

BOAT Name CHINOOK Sail Nr GER 4732	GPH 645.0	HULL Length Overall 10.060m Maximum Beam 3.284m Displacement 4,647kg Draft 1.829m IMS Reg. Division Cruiser/Racer Dynamic Allowance 0.157% Fwd Accommodation Yes Hull Construction Cored Carbon Rudder No Crew Arm Extension 0.00
GENERAL Class X-332 Designer JEPPESEN Builder X-YACHTS Series 01/1994 Age 01/1998 Age Allowance 0.487% Offset File X332_I.OFF - 24/04/2001 23:00:24 Measurement by - 22/05/2003		IMSL 9.183m VCGD -0.057m Sink 17.09kg/mm RL 8.143m VCGM -0.006m WS 22.92m² LSM0 9.189m Displacement/Length ratio 5.9892



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SCORING OPTIONS						
	COASTAL / LONG DISTANCE			WINDWARD / LEEWARD		
Time on Distance	627.7			699.0		
Time on Time	0.9558			0.9657		
Triple Number	Low	Medium	High	Low	Medium	High
Time on Distance	735.8	571.9	513.8	950.0	701.4	613.4
Time on Time	0.9174	1.1802	1.3137	0.7105	0.9623	1.1004

TIME ALLOWANCES							
Wind Velocity	6 kt	8 kt	10 kt	12 kt	14 kt	16 kt	20 kt
Beat VMG	1060.7	883.5	781.7	740.0	725.0	719.7	719.1
52°	695.9	589.1	538.8	520.3	513.9	510.9	509.7
60°	658.1	564.2	525.1	508.2	500.5	496.8	495.0
75°	630.0	547.7	515.2	496.7	483.5	474.8	468.1
90°	637.5	548.9	511.8	492.6	477.3	461.4	440.3
110°	659.7	549.5	507.4	482.2	458.8	440.9	421.3
120°	682.6	563.6	513.9	487.5	462.9	439.2	403.3
135°	758.1	618.4	540.6	506.0	481.7	457.1	410.6
150°	896.4	711.0	603.0	537.6	506.0	483.1	437.6
Run VMG	1035.1	821.0	694.6	610.1	550.0	514.0	468.8

Certificate
Number **99634**
ORC Ref **GER20040251**
Issued On **07/03/2019**
VPP Ver. **2019 1.01**
Valid until **01/01/2020**

Crew Weight
Default 610kg
Maximum **550kg**
Minimum* **413kg**
**when applied by the NoR and SI*
Non Manual Pwr **No**

Special Scoring
ToD ToT
Double H.GPH **653.2 0.9185**
Double H.OSN **637.3 0.9415**
Non Spin GPH **669.6 0.8961**
Non Spin OSN **650.3 0.9226**

Selected Courses							
Windward / Leeward	1047.9	852.3	738.2	675.0	637.5	616.8	594.0
Circular Random	884.2	715.6	625.8	574.3	543.2	523.2	498.3
Coastal / Long Distance	1046.6	801.2	667.2	592.8	554.2	524.2	475.2
Non Spinnaker	928.9	746.9	649.1	592.4	557.9	535.7	508.1

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	42.5°	41.2°	40.6°	39.2°	38.6°	38.5°	38.7°
Beat VMG	3.39	4.07	4.61	4.86	4.97	5.00	5.01
52°	5.17	6.11	6.68	6.92	7.01	7.05	7.06
60°	5.47	6.38	6.86	7.08	7.19	7.25	7.27
75°	5.71	6.57	6.99	7.25	7.45	7.58	7.69
90°	5.65	6.56	7.03	7.31	7.54	7.80	8.18
110°	5.46	6.55	7.09	7.47	7.85	8.16	8.55
120°	5.27	6.39	7.00	7.38	7.78	8.20	8.93
135°	4.75	5.82	6.66	7.11	7.47	7.88	8.77
150°	4.02	5.06	5.97	6.70	7.11	7.45	8.23
Run VMG	3.48	4.39	5.18	5.90	6.55	7.00	7.68
Gybe Angles	145.5°	150.3°	152.6°	159.0°	180.0°	180.0°	180.0°

