

BOAT Name LIV Sail Nr DEN-21	GPH 690,0	HULL Length Overall 10,572m Maximum Beam 2,930m Displacement 5.425kg Draft 1,837m IMS Reg. Division Cruiser/Racer Dynamic Allowance 0,406% Fwd Accommodation Yes Hull Construction Cored Carbon Rudder No Crew Arm Extension
GENERAL Class ATHENA 34 Designer SOEDERGREN Builder Finnulf Yachts Series 01/1982 Age 01/1982 Age Allowance 0,487% Offset File ATHENA34.OFF - 30/11/1989 11:07:38 Measurement by JJBELTRAN - 10/10/2010		IMSL 8,524m VCGD -0,081m Sink 15,49kg/mm RL 6,715m VCGM -0,072m WS 22,16m² LSM0 8,663m Displacement/Length ratio 8,3444



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2018
ORC International
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SCORING OPTIONS									
	COASTAL / LONG DISTANCE			WINDWARD / LEEWARD					
Time on Distance	671,3			747,9					
Time on Time	0,8937 (ToT = 600 / ToD)			0,9026 (ToT = 675 / ToD)					
Triple Number	Low	Medium	High	Low	Medium	High			
Time on Distance	785,8	611,5	553,6	1011,7	751,4	658,3			
Time on Time	0,8590	1,1038	1,2194 (ToT = 675 / ToD)	0,6672	0,8983	1,0254 (ToT = 675 / ToD)			

TIME ALLOWANCES								
Wind Velocity	6 kt	8 kt	10 kt	12 kt	14 kt	16 kt	20 kt	
Beat VMG	1143,0	956,6	860,6	814,8	795,7	786,7	783,0	
52°	759,1	643,8	584,0	560,8	552,0	547,6	546,5	
60°	724,1	614,7	565,2	545,8	536,5	532,1	529,2	
75°	698,8	595,1	552,0	533,0	521,1	512,7	505,6	
90°	698,5	585,4	542,8	523,7	515,5	503,1	483,9	
110°	689,8	575,0	533,5	511,6	496,7	480,2	461,6	
120°	711,5	588,1	538,4	513,6	492,1	472,5	447,2	
135°	790,8	648,2	561,4	528,7	506,1	483,5	443,2	
150°	940,1	746,2	626,7	557,7	528,4	507,2	465,1	
Run VMG	1085,6	861,7	723,7	630,6	570,1	536,2	494,3	

Certificate
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Issued On **04/01/2018**
VPP Ver. **2018 1.00**
Valid until **31/12/2018**

Crew Weight
Default 561kg
Maximum **400kg**
Minimum* **300kg**
**when applied by the NoR and SI*
Non Manual Pwr **No**

Special Scoring

	ToD	ToT
Double H.GPH	696,1	0,8620
Double H.OSN	679,1	0,8835
Non Spin GPH	722,2	0,8308
Non Spin OSN	699,8	0,8574

Selected Courses								
Windward / Leeward	1114,3	909,1	792,1	722,7	682,9	661,4	638,7	
Circular Random	944,9	764,8	669,4	615,2	583,0	563,0	539,2	
Coastal / Long Distance	1111,4	854,0	714,0	634,0	593,9	563,4	515,1	
Non Spinnaker	1002,0	805,6	699,9	638,8	602,0	578,7	551,2	

Sails Limitations

Headsails	Spinnakers
1	3

Dacron Sails

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	42,2°	40,3°	40,6°	40,7°	40,3°	40,1°	40,1°	
Beat VMG	3,15	3,76	4,18	4,42	4,52	4,58	4,60	
52°	4,74	5,59	6,16	6,42	6,52	6,57	6,59	
60°	4,97	5,86	6,37	6,60	6,71	6,77	6,80	
75°	5,15	6,05	6,52	6,75	6,91	7,02	7,12	
90°	5,15	6,15	6,63	6,87	6,98	7,16	7,44	
110°	5,22	6,26	6,75	7,04	7,25	7,50	7,80	
120°	5,06	6,12	6,69	7,01	7,32	7,62	8,05	
135°	4,55	5,55	6,41	6,81	7,11	7,45	8,12	
150°	3,83	4,82	5,74	6,46	6,81	7,10	7,74	
Run VMG	3,32	4,18	4,97	5,71	6,31	6,71	7,28	
Gybe Angles	147,0°	151,8°	149,9°	159,8°	180,0°	180,0°	180,0°	

