

BOAT Name ATHENEA Sail Nr PER 405	GPH 636.5	HULL Length Overall 11.880m Maximum Beam 4.012m Displacement 7,869kg Draft 1.971m IMS Reg. Division Cruiser/Racer Dynamic Allowance 0.344% Fwd Accommodation Yes Hull Construction Solid Carbon Rudder No Crew Arm Extension
GENERAL Class Dufour 405 GLarge Designer FELCI Builder DUFOUR Series 02/2009 Age 03/2009 Age Allowance 0.325% Offset File ATH-13-1.off - 22/06/2017 22:16:00 Measurement by P. Gutierrez - 18/06/2017		IMSLS 10.678m VCGD 0.157m Sink 25.03kg/mm RL 8.085m VCGM 0.185m WS 32.61m² LSM0 10.585m Displacement/Length ratio 6.6351



ORC
Offshore Racing Congress
World leader in rating technology

2019
ORC International
Certificate

Rating Office
Asociacion de Veleros
Oceanicos del Peru
Roberto Peschiera - RO
peschiera56@gmail.com



SCORING OPTIONS						
Time on Distance	COASTAL / LONG DISTANCE			WINDWARD / LEEWARD		
	616.4			691.5		
Time on Time	0.9733			0.9761		
Triple Number	Low	Medium	High	Low	Medium	High
Time on Distance	751.3	558.8	485.9	982.0	699.8	586.7
Time on Time	0.8984	1.2080	1.3893	0.6874	0.9646	1.1505

TIME ALLOWANCES							
Wind Velocity	6 kt	8 kt	10 kt	12 kt	14 kt	16 kt	20 kt
Beat VMG	1141.6	935.0	820.1	742.6	702.6	686.9	681.2
52°	728.3	609.0	538.2	498.3	480.4	474.0	470.7
60°	677.5	572.7	512.4	482.6	467.3	460.0	455.8
75°	639.9	544.3	494.5	470.8	455.4	443.7	432.1
90°	645.9	544.8	491.5	463.2	451.2	437.6	413.3
110°	660.2	540.0	481.0	454.0	433.0	414.5	394.5
120°	677.9	552.7	487.3	457.8	436.0	414.6	378.6
135°	748.0	604.1	517.4	474.6	450.9	429.8	390.2
150°	898.5	704.9	588.8	515.7	475.9	453.4	414.6
Run VMG	1037.6	813.9	679.9	591.1	534.4	491.1	445.1

Certificate
Number **PER130**
ORC Ref **PER00000087**
Issued On **24/05/2019**
VPP Ver. **2019 1.01**
Valid until **31/03/2020**

Crew Weight
Default **747kg**
Maximum **670kg**
Minimum* **503kg**
**when applied by the NoR and SI*
Non Manual Pwr **No**

Special Scoring
ToD ToT
Non Spin GPH **666.3 0.9005**
Non Spin OSN **644.5 0.9309**

Selected Courses							
Windward / Leeward	1089.6	874.4	750.0	666.9	618.5	589.0	563.2
Circular Random	895.2	715.3	616.5	557.6	520.8	497.1	469.7
Coastal / Long Distance	1084.4	818.3	669.7	576.2	528.3	495.1	445.3
Non Spinnaker	947.7	752.8	644.8	579.7	538.9	512.5	482.1

Sails Limitations
Headsails **5** Spinnakers **3**

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	44.7°	43.4°	42.9°	42.7°	41.7°	41.0°	41.1°
Beat VMG	3.15	3.85	4.39	4.85	5.12	5.24	5.28
52°	4.94	5.91	6.69	7.22	7.49	7.59	7.65
60°	5.31	6.29	7.03	7.46	7.70	7.83	7.90
75°	5.63	6.61	7.28	7.65	7.90	8.11	8.33
90°	5.57	6.61	7.32	7.77	7.98	8.23	8.71
110°	5.45	6.67	7.48	7.93	8.31	8.68	9.13
120°	5.31	6.51	7.39	7.86	8.26	8.68	9.51
135°	4.81	5.96	6.96	7.59	7.98	8.38	9.23
150°	4.01	5.11	6.11	6.98	7.56	7.94	8.68
Run VMG	3.47	4.42	5.29	6.09	6.74	7.33	8.09
Gybe Angles	145.6°	149.5°	149.4°	153.9°	162.8°	180.0°	180.0°

Class Division Length
CDL = **9.382**

Storm Sails Areas
Heavy Weather Jib **28.87**
Storm Jib (JL=9.51) **10.70**
Storm Trysail **10.88**

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 off	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 No
Fiber Rigging No	Main Furler No
Lenticular Rigging No	Without Backstay No
Articulated Bowsprit No	
P 13.510	E 4.600 MDT1 0.136 MW 0.223
IG 14.557	J 4.500 MDL1 0.223 GO 0.243
ISP 14.567	SFJ 0.150 MDT2 0.136 BD 0.195
BAS 1.797	SPL 4.700 MDL2 0.223 MWT 180.00
FSP 0.090	TPS TL 0.000 MCG 5.280