Class Division Length
CDL = **8.664**

Storm Sails Areas
Heavy Weather Jib **23.72**
Storm Jib (JL=8.62) **8.79**
Storm Trysail **10.36**

Owner

BOAT	
Name CHINOOK	Sail Nr GER 4732
File GER4732	Data in meters/kilograms

INCLINING TEST AND FREEBOARDS			
Inclining Test Current Inclining			
Flotation date 19/04/2006		SG 1.0140	
FFM 1.159	FF 1.167	SFFP 0.513	
FAM 0.980	FA 0.983	SAFP 9.213	
W1 70.0	PD1 541.4	WD 10.530	
W2 70.0	PD2 541.8	GSA 1.0	
W3 70.0	PD3 539.5	RSA 1.0	
W4 70.0	PD4 542.8	PLM 9000.0	
LCF from stem on CL / on sheer		5.581 / 5.809	
Maximum beam station from stem		6.331	
RM Measured		107.2kg-m	
RM Default		102.8kg-m	
Limit of positive stability / Stab.Index		117.4° / 118.3	
Freeboard at mast at 3.850		1.071	



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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 4.550	MDT1 0.116	MW 0.165
IG 13.198	J 3.540	MDL1 0.165	GO 0.180
ISP 13.223	SFJ 0.310	MDT2 0.097	BD 0.150
BAS 1.743	SPL 3.540	MDL2 0.135	MWT 115.00
FSP 0.074	TPS 0.000	TL 1.580	MCG 4.600

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MIZZEN RIG AND SAILS	
N/A	

PROPELLER			
Installation Strut	PRD 0.380		
Type Folding 2 blades	PBW 0.095		
Twin Screw No	PIPA 0.0032		
ST1 0.042	ST3 0.180	ST5 0.260	
ST2 0.180	ST4 0.112	EDL 2.030	

COMMENTS	

MOVABLE BALLAST	
N/A	

CENTERBOARD	
N/A	



SAILS (Maximum Areas)									
Mainsail	MHB	MUW	MTW	MHW	MQW	Area	Area (r)	Formula	
	0.180	0.94	1.70	2.89	3.79	34.92	35.59	P/8 · (E + 2·MQW+ 2·MHW + 1.5·MTW + MUW + 0.5·MHB)	
Symmetric	SLU	SLE	SL	SHW	SFL				
	12.95	12.95	12.95	6.39	6.27	68.70		SL · (SFL + 4·SHW) / 6	
Asymmetric									
Not Available									

