

BOAT
Name BERTA
Sail Nr EST 619

GPH
615,1

HULL
Length Overall 11,347 m
Maximum Beam 3,631 m
Displacement 7 827 kg
Draft 2,328 m
IMS Reg. Division Cruiser/Racer
Dynamic Allowance 0,652%
Fwd Accommodation Yes
Hull Construction Solid
Carbon Rudder No
Trim Tab No
IMS L 11,014 VCGD 0,361 VCGM 0,132
Sink 22,75 kg/mm Wetted Area 30,46 m²



2009
ORC International
Certificate

GENERAL
Class Elan 380
Designer Humphreys
Builder Elan
Series 04.2008
Age 07.2009
Age Allowance 0,065%
Offset File ELAN380.OFF - 29.03.2009 20:48:48
Measurement by V.Rosme - 09.07.2009

SCORING OPTIONS		
	OFFSHORE	INSHORE
	COASTAL / LONG DISTANCE	WINDWARD / LEEWARD
Time On Distance	615,1	687,2
Time On Time	0,9754	0,9822
Performance Line	PLT 0,844 PLD 97,5	PLT 0,957 PLD 254,2
Triple Number	Low 0,9431 Medium 1,2467 High 1,4064	Low 0,7102 Medium 0,9976 High 1,1751

Rating Office
Estonian Yachting Union
Veiko Rosme
Regati 1, 11911, Tallinn
Estonia

TIME ALLOWANCES							
Wind Velocity	6 kt	8 kt	10 kt	12 kt	14 kt	16 kt	20 kt
Beat VMG	1077,1	866,9	754,3	705,7	678,5	661,9	647,0
52°	692,4	566,6	514,3	488,3	474,4	467,0	460,8
60°	645,5	539,3	496,5	468,4	458,5	453,6	448,8
75°	609,8	509,9	466,6	455,1	444,9	437,0	429,4
90°	565,2	491,9	455,9	443,0	436,3	429,9	411,5
110°	586,9	507,9	466,0	446,0	428,3	409,8	392,4
120°	632,6	527,7	482,2	454,0	437,8	417,3	382,8
135°	746,6	593,2	519,1	479,2	454,2	438,9	400,3
150°	903,8	705,0	587,9	521,4	483,4	456,9	424,7
Run VMG	1043,6	814,0	678,8	591,1	534,2	496,6	449,7

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Crew Weight
Declared 540 kg
Default* 733 kg

Special Scoring
ToD ToT
Double 617,0 0,9725
Non Spinnaker 662,2 0,9061

Selected Courses							
Windward / Leeward	1078,2	853,0	728,4	657,1	613,8	585,8	553,6
Circular Random	857,0	687,3	595,9	542,9	510,6	489,6	463,5
Ocean for PCS	917,9	720,0	609,9	543,5	500,8	471,1	429,7
Non Spinnaker	946,3	748,8	640,1	575,6	535,4	509,5	478,2

Sails Limitations
Genoas 3 Jibs 2 Spinnakers 3
Spinnaker configuration Asymmetric-Pole

Storm Sails Areas
Heavy Weather Jib 31,84
Storm Jib (JL=9,98) 11,79
Storm Trysail 12,69

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	44,0°	42,9°	41,0°	39,0°	37,5°	36,6°	35,8°
Beat VMG	3,34	4,15	4,77	5,10	5,31	5,44	5,56
52°	5,20	6,35	7,00	7,37	7,59	7,71	7,81
60°	5,58	6,68	7,25	7,69	7,85	7,94	8,02
75°	5,90	7,06	7,72	7,91	8,09	8,24	8,38
90°	6,37	7,32	7,90	8,13	8,25	8,37	8,75
110°	6,13	7,09	7,73	8,07	8,40	8,79	9,17
120°	5,69	6,82	7,47	7,93	8,22	8,63	9,40
135°	4,82	6,07	6,94	7,51	7,93	8,20	8,99
150°	3,98	5,11	6,12	6,90	7,45	7,88	8,48
Run VMG	3,45	4,42	5,30	6,09	6,74	7,25	8,01
Gybe Angles	140,8°	145,5°	150,1°	160,2°	169,7°	172,3°	177,3°

Owner
Eskaader OÜ
Lemmiku 81, Tallinn
Estonia
ESS Kalev JK
I certify that I understand my responsibilities under ORC Rules and Regulations
Signature

