

BOAT Name VARUNA X PRESS Sail Nr GER 5223	GPH 637.0	HULL Length Overall 10.045m Maximum Beam 3.306m Displacement 4,124kg Draft 2.152m IMS Reg. Division Cruiser/Racer Dynamic Allowance 0.155% Fwd Accommodation Yes Hull Construction Cored Carbon Rudder No Crew Arm Extension 0.00
GENERAL Class X-332 SPORT Designer JEPPESEN Builder X-YACHTS Series 10/1994 Age 04/2002 Age Allowance 0.487% Offset File G5223.OFF - 16/04/2018 10:41:06 Measurement by - 20/03/2009		IMSL 9.088m VCGD 0.048m Sink 16.55kg/mm RL 8.483m VCGM 0.079m WS 21.63m² LSM0 9.061m Displacement/Length ratio 5.5436



2019
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SCORING OPTIONS						
	COASTAL / LONG DISTANCE			WINDWARD / LEEWARD		
	Low	Medium	High	Low	Medium	High
Time on Distance	618.9			688.5		
Time on Time	0.9694			0.9804		
Triple Number	Low	Medium	High	Low	Medium	High
Time on Distance	727.4	564.8	505.2	936.8	690.3	602.4
Time on Time	0.9279	1.1952	1.3360	0.7205	0.9778	1.1206

TIME ALLOWANCES							
Wind Velocity	6 kt	8 kt	10 kt	12 kt	14 kt	16 kt	20 kt
Beat VMG	1049.0	871.7	768.6	725.0	711.9	707.5	696.3
52°	692.5	587.1	537.0	518.2	511.8	508.9	503.0
60°	657.0	564.0	524.3	506.5	498.3	494.6	489.9
75°	631.9	548.1	514.9	495.1	480.5	471.1	464.5
90°	641.1	543.3	505.3	483.9	472.8	456.9	435.2
110°	646.9	541.8	502.2	475.1	450.7	430.1	408.0
120°	669.7	555.0	508.8	480.8	453.8	429.0	390.4
135°	744.5	607.1	534.3	501.0	474.7	448.1	397.6
150°	881.9	700.3	593.8	532.0	501.2	476.7	428.1
Run VMG	1018.3	808.7	683.9	602.3	544.2	509.7	461.6

Certificate

Number **140192**
ORC Ref **GER20040845**
Issued On **13/05/2019**
VPP Ver. **2019 1.01**
Valid until **01/01/2020**

Crew Weight

Default **598kg**
Maximum **610kg**
Minimum* **458kg**
**when applied by the NoR and SI*
Non Manual Pwr **No**

Special Scoring

	ToD	ToT
Double H.GPH	647.7	0.9263
Double H.OSN	631.8	0.9497
Non Spin GPH	667.1	0.8994
Non Spin OSN	646.2	0.9285

Selected Courses							
Windward / Leeward	1033.6	840.2	726.3	663.6	628.0	608.6	579.0
Circular Random	874.1	707.1	618.1	566.8	535.4	514.6	486.6
Coastal / Long Distance	1032.1	790.3	657.7	584.1	546.9	517.2	465.7
Non Spinnaker	928.0	745.1	646.4	589.0	553.8	530.9	501.2

Sails Limitations

Headsails	Spinnakers
5	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	42.0°	40.4°	39.5°	37.8°	37.3°	37.2°	37.6°
Beat VMG	3.43	4.13	4.68	4.97	5.06	5.09	5.17
52°	5.20	6.13	6.70	6.95	7.03	7.07	7.16
60°	5.48	6.38	6.87	7.11	7.22	7.28	7.35
75°	5.70	6.57	6.99	7.27	7.49	7.64	7.75
90°	5.62	6.63	7.12	7.44	7.61	7.88	8.27
110°	5.57	6.64	7.17	7.58	7.99	8.37	8.82
120°	5.38	6.49	7.08	7.49	7.93	8.39	9.22
135°	4.84	5.93	6.74	7.19	7.58	8.03	9.05
150°	4.08	5.14	6.06	6.77	7.18	7.55	8.41
Run VMG	3.54	4.45	5.26	5.98	6.62	7.06	7.80
Gybe Angles	145.1°	149.9°	152.4°	159.5°	180.0°	180.0°	180.0°