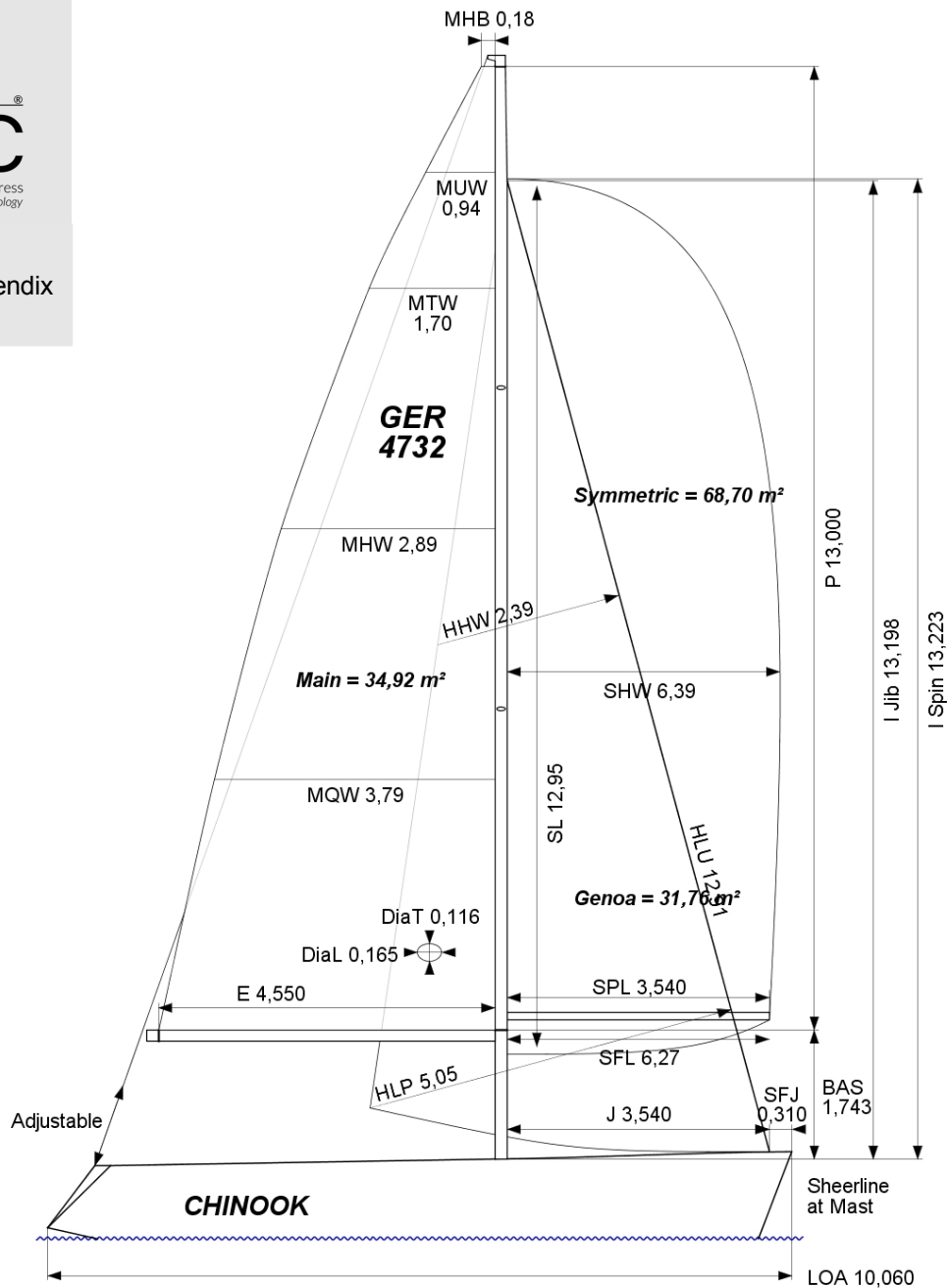
HEADSAILS												
Area = 0.1125·HLU · (1.445·HLP + 2·HQW + 2·HHW + 1.5·HTW + HUW + 0.5·HHB)												
HHB	HUW	HTW	HHW	HQW	HLP	HLU	Area	Btn	Fly	Meas.Date	Material	Comment
0.08	0.59	1.15	2.39	3.72	5.05	12.91	31.77			13/07/2012	Carbon	G1L new
0.08	0.59	1.15	2.39	3.72	5.04	12.91	31.75			13/07/2012	Carbon	G1 H - 2012
0.08	0.59	1.15	2.39	3.70	5.05	12.91	31.71			13/07/2012	Carbon	G1M-H T
0.08	0.59	1.14	2.37	3.68	5.05	12.88	31.50			31/10/2013	Carbon	G1 L-M 2013
0.11	0.64	1.16	2.07	2.86	3.75	13.10	26.11			03/07/2012	Carbon	#1 M-H PO#263518
0.10	0.52	0.97	1.84	2.81	3.75	12.96	24.41			07/08/2010	Carbon	G3M-H T
0.08	0.39	0.72	1.45	2.22	3.02	11.99	17.83			13/07/2012	Kevlar	G4 - 2012
0.00	0.00	0.00	0.00	0.00	2.83	11.98	17.26				Dacron	G4