BOAT	
Name BERTA	Sail Nr EST 619
File Est0619.dxt	Data in meters/kilograms

INCLINING TEST AND FREEBOARDS		
Inclining Test Current Inclining		
Flotation date 06.07.2009		SG 1,0020
FFM 1,322	FF 1,333	SFFP 0,522
FAM 1,069	FA 1,075	SAFP 10,963
W1 84,400	PD1 540,1	WD 12,125
W2 84,400	PD2 544,1	GSA 1,0
W3 84,400	PD3 544,3	RSA 1,0
W4 84,400	PD4 545,3	PLM 9000,
Maximum beam station from stem		7,666
RM Measured / Default		148,3 / 156,6
Limit of positive stability		112,4°
Stability Index		117,8
Freeboard at mast at 4,240		1,174



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RIG			
Forestay Tension Aft	Spreaders 2		
Inner Forestay None Fitted	Runners 0		
Carbon Mast No	Jumpers None		
Taper Hollows No	w/o Backstay No		
P 14,620	E 4,960	MDT1 0,118	TL 2,750
IG 15,265	J 4,160	MDL1 0,230	MWT 193,60
ISP 15,950	SFJ 0,080	MDT2 0,116	MCG 5,350
SPS	SPL 4,360	MDL2 0,160	CPW
BAS 1,640	TPS	MW 0,208	BD 0,170
BAL	FSP 0,070	GO 0,233	BWT 33,00

HEAVY ITEMS			
Bow Thruster No	Generator No	Air Condition No	
Windlass No	Jib Furler No	Desalinator No	
Heavy Deck No	Main Furler No		
Headliners No	Water Heater No		
Anchor Weight 20,0	Heavy Items Adjustment	0,0010	
Anchor LCG 0,80	Total Gyradius Adjustment	0,0434	

PROPELLER		
Installation Strut Drive	PRD 0,410	
Type Folding	PBW 0,120	
Twin Screw No	PIPA 0,0028	
ST1 0,050	ST3 0,180	ST5
ST2 0,180	ST4 0,112	EDL 2,860

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MIZZEN RIG AND SAILS	
N/A	

WATER BALLAST	
N/A	

COMMENTS	
N/A	

CENTERBOARD	
N/A	

SAILS (Maximum Areas)									
Mainsail	HB	MGT	MGU	MGM	MGL	MSW	Area	Formula	
	0,150	0,93	1,68	3,02	4,05	25,00	41,35	P/8 · (E + 2·MGL + 2·MGM + 1.5·MGU + MGT + 0.5·HB)	
Jib/Genoa	JH	JGT	JGU	JGM	JGL	JL	LPG	Formula	
	0,07	0,67	1,29	2,54	3,86	14,81	5,23	0.1125·JL·(1.445·LPG+2·JGL+2·JGM+1.5·JGU+JGT+0.5·JH)	
Symmetric	SL	SMG	SF	Area (r)			Formula		
	0,00	0,00	0,00	0,00	40,97	SL · (SF + 4·SMG) / 6			
Asymmetric	SLU	SLE	ASL	AMG	ASF	Area (r)		Formula	
	14,86	14,80	14,83	7,72	7,39	94,59	ASL · (ASF + 4·AMG) / 6		