Class Division Length

CDL = **8.786**

Storm Sails Areas

Heavy Weather Jib **23.66**
Storm Jib (JL=8.61) **8.77**
Storm Trysail **10.38**

Owner

BOAT	
Name VARUNA X PRESS	Sail Nr GER 5223
File GER5223	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 13.000	E 4.560 MDT1 0.115 MW 0.165
IG 13.177	J 3.550 MDL1 0.165 GO 0.181
ISP 13.200	SFJ 0.310 MDT2 0.098 BD 0.150
BAS 1.725	SPL 3.550 MDL2 0.137 MWT 116.20
FSP 0.070	TPS 0.000 TL 1.580 MCG 4.580

INCLINING TEST AND FREEBOARDS			
Inclining Test Current Inclining			
Flotation date 20/03/2009		SG 1.0110	
FFM 1.197	FF 1.212	SFFP 0.513	
FAM 0.991	FA 0.996	SAFP 9.198	
W1 64.6	PD1 232.0	WD 9.860	
W2 64.6	PD2 231.0	GSA 50.3	
W3 70.3	PD3 248.0	RSA 7850.0	
W4 70.3	PD4 247.0	PLM 2000.0	
LCF from stem on CL / on sheer		5.563 / 5.790	
Maximum beam station from stem		6.428	
RM Measured		97.0kg-m	
RM Default		98.2kg-m	
Limit of positive stability / Stab.Index		113.3° / 111.9	
Freeboard at mast at 3.860		1.089	



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MIZZEN RIG AND SAILS	
N/A	

PROPELLER			
Installation Strut	PRD 0.375		
Type Folding 2 blades	PBW 0.000		
Twin Screw No	PIPA 0.0033		
ST1 0.042	ST3 0.180	ST5 0.290	
ST2 0.180	ST4 0.112	EDL 2.150	

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COMMENTS	

MOVABLE BALLAST	
N/A	

CENTERBOARD	
N/A	

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SAILS (Maximum Areas)									
Mainsail	MHB	MUW	MTW	MHW	MQW	Area	Area (r)	Formula	
	0.160	0.97	1.71	2.94	3.82	35.25	35.97	P/8 · (E + 2·MQW + 2·MHW + 1.5·MTW + MUW + 0.5·MHB)	
Symmetric	SLU	SLE	SL	SHW	SFL				
	12.98	12.98	12.98	6.47	5.95	68.86		SL · (SFL + 4·SHW) / 6	
Asymmetric	SLU	SLE	SL	SHW	SFL				
	13.51	12.32	12.91	4.51	6.00	51.75		AS · (SFL + 4·SHW) / 6	

