

BOAT
Name ATHENEA
Sail Nr PER 405

GPH
640.0

HULL	
Length Overall	11.880 m
Maximum Beam	4.012 m
Displacement	8,071 kg
Draft	1.976 m
IMS Reg. Division	Cruiser/Racer
Dynamic Allowance	0.303%
Fwd Accommodation	Yes
Hull Construction	Solid
Carbon Rudder	No
Crew Arm Extension	
IMS L	10.720
VCGD	0.179
VCGM	0.202
Sink	25.29 kg/mm
Wetted Area	32.83 m²




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2013
ORC International
Certificate

GENERAL
Class Dufour 405 GLarge
Designer FELCI
Builder DUFOUR
Series 02/2009
Age 03/2009
Age Allowance 0.130%
Offset File ATH-13-0.off - 04/07/2013 10:55:00
Measurement by G.Liza/L.Yarlaque - 24/02/2010

SCORING OPTIONS	OFFSHORE			INSHORE		
	COASTAL / LONG DISTANCE			WINDWARD / LEEWARD		
Time On Distance	615.7			705.2		
Time On Time	0.9745			0.9572		
Performance Line	PLT	PLD		PLT	PLD	
	0.755	59.2		0.689	115.1	
Triple Number	Low	Medium	High	Low	Medium	High
	0.8926	1.2001	1.3945	0.6750	0.9423	1.1449

Rating Office
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Oceanicos del Peru



TIME ALLOWANCES		6 kt	8 kt	10 kt	12 kt	14 kt	16 kt	20 kt
Wind Velocity								
Beat VMG	1162.9	953.5	837.0	752.0	703.4	675.9	651.7	
52°	736.7	612.1	538.8	493.4	474.4	466.3	458.7	
60°	681.9	572.1	507.9	475.5	459.2	452.0	444.4	
75°	639.0	540.0	488.0	463.5	447.1	433.7	421.2	
90°	636.8	526.6	476.3	453.8	443.7	432.3	408.0	
110°	644.3	525.5	470.7	446.6	426.7	407.5	387.3	
120°	657.8	536.8	482.0	456.5	436.1	415.5	377.4	
135°	760.1	610.2	522.5	478.1	454.9	436.2	399.5	
150°	908.9	722.1	609.0	533.6	487.6	462.3	426.3	
Run VMG	1049.5	833.8	703.2	615.5	554.8	514.2	463.7	

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ORC Ref **PER00000724**
Issued On **16/12/2013**
VPP Ver. **2013 1.00**
Valid until **31/03/2014**

Selected Courses		6 kt	8 kt	10 kt	12 kt	14 kt	16 kt	20 kt
Windward / Leeward	1106.2	893.6	770.1	683.7	629.1	595.1	557.7	
Circular Random	901.4	720.2	620.2	559.9	521.5	495.9	464.0	
Ocean for PCS	963.5	753.6	634.1	559.6	510.2	475.5	428.0	
Non Spinnaker	962.8	763.4	651.9	583.7	539.7	510.2	473.6	

Crew Weight

Declared **690 kg**
Default* **751 kg**
Non Manual Pwr **No**

Special Scoring

ToD ToT
D. Hand OSN **616.1 0.9739**
Non Spin. OSN **645.7 0.9293**
N/S Perf. Line **31.6 0.679**

Velocity Prediction in Knots for True Wind Speeds		6 kt	8 kt	10 kt	12 kt	14 kt	16 kt	20 kt
Wind Velocity								
Beat Angles	46.3°	45.0°	44.7°	44.6°	42.7°	41.2°	39.8°	
Beat VMG	3.10	3.78	4.30	4.79	5.12	5.33	5.52	
52°	4.89	5.88	6.68	7.30	7.59	7.72	7.85	
60°	5.28	6.29	7.09	7.57	7.84	7.97	8.10	
75°	5.63	6.67	7.38	7.77	8.05	8.30	8.55	
90°	5.65	6.84	7.56	7.93	8.11	8.33	8.82	
110°	5.59	6.85	7.65	8.06	8.44	8.83	9.30	
120°	5.47	6.71	7.47	7.89	8.25	8.66	9.54	
135°	4.74	5.90	6.89	7.53	7.91	8.25	9.01	
150°	3.96	4.99	5.91	6.75	7.38	7.79	8.45	
Run VMG	3.43	4.32	5.12	5.85	6.49	7.00	7.76	
Gybe Angles	142.3°	144.5°	145.6°	152.9°	156.8°	163.0°	174.6°	

