

BOAT
Name ATHENEA Sail Nr PER 405

GPH
677.8

HULL					
Length Overall	11.818 m				
Maximum Beam	3.998 m				
Displacement	8,169 kg				
Draft	1.982 m				
IMS Reg. Division	Cruiser/Racer				
Dynamic Allowance	1.225%				
Fwd Accommodation	Yes				
Hull Construction	Solid				
Carbon Rudder	No				
Trim Tab	No				
IMS L	10.683	VCGD	0.071	VCGM	0.234
Sink	25.56 kg/mm	Wetted Area	34.01 m²		



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GENERAL
Class Dufour 405 GLarge
Designer FELCI
Builder DUFOUR
Series 02/2009
Age 03/2009
Age Allowance 0.065%
Offset File duf405.off - 11/03/2010 12:03:24 a.m.
Measurement by G.Liza/L.Yarlaque - 24/02/2010

SCORING OPTIONS	OFFSHORE			INSHORE		
	COASTAL / LONG DISTANCE			WINDWARD / LEEWARD		
Time On Distance	677.8			772.5		
Time On Time	0.8852			0.8738		
Performance Line	PLT	PLD		PLT	PLD	
	0.674	31.4		0.711	147.4	
Triple Number	Low	Medium	High	Low	Medium	High
	0.8326	1.1371	1.3395	0.6220	0.8801	1.0811

Rating Office

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Asociación de Veleros
Oceánicos del Peru

TIME ALLOWANCES	6 kt	8 kt	10 kt	12 kt	14 kt	16 kt	20 kt
Wind Velocity							
Beat VMG	1293.1	1043.5	912.5	815.4	763.7	737.1	711.3
52°	811.6	667.9	580.2	532.8	500.6	486.5	474.2
60°	744.8	618.6	545.3	504.3	476.5	461.3	450.4
75°	686.8	556.0	494.8	463.0	452.1	440.7	420.1
90°	637.0	529.9	479.0	448.8	430.6	423.3	413.7
110°	660.3	546.3	492.1	459.5	434.6	412.9	384.8
120°	700.6	572.0	509.0	471.0	445.4	424.0	385.8
135°	804.1	647.6	553.0	503.4	471.0	448.1	411.8
150°	971.6	764.1	645.3	561.2	513.1	479.3	436.4
Run VMG	1121.9	882.4	744.8	645.3	572.9	525.3	465.1

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Selected Courses	6 kt	8 kt	10 kt	12 kt	14 kt	16 kt	20 kt
Windward / Leeward	1229.0	978.7	836.6	740.4	677.4	638.7	593.3
Circular Random	964.6	766.5	656.3	589.1	546.0	517.3	481.9
Ocean for PCS	1034.1	803.0	670.3	586.6	530.7	491.5	440.1
Non Spinnaker	1043.0	822.0	697.5	620.8	570.9	537.2	495.4

Crew Weight	
Declared	640 kg
Default*	826 kg
Non Manual Power	No

Special Scoring	
ToD	ToT
Double Handed	676.6 0.8868
Non Spinnaker	721.4 0.8317
N/S Perf. Line	7.4 0.603

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	46.8°	44.7°	44.8°	44.3°	42.8°	42.0°	41.6°
Beat VMG	2.78	3.45	3.95	4.42	4.71	4.88	5.06
52°	4.44	5.39	6.20	6.76	7.19	7.40	7.59
60°	4.83	5.82	6.60	7.14	7.56	7.80	7.99
75°	5.24	6.47	7.28	7.77	7.96	8.17	8.57
90°	5.65	6.79	7.51	8.02	8.36	8.50	8.70
110°	5.45	6.59	7.32	7.84	8.28	8.72	9.36
120°	5.14	6.29	7.07	7.64	8.08	8.49	9.33
135°	4.48	5.56	6.51	7.15	7.64	8.03	8.74
150°	3.71	4.71	5.58	6.42	7.02	7.51	8.25
Run VMG	3.21	4.08	4.83	5.58	6.28	6.85	7.74
Gybe Angles	140.2°	145.7°	152.3°	154.8°	169.7°	176.1°	178.6°

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

RIG	
Forestay Tension Fixed	Spreaders 2
Inner Forestay None Fitted	Runners 0
Carbon Mast No	Jumpers
Taper Hollows No	Jib Furler Yes
Fiber Rigging No	w/o Backstay 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	
Ancla en proa, Herramientas en popa	

INCLINING TEST AND FREEBOARDS			
Inclining Test Current Inclining			
Flotation date 24/02/2010		SG 1.0260	
FFM 1.529	FF 1.529	SFFP 0.533	
FAM 1.207	FA 1.207	SAFP 11.375	
W1 130.00	PD1 539.6	WD 12.350	
W2 130.00	PD2 541.4	GSA 1.0	
W3 130.00	PD3 531.1	RSA 1.0	
W4 130.00	PD4 544.5	PLM 9000.0	
Maximum beam station from stern			7.790
RM Measured / Default			234.5 / 229.2
Limit of positive stability			107.8°
Stability Index			110.3
Freeboard at mast at 4.640			1.329

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	


WATER BALLAST	
N/A	

CENTERBOARD	
N/A	

SAILS (Maximum Areas)									
Mainsail	HB	MGT	MGU	MGM	MGL	MSW	Area	Area (r)	Formula
	0.100	0.79	1.53	2.76	3.74	0.00	35.13	35.58	$P/8 \cdot (E + 2 \cdot MGL + 2 \cdot MGM + 1.5 \cdot MGU + MGT + 0.5 \cdot HB)$
Jib/Genoa	JH	JGT	JGU	JGM	JGL	JL	LPG		
	0.05	0.72	1.43	2.95	4.58	13.96	6.26	42.39	$0.1125 \cdot JL \cdot (1.445 \cdot LPG + 2 \cdot JGL + 2 \cdot JGM + 1.5 \cdot JGU + JGT + 0.5 \cdot JH)$
Asymmetric	SLU	SLE	ASL	AMG	ASF				
	14.60	13.10	13.85	8.10	8.25			93.83	$ASL \cdot (ASF + 4 \cdot AMG) / 6$