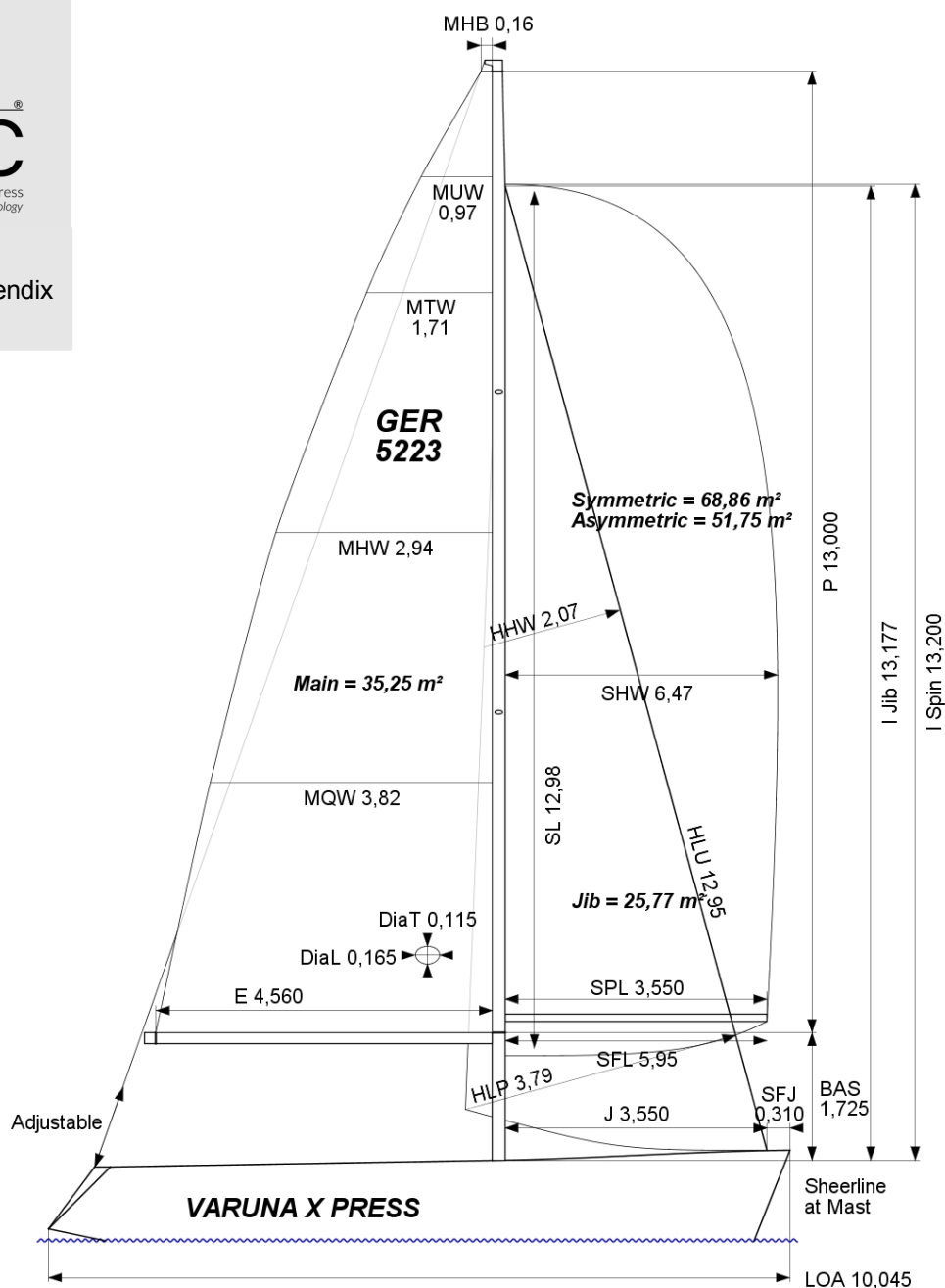
HEADSAILS												
Area = 0.1125·HLU · (1.445·HLP + 2·HQW + 2·HHW + 1.5·HTW + HUW + 0.5·HHB)												
HHB	HUW	HTW	HHW	HQW	HLP	HLU	Area	Btn	Fly	Meas.Date	Material	Comment
0.10	0.61	1.13	2.07	2.86	3.79	12.95	25.78	Y		21/02/2012	Carbon	LIGHT 2012
0.12	0.64	1.17	2.08	2.91	3.75	12.83	25.77	Y		05/06/2015	Carbon	L/M 2015
0.10	0.65	1.17	2.04	2.82	3.75	13.00	25.73	Y		30/08/2013	Carbon	M/H 3DI 2013
0.12	0.64	1.16	2.02	2.81	3.74	12.92	25.44	Y		31/03/2016	Carbon	M/H 3DI RAW 2016
0.10	0.60	1.10	1.99	2.86	3.74	12.96	25.38	Y		12/06/2017	Carbon	L/M 3DI 2012
0.11	0.60	1.10	2.01	2.82	3.71	12.95	25.24	Y		21/04/2016	Carbon	M/H 2013
0.07		0.66	1.28	1.92	2.61	11.40	14.86			06/09/2012	Kevlar	STAY