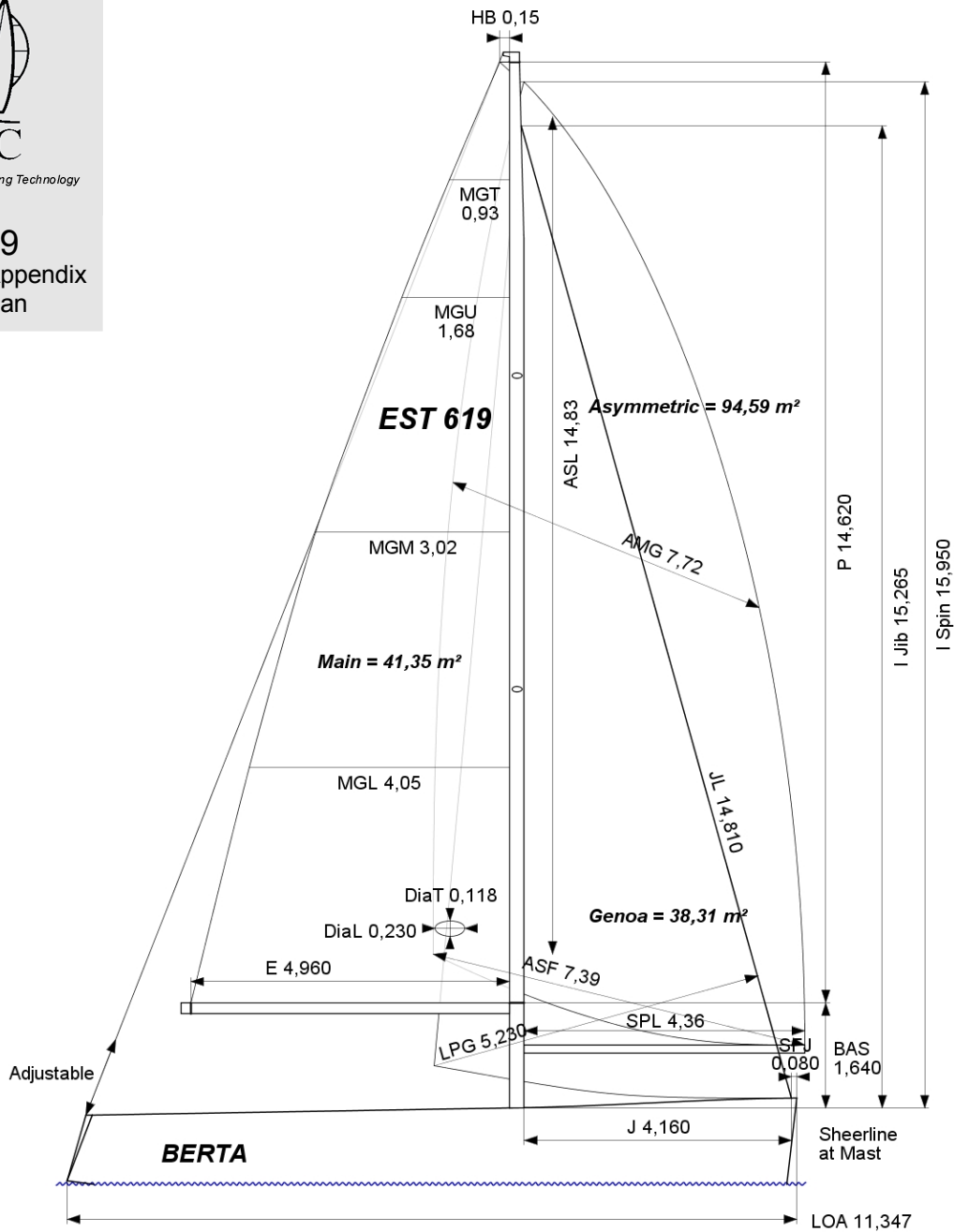
MEASUREMENT INVENTORY			
Measurer Rosme			
Date 6.07.2009			
Comment			
Id	Item	Weight	Distanc Description
1	Anchor	20,0	0,80 Anchor in
2	Anchor	15,0	9,20 Anchor stb.
1	Tools	6,5	6,90 Toolbox portside
Id	Item	Maker	Model
1	Engine	Volvo Penta	D1-30B
Id	Item	Weight	Description

MEASUREMENT INVENTORY						
Id	Item	Tank Use	Tank Type	Capct	Dist.	Condt Description
1	Liquid Tank	Water	PVC	118,0	4,90	0,0 portside
2	Liquid Tank	Water	PVC	133,0	4,70	0,0 starboard
3	Liquid Tank	Fuel	Inox	100,0	8,60	0,0 centre
4	Liquid Tank	Waste	PVC	88,0	2,80	0,0 portside
Id	Item	Weight	Distanc	Description		
1	Battery	5,80	3 x 90	Ah stbd.		
1	Miscellaneous	5,80	Water heater	Isotemp Basic		
2	Miscellaneous	10,50	Webasto AirTop	5500 starboard		



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Certificate Appendix
Sail Plan



SAILS INVENTORY														
MAINSAIL														
Id	HB	MGT	MGU	MGM	MGL	MSW	Area	Measur	Meas.Dat	Manufactur	Material	Comment		
1	0,150	0,93	1,68	3,02	4,05	25,00	41,35	VR	09.07.2009	WB	Dacron			
JIBS / GENOAS														
Id	JH	JGT	JGU	JGM	JGL	LPG	JL	Ovrlp	Area	Measur	Meas.Dat	Manufactur	Material	Comment
1	0,07	0,67	1,29	2,54	3,86	5,23	14,81	126%	38,32	VR	09.07.2009	WB	Dacron	
1	0,07	0,63	1,23	2,49	3,86	5,30	14,80	127%	38,08			WB	Kevlar	
SYMMETRIC SPINNAKERS														
Id	SL	SMG	SF	Area	Measur	Meas.Dat	Manufactur	Material	Comment					
ASYMMETRIC SPINNAKERS														
Id	SLU	SLE	ASL	AMG	ASF	Area	Kind	Measur	Meas.Dat	Manufactur	Material	Comment		
1	14,86	14,80	14,83	7,72	7,39	94,59	asym	VR	09.07.2009	WB	Dacron	Adjustable leech lines		