MEASUREMENT INVENTORY				
Measurer				
Date 19/04/2006				
Comment new batt 06/14				
Id	Item	Weight	Distance	VCG Description
4	Anchor	12.0	4.35	ANCHOR
4	Chain	8.0	4.35	ROPE
Id	Item	Maker	Model	
1	Engine	YANMAR	3GM	
Id	Item	Weight Description		
4	Deck-Gear	10.0		

MEASUREMENT INVENTORY							
Id	Item	Tank Use	Tank Type	Capcty	Dist.	VCG	Condtn Description
1	Tank FUEL			50.0	8.80		0-0
2	Tank WATER			100.0	4.20		0-0
3	Tank BOILER			30.0	8.80		0-0
4	Tank LPG			3.0	8.80		3-0
Id	Item	Weight	Distance	VCG Description			
1	Battery	32.0	4.70	1x 105 AH			
2	Battery	12.5	4.70	1x 37 AH			



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Certificate Appendix
Sail Plan



SAILS INVENTORY

MAINSAIL (3)																
Id	MHB	MUW	MTW	MHW	MQW	Area	Measurer	Meas.Date	Manufacture	Material	Comment					
04	0.18	0.94	1.70	2.89	3.79	34.93		13/07/2012	UK	Carbon	M1 2009					
DK88952	0.18	0.94	1.70	2.89	3.79	34.93		22/05/2013	NORTH	Carbon	Main 2013					
HEADSAILS (8)																
Id	HHB	HUW	HTW	HHW	HQW	HLP	HLU	Ovrlp	Area	Btn	Fly	Measurer	Meas.Date	Manufacture	Material	Comment
00	0.08	0.59	1.15	2.39	3.72	5.05	12.91	143%	31.77				13/07/2012	UK	Carbon	G1L new
06	0.08	0.59	1.15	2.39	3.72	5.04	12.91	142%	31.75				13/07/2012	UK	Carbon	G1 H - 2012
02	0.08	0.59	1.15	2.39	3.70	5.05	12.91	143%	31.71				13/07/2012	UK	Carbon	G1M-H T
08	0.08	0.59	1.14	2.37	3.68	5.05	12.88	143%	31.50				31/10/2013	NORTH	Carbon	G1 L-M 2013
83404	0.11	0.64	1.16	2.07	2.86	3.75	13.10	106%	26.11				03/07/2012	NORTH	Carbon	#1 M-H PO#263518
03	0.10	0.52	0.97	1.84	2.81	3.75	12.96	106%	24.41				07/08/2010	UK	Carbon	G3M-H T
07	0.08	0.39	0.72	1.45	2.22	3.02	11.99	85%	17.83				13/07/2012	UK	Kevlar	G4 - 2012
SYMMETRIC SPINNAKERS (8)																
Id	SLU	SLE	SL	SHW	SFL	Area	Measurer	Meas.Date	Manufacture	Material	Comment					
06	12.80	12.80	12.80	6.55	6.00	68.70		28/02/2013	NORTH	Nylon	S - 4					
83212	12.80	12.80	12.80	6.55	6.00	68.70		03/07/2012	NORTH	Nylon	S - 2 PO#263521					
03	12.95	12.95	12.95	6.39	6.27	68.70		21/02/2012	NORTH	Nylon	S - 1.5					
01	12.95	12.95	12.95	6.36	6.36	68.64		10/06/2008	UK	Nylon	0.9oz					
02	12.94	12.94	12.94	6.34	6.34	68.37		25/04/2006	UK	Nylon	0.6oz					
ASYMMETRIC SPINNAKERS (0)																
Id	SLU	SLE	SL	SHW	SFL	Area	Kind	Measurer	Meas.Date	Manufacture	Material	Comment				