MEASUREMENT INVENTORY			
Measurer G.Liza/L.Yarlaque			
Date 24/02/2010			
Comment ancla ubicada en proa			
Id	Item	Weight	Distanc Description
1	Anchor	25.0	2.10 de cadena
Id	Item	Weight	Description

MEASUREMENT INVENTORY			
Id	Item	Weight	Distanc Description




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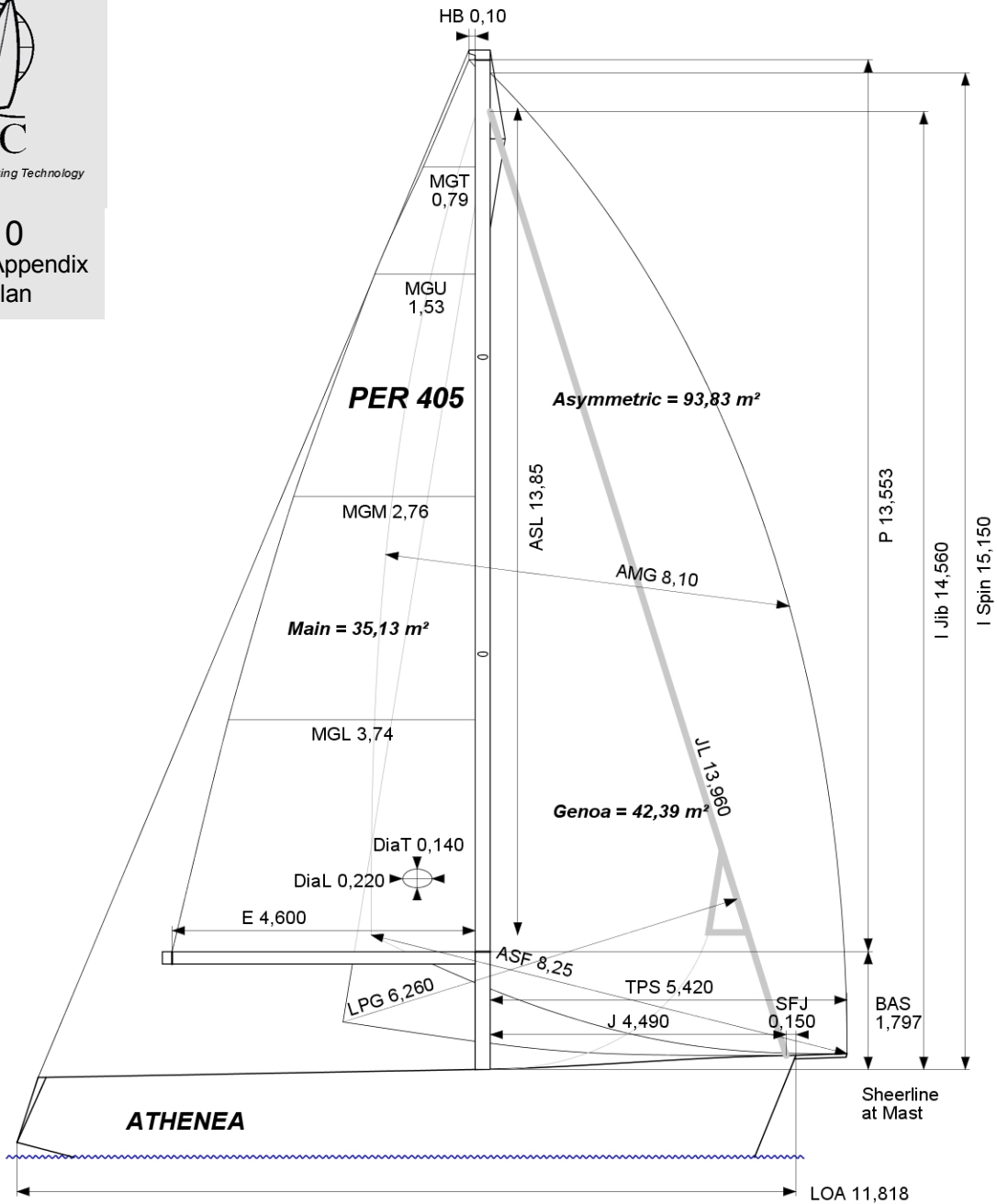
Number **PER130**
ORC Ref **PER00000341**
Issued On **12/07/2010**
VPP Ver. **2010 1.11**
Valid until **31/03/2011**





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Sail Plan



SAILS INVENTORY

MANSAIL

Id	HB	MGT	MGU	MGM	MGL	MSW	Area	Measurer	Meas.Date	Manufacture	Material	Comment
1	0.100	0.79	1.53	2.76	3.74		35.13	G.Liza/L.Yarlaque	24/02/2010		Dacron	

JIBS / GENOAS

Id	JH	JGT	JGU	JGM	JGL	LPG	JL	Overlp	Area	Measurer	Meas.Date	Manufacture	Material	Comment
1	0.05	0.72	1.43	2.95	4.58	6.26	13.96	139%	42.40	G.Liza/L.	24/02/2010		Dacron	

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
1	14.60	13.10	13.85	8.10	8.25	93.83	asym	G.Liza/L.Yarlaque			Nylon	