Class Division Length
CDL = **7,620**

Storm Sails Areas

Heavy Weather Jib	19,54
Storm Jib (JL=7,82)	7,24
Storm Trysail	9,63

Owner

BOAT	
Name LIV File DEN21	Sail Nr DEN-21 Data in meters/kilograms

INCLINING TEST AND FREEBOARDS			
Inclining Test Current Inclining		Flotation date 27/11/2017 SG 1,0270	
FFM 1,062	FF 1,075	SFFP 0,440	
FAM 0,898	FA 0,891	SAFP 9,375	
W1 50,0	PD1 489,7	WD 9,680	
W2 50,0	PD2 489,7	GSA 1,0	
W3 50,0	PD3 487,9	RSA 1,0	
W4 50,0	PD4 490,6	PLM 9000,0	
LCF from stem on CL / on sheer		5,990 / 6,160	
Maximum beam station from stem		5,947	
RM Measured		77,9kg·m	
RM Default		71,4kg·m	
Limit of positive stability / Stab.Index		121,4° / 127,2	
Freeboard at mast at 3,913		0,952	



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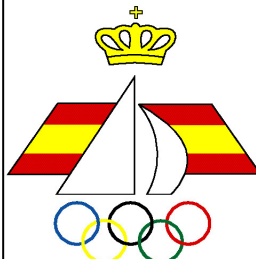
2018

IMS Measurement Certificate

RIG			
Forestay Tension Aft	Spreaders 2		
Inner Stay None Fitted	Runners 1		
Carbon Mast No	Jumper Struts Yes		
Taper Hollows No	Jib Furler Yes		
Fiber Rigging No	Main Furler No		
Lenticular Rigging No	Without Backstay No		
Articulated Bowsprit No			
P 13,050	E 4,215	MDT1 0,106	MW 0,151
IG 12,031	J 3,913	MDL1 0,151	GO 0,151
ISP 12,000	SFJ	MDT2 0,106	BD 0,132
BAS 1,671	SPL 3,880	MDL2 0,100	MWT
FSP 0,080	TPS 4,000	TL 2,000	MCG

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MIZZEN RIG AND SAILS	
N/A	

PROPELLER	
Installation Strut	PRD 0,425
Type Folding 2 blades	PBW 0,105
Twin Screw No	PIPA 0,0033
ST1 0,043	ST3 0,178
ST2 0,178	ST4 0,112
	ST5 0,300
	EDL 0,642

COMMENTS

MOVABLE BALLAST	
N/A	

CENTERBOARD	
N/A	

SAILS (Maximum Areas)						
Mainsail	MHB	MUW	MTW	MHW	MQW	Area Area (r) Formula
	0,130	0,78	1,42	2,50	3,39	30,94 31,31 P/8 · (E + 2·MQW+ 2·MHW + 1.5·MTW + MUW + 0.5·MHB)
Symmetric	SLU	SLE	SL	SHW	SFL	
	12,00	12,00	12,00	8,32	7,14	80,84 SL · (SFL + 4·SHW) / 6
Asymmetric	SLU	SLE	SL	SHW	SFL	
	11,42	10,49	10,96	5,64	6,76	53,53 56,30 AS · (SFL + 4·SHW) / 6

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
0,12	0,72	1,34	2,62	3,99	5,40	11,34	30,38			27/11/2017	Dacron	ROLLER