INCLINING TEST AND FREEBOARDS			
Inclining Test Current Inclining			
Flotation date 18/06/2017		SG 1.0253	
FFM 1.528	FF 1.525	SFFP 0.515	
FAM 1.275	FA 1.280	SAFP 11.400	
W1 135.0	PD1 554.9	WD 11.840	
W2 135.0	PD2 552.0	GSA 1.0	
W3 135.0	PD3 559.6	RSA 1.0	
W4 135.0	PD4 551.6	PLM 9000.0	
LCF from stem on CL / on sheer		6.491 / 6.776	
Maximum beam station from stem		7.007	
RM Measured		227.0kg-m	
RM Default		228.6kg-m	
Limit of positive stability / Stab.Index		113.1° / 115.0	
Freeboard at mast at 4.650		1.358	



ORC
Offshore Racing Congress
World leader in rating technology


2019
IMS Measurement
Certificate

MIZZEN RIG AND SAILS	
N/A	

PROPELLER			
Installation Strut	PRD 0.426		
Type Folding 2 blades	PBW 0.098		
Twin Screw No	PIPA 0.0039		
ST1 0.065	ST3 0.178	ST5 0.315	
ST2 0.178	ST4 0.111	EDL 2.935	

Certificate

Number **PER130**
ORC Ref **PER00000087**
Issued On **24/05/2019**
VPP Ver. **2019 1.01**
Valid until **31/03/2020**



COMMENTS	
med completa lastre interno 40 kg.	

MOVABLE BALLAST	
N/A	

CENTERBOARD	
N/A	

SAILS (Maximum Areas)									
Mainsail	MHB	MUW	MTW	MHW	MQW	Area	Area (r)	Formula	
	0.170	0.95	1.72	2.95	3.86	36.87	37.56	P/8 · (E + 2·MQW + 2·MHW + 1.5·MTW + MUW + 0.5·MHB)	
Symmetric	SLU	SLE	SL	SHW	SFL				
	15.42	15.42	15.42	8.31	8.32	106.81		SL · (SFL + 4·SHW) / 6	
Asymmetric									
Not Available									

HEADSAILS												
Area = 0.1125·HLU · (1.445·HLP + 2·HQW + 2·HHW + 1.5·HTW + HUW + 0.5·HHB)												
HHB	HUW	HTW	HHW	HQW	HLP	HLU	Area	Btn	Fly	Meas.Date	Material	Comment
0.08	0.85	1.68	3.32	4.99	6.75	14.52	48.65			24/05/2019	Kevlar	remedicion
0.09	0.83	1.62	3.25	4.95	6.62	14.30	47.09			24/05/2019	Kevlar	remedicion
0.09	0.79	1.56	3.17	4.84	6.65	14.31	46.37			11/04/2019	Kevlar	remedicion
0.07	0.66	1.27	2.58	3.93	5.37	14.39	37.85			04/07/2012	Kevlar	

MEASUREMENT INVENTORY				
Measurer P. Gutierrez PG				
Date 18/06/2017				
Comment				
Id	Item	Weight	Distance	VCG Description
Id	Item	Maker	Model	
3A	Engine	Volvo Penta	40 HP	
Id	Item	Weight Description		