Sails Limitations

Genoas	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	Sail Nr PER 405
File PER405.dxt	Data in meters/kilograms

RIG	
Forestay Tension Aft	Spreaders 2
Inner Stay 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 of set ATH-13-0	

INCLINING TEST AND FREEBOARDS			
Inclining Test Current Inclining			
Flotation date 10/11/2011		SG 1.0260	
FFM 1.513	FF 1.521	SFFP 0.515	
FAM 1.275	FA 1.274	SAFP 11.400	
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	
LCF from stem on CL / on sheer		6.491 / 6.775	
Maximum beam station from stem		7.007	
RM Measured / Default		229.5 / 232.2	
Limit of positive stability / Stab.Index		111.8° / 114.1	
Freeboard at mast at 4.640		1.333	

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

MOVEABLE BALLAST	
N/A	

CENTERBOARD	
N/A	




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SAILS (Maximum Areas)									
Mainsail	HB	MGT	MGU	MGM	MGL	Area	Area (r)	Formula	
	0.175	0.95	1.73	2.96	3.88	37.12	37.82	P/8 · (E + 2·MGL + 2·MGM + 1.5·MGU + MGT + 0.5·HB)	
Jib/Genoa	JH	JGT	JGU	JGM	JGL	JL	LPG		
	0.08	0.86	1.68	3.38	5.11	14.58	6.93	0.1125·JL·(1.445·LPG+2·JGL+2·JGM+1.5·JGU+JGT+0.5·JH)	
Symmetric									
Not Available									
Asymmetric									
	SLU	SLE	ASL	AMG	ASF				
	16.62	14.25	15.44	9.55	9.60	122.97		ASL · (ASF + 4·AMG) / 6	
Code Zero									
Not Available									

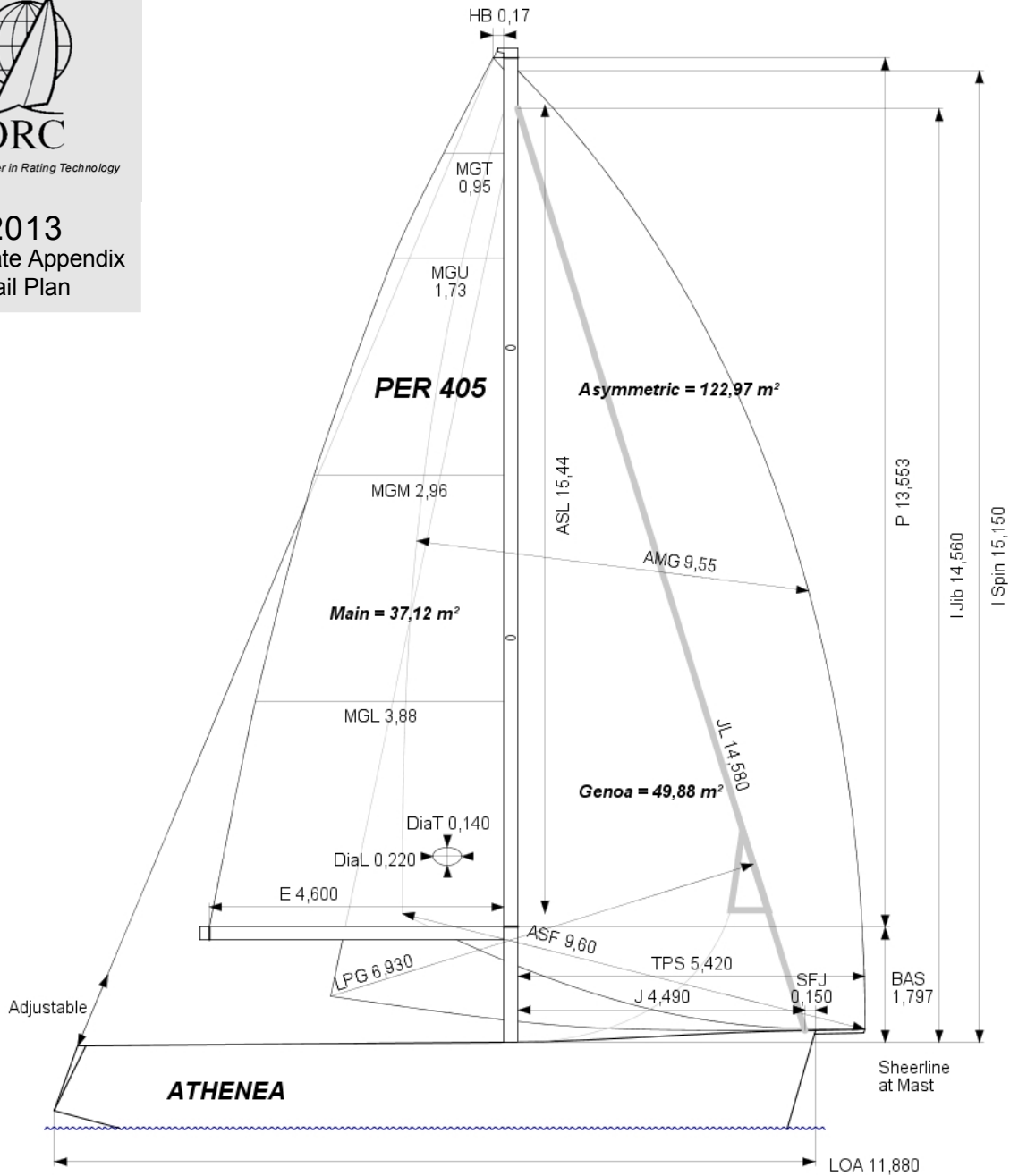
MEASUREMENT INVENTORY				
Measurer G.Liza/L.Yarlaque				
Date 11/11/2011				
Comment ancla ubicada en proa				
Id	Item	Weight	Distance	VCG Description
2	Anchor	13.5	0.69	ancla
2	Chain	4.1	0.69	2 metros de
4	Tools	10.0	5.44	herramientas
Id	Item	Maker	Model	
5	Engine	Volvo Penta	40 HP	
Id	Item	Weight	Description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