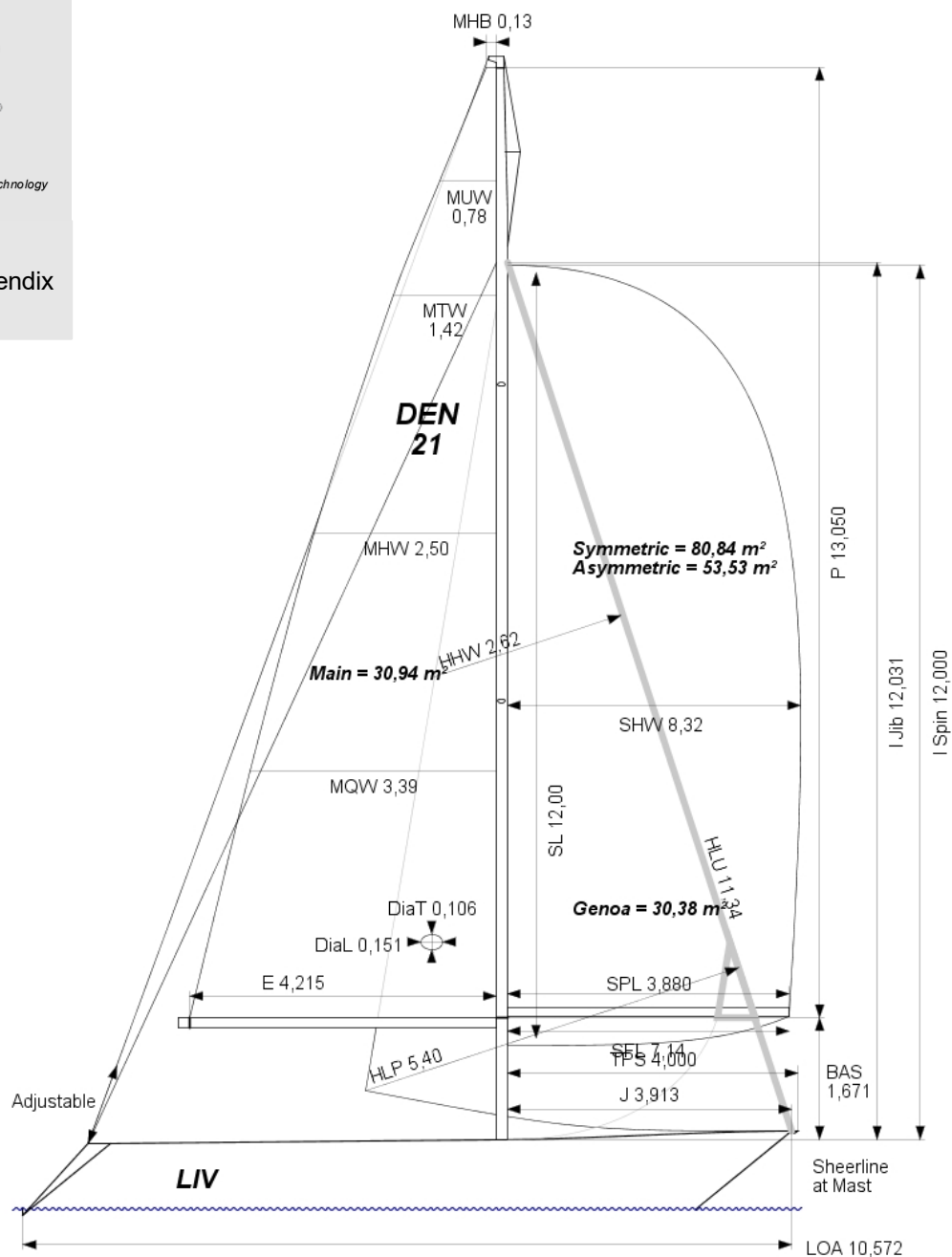
MEASUREMENT INVENTORY				
Measurer JUANJO PERELLO				
Date 27/11/2017				
Comment				
Id	Item	Weight	Distance	VCG Description
Id	Item	Weight Description		

MEASUREMENT INVENTORY								
Id	Item	Tank Use	Tank Type	Capcty	Dist.	VCG	Condtn	Description
001	Tank	GASOIL	PVC				25,0	
Id	Item	Weight	Distance	VCG Description				



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Sail Plan



SAILS INVENTORY

MAINSAIL (1)

Id	MHB	MUW	MTW	MHW	MQW	Area	Measurer	Meas.Date	Manufacture	Material	Comment
1	0,130	0,78	1,42	2,50	3,39	30,94	FRANCISCO GIL	27/11/2017		Dacron	FULL BATTEN

HEADSAILS (1)

Id	HHB	HUW	HTW	HHW	HQW	HLP	HLU	Ovrlp	Area	Btn	Fly	Measurer	Meas.Date	Manufacture	Material	Comment
ROLLER	0,12	0,72	1,34	2,62	3,99	5,40	11,34	138%	30,38			FRAGIL	27/11/2017		Dacron	ROLLER

SYMMETRIC SPINNAKERS (1)

Id	SLU	SLE	SL	SHW	SFL	Area	Measurer	Meas.Date	Manufacture	Material	Comment
1	12,00	12,00	12,00	8,32	7,14	80,84	FRAGIL	27/11/2017		Nylon	

ASYMMETRIC SPINNAKERS (1)

Id	SLU	SLE	SL	SHW	SFL	Area	Kind	Measurer	Meas.Date	Manufacture	Material	Comment
1	11,42	10,49	10,96	5,64	6,76	53,53	asym	FRAGIL	27/11/2017		Unknown	ROLLER