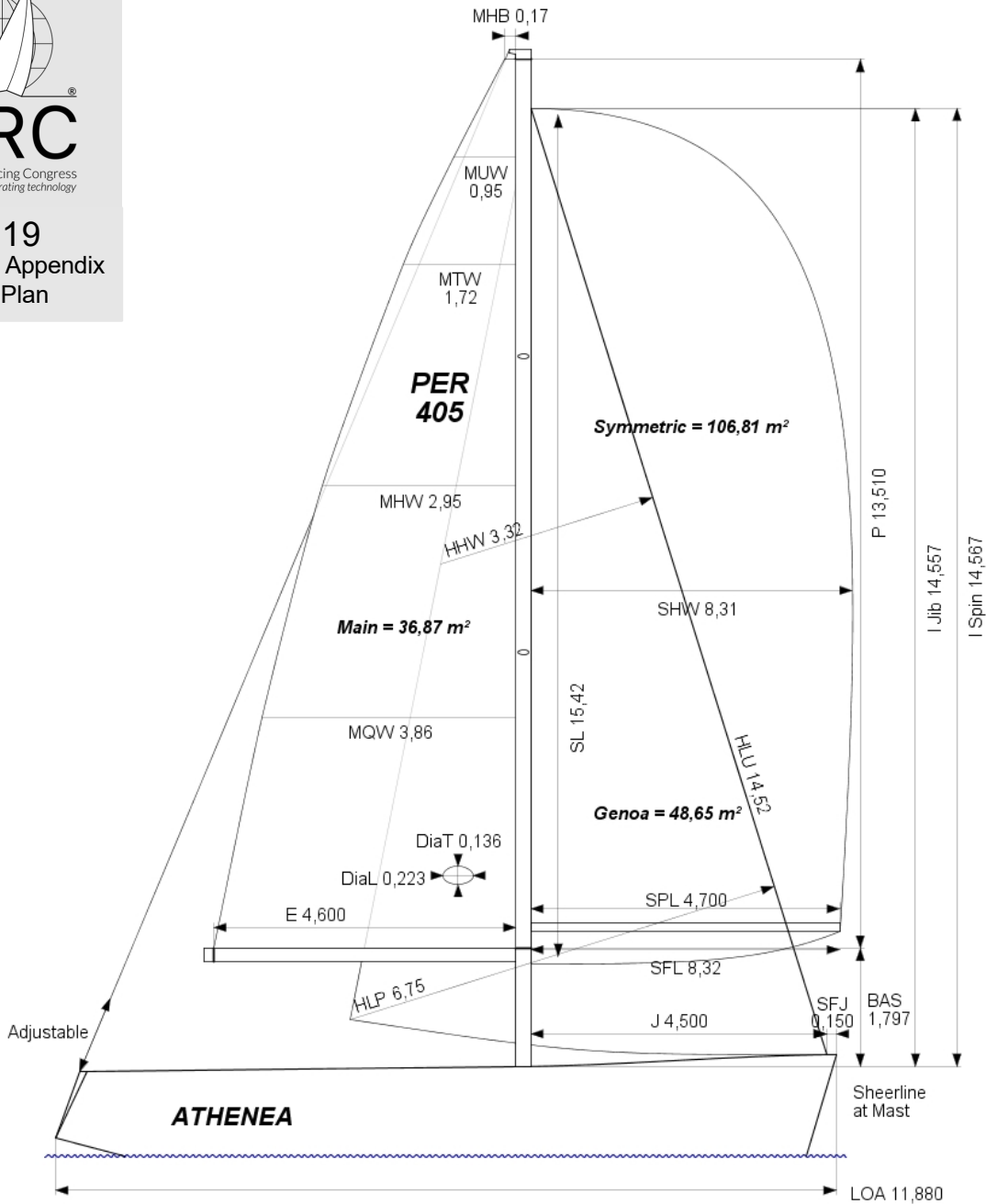
MEASUREMENT INVENTORY									
Id	Item	Tank Use	Tank Type	Capcty	Dist.	VCG	Condtn	Description	
C10	Tank	agua	PVC	240.0	1.68	0.45	0-0	A PROA EN CRUJIA	
B5	Tank	aguas negras	PVC	50.0	7.60	0.65	0-0	Tanque dentro del	
E3	Tank	petroleo	PVC	180.0	9.11	0.23	45-0	tanque petroleo a	
B3	Tank	agua	PVC	160.0	9.11	0.23	0-0	tanque agua a popa	
Id	Item	Weight	Distance	VCG Description					
C1	Ballast	40.0	11.60	0.10 A POPA EN CRUJIA					
C5	Battery	12.0	8.74	0.89 01 BATERIA DE 12 PLACAS					
C4	Battery	24.0	10.03	0.39 02 BATERIA DE 12 PLACAS					
E2	Misc	5.0	11.14	1.44 BALON DE GAS A POPA BABOR					
B2	Misc	10.0	6.69	0.50 CONGELADOR					
E5	Misc	10.0	7.23	0.63 COCINA BASCULANTE A ESTRIBOR					
C12	Misc	10.0	0.50	1.50 Malacate en Proa					



ORC

Offshore Racing Congress
World leader in rating technology

2019
Certificate Appendix
Sail Plan



SAILS INVENTORY

MAINSAIL (1)																
Id	MHB	MUW	MTW	MHW	MQW	Area	Measurer	Meas.Date	Manufacture	Material	Comment					
M-1	0.17	0.95	1.72	2.95	3.86	36.88	G LIZA	11/04/2019	NORTH	Kevlar	remedicion					
HEADSAILS (4)																
Id	HHB	HUW	HTW	HHW	HQW	HLP	HLU	Ovrlp	Area	Btn	Fly	Measurer	Meas.Date	Manufacture	Material	Comment
L-1	0.08	0.85	1.68	3.32	4.99	6.75	14.52	150%	48.65			G LIZA	24/05/2019	NORTH	Kevlar	remedicion
LM1	0.09	0.83	1.62	3.25	4.95	6.62	14.30	147%	47.09			G LIZA	24/05/2019	NORTH	Kevlar	remedicion
MH1	0.09	0.79	1.56	3.17	4.84	6.65	14.31	148%	46.37			G LIZA	11/04/2019	NORTH	Kevlar	remedicion
G2	0.07	0.66	1.27	2.58	3.93	5.37	14.39	119%	37.85			G LIZA/L	04/07/2012	NORTH	Kevlar	
SYMMETRIC SPINNAKERS (2)																
Id	SLU	SLE	SL	SHW	SFL	Area	Measurer	Meas.Date	Manufacture	Material	Comment					
S1.5	15.44	15.40	15.42	8.31	8.32	106.81	G LIZA	23/06/2016	NORTH	Nylon	REMEDICION					
S2	14.98	14.98	14.98	8.47	8.37	105.49	G LIZA	23/06/2016	NORTH	Nylon	remedicion					
ASYMMETRIC SPINNAKERS (0)																
Id	SLU	SLE	SL	SHW	SFL	Area	Kind	Measurer	Meas.Date	Manufacture	Material	Comment				