MEASUREMENT INVENTORY									
Id	Item	Tank Use	Tank Type	Capcty	Dist.	VCG	Condtm	Description	
6d	Tank	agua	plastico	15.0	9.49			15.0 tanque agua motor	
6c	Tank	petroleo	plastico	160.0	9.44			0.0 tanque petroleo a	
6b	Tank	agua	plastico	200.0	9.44			0.0 tanque agua a popa	
6a	Tank	agua	plastico	160.0	2.19			0.0 tanque agua a proa	
Id	Item	Weight	Distance	VCG	Description				
3c	Battery	20.0	10.24		bateria				
3b	Battery	20.0	10.04		bateria				
3a	Battery	20.0	8.84		bateria				
9h	Misc	15.0	11.44		radar				
9d	Misc	8.0	7.44		motor nevera				
9c	Misc	25.0	7.44		cocina basculante				
9b	Misc	15.0	6.94		nevera a estribor				



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Sail Plan



SAILS INVENTORY

MANSAIL

Id	HB	MGT	MGU	MGM	MGL	Area	Measurer	Meas.Date	Manufacture	Material	Comment
M1	0.175	0.95	1.73	2.96	3.88	37.12	G LIZA/L	02/10/2013	NORTH	Kev lar	remedicion

JIBS / GENOAS

Id	JH	JGT	JGU	JGM	JGL	LPG	JL	Ovrlp	Area	Measurer	Meas.Date	Manufacture	Material	Comment
C1	0.08	0.86	1.68	3.38	5.11	6.93	14.58	154%	49.89	G LIZA/L	10/07/2013	NORTH	Kev lar	NUEVA C1
G2	0.07	0.66	1.27	2.58	3.93	5.37	14.39	120%	37.85	G LIZA/L	04/07/2012	NORTH	Kev lar	NUEVA G2

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
A2	16.62	14.25	15.44	9.55	9.60	122.97	asym	G LIZA	12/10/2013	NORTH	Nylon	NUEVO
S1	16.16	14.82	15.49	9.10	9.47	118.42	asym	G LIZA / L	26/08/2011	NORTH	Nylon	
1	14.60	13.10	13.85	8.10	8.25	93.83	asym	G.Liza/L.Yarlaque			Nylon	