MEASUREMENT INVENTORY				
Measurer				
Date 17/04/2002				
Comment				
Id	Item	Weight	Distance	VCG Description
4	Anchor	18.0	4.30	40KG-ANCHOR-
2	Anchor	18.0	4.30	40KG-ANCHOR-
4	Foals	20.0	4.30	
2	Foals	22.0	6.50	SPECIAL REGS.
Id	Item	Maker	Model	
1	Engine	YANMAR		
Id	Item	Weight	Description	
4	Deck-Gear	9.0		

MEASUREMENT INVENTORY							
Id	Item	Tank Use	Tank Type	Capcty	Dist.	VCG	Condtn Description
1	Tank	WATER	NYLON	130.0	4.00		0-0
2	Tank	FUEL	ALU	53.0	7.60		0-0
Id	Item	Weight	Distance	VCG Description			
1	Battery	57.0	4.80	3x 19KG			



2019
Certificate Appendix
Sail Plan



SAILS INVENTORY

MAINSAIL (2)

Id	MHB	MUW	MTW	MHW	MQW	Area	Measurer	Meas.Date	Manufacture	Material	Comment
150387	0.16	0.97	1.71	2.94	3.82	35.26		21/04/2016	NORTH	Carbon	Main 2013
152082	0.15	0.90	1.62	2.80	3.75	34.24		27/08/2015	HOLMSEGEL	Polyester	Main Backup

HEADSAILS (7)

Id	HHB	HUW	HTW	HHW	HQW	HLP	HLU	Ovrlp	Area	Btn	Fly	Measurer	Meas.Date	Manufacture	Material	Comment
0	0.10	0.61	1.13	2.07	2.86	3.79	12.95	107%	25.78	Y			21/02/2012	UK	Carbon	LIGHT 2012
152127	0.12	0.64	1.17	2.08	2.91	3.75	12.83	106%	25.77	Y			05/06/2015	QUANTUM	Carbon	L/M 2015
0	0.10	0.65	1.17	2.04	2.82	3.75	13.00	106%	25.73	Y			30/08/2013	NORTH	Carbon	M/H 3DI 2013
156674	0.12	0.64	1.16	2.02	2.81	3.74	12.92	105%	25.44	Y			31/03/2016	NORTH	Carbon	M/H 3DI RAW 2016
147361	0.10	0.60	1.10	1.99	2.86	3.74	12.96	105%	25.38	Y			12/06/2017	NORTH	Carbon	L/M 3DI 2012
150395	0.11	0.60	1.10	2.01	2.82	3.71	12.95	105%	25.24	Y			21/04/2016	NORTH	Carbon	M/H 2013
1	0.07	0.66	1.28	1.92	2.61	11.40	74%	14.86					06/09/2012	NORTH	Kevlar	STAY

SYMMETRIC SPINNAKERS (7)

Id	SLU	SLE	SL	SHW	SFL	Area	Measurer	Meas.Date	Manufacture	Material	Comment
1	12.98	12.98	12.98	6.47	5.95	68.86		01/06/2018	NORTH	Nylon	S-1.5
ODE2004-	12.97	12.97	12.97	6.38	6.06	68.27		29/01/2016	NORTH	Nylon	blau
ODE2004-	12.97	12.97	12.97	6.32	6.26	68.18		29/01/2016	NORTH	Nylon	S4 0.9 2016
58342	12.86	12.86	12.86	6.38	6.10	67.78		21/02/2009	ELVSTROEM	Nylon	0,5
143009	12.86	12.86	12.86	6.36	6.14	67.69		15/02/2012	QUANTUM	Nylon	S2 ID:68599

ASYMMETRIC SPINNAKERS (1)

Id	SLU	SLE	SL	SHW	SFL	Area	Kind	Measurer	Meas.Date	Manufacture	Material	Comment
1	13.51	12.32	12.91	4.51	6.00	51.75	asym		01/06/2018	NORTH	Nylon	A-5