10	9.47			118.42	$ASL \cdot (ASF + 4 \cdot AMG) / 6$

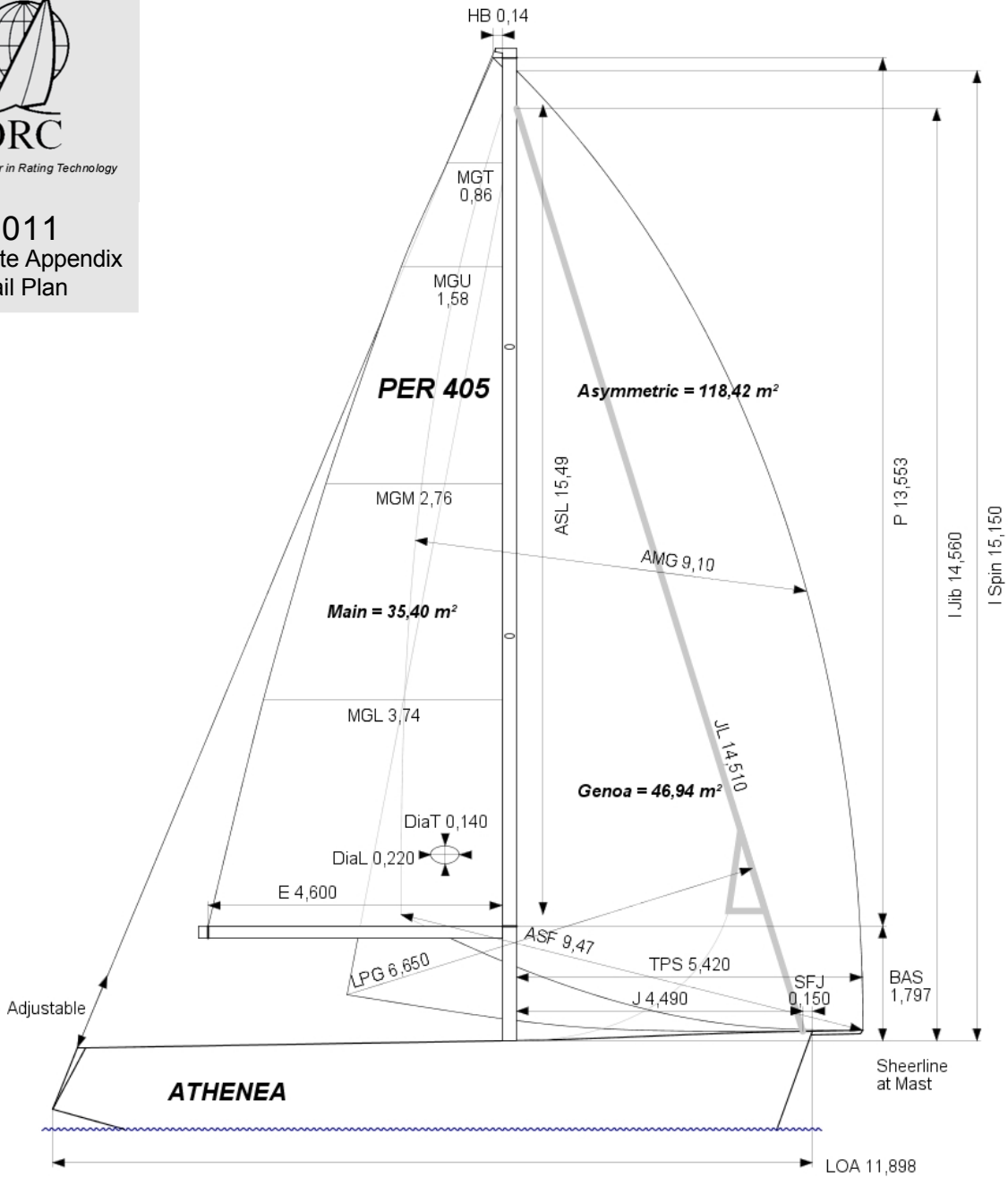
MEASUREMENT INVENTORY			
Measurer G.Liza/L.Yarlaque Date 11/11/2011 Comment ancla ubicada en proa			
Id	Item	Weight	Distanc Description
2	Anchor	13.5	0.69 ancla
2	Chain	4.1	0.69 2 metros de
4	Tools	10.0	5.44 herramientas
Id	Item	Maker	Model
5	Engine	Volvo Penta	40 HP
Id	Item	Weight	Description
8	Deck Gear	23.0	herrajes de cubierta
9a	Fwd Items	10.0	motor winche

MEASUREMENT INVENTORY						
Id	Item	Tank Use	Tank Type	Capct	Dist.	Condt Description
6d	Liquid Tank	agua	plastico	15.0	9.49	15.0 tanque agua
6c	Liquid Tank	petroleo	plastico	160.0	9.44	0.0 tanque petroleo a
6b	Liquid Tank	agua	plastico	200.0	9.44	0.0 tanque agua a
6a	Liquid Tank	agua	plastico	160.0	2.19	0.0 tanque agua a
Id	Item	Weight	Distanc	Description		
3c	Battery	20.0	10.24	bateria		
3b	Battery	20.0	10.04	bateria		
3a	Battery	20.0	8.84	bateria		
9h	Miscellaneous	15.0	11.44	radar		
9d	Miscellaneous	8.0	7.44	motor nev era		
9c	Miscellaneous	25.0	7.44	cocina basculante		
9b	Miscellaneous	15.0	6.94	nev era a estribor		



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Sail Plan



SAILS INVENTORY

MANSAIL

Id	HB	MGT	MGU	MGM	MGL	MSW	Area	Measurer	Meas.Date	Manufacture	Material	Comment
M1	0.135	0.86	1.58	2.76	3.74	16.40	35.40	G LIZA/L YARLE	27/04/2011	QUANTUM	Kevlar	NUEVA MAYOR

JIBS / GENOAS

Id	JH	JGT	JGU	JGM	JGL	LPG	JL	Ovrlp	Area	Measurer	Meas.Date	Manufacture	Material	Comment
C1	0.08	0.78	1.54	3.15	4.86	6.65	14.51	148%	46.95	G LIZA/L	27/04/2011	QUANTUM	Kevlar	NUEVA GENOA

SYMMETRIC SPINNAKERS

Id	SL	SMG	SF	Area	Measurer	Meas.Date	Manufacture	Material	Comment
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ASYMMETRIC SPINNAKERS

Id	SLU	SLE	ASL	AMG	ASF	Area	Kind	Measurer	Meas.Date	Manufacture	Material	Comment
S1	16.16	14.82	15.49	9.10	9.47	118.42	asym	G LIZA / L	26/08/2011	NORTH	Nylon	NUEVO SPI
1	14.60	13.10	13.85	8.10	8.25	93.83	asym	G.Liza/L.Yarlaque			Nylon	