

BOAT Name KNUBBEL Sail Nr GER 7041	GPH 567.6	HULL Length Overall 12.168m Maximum Beam 4.490m Displacement 6,173kg Draft 2.272m IMS Reg. Division Cruiser/Racer Dynamic Allowance 0.165% Fwd Accommodation Yes Hull Construction Cored Carbon Rudder No Crew Arm Extension
GENERAL Class POGO 12.50 Designer FINOT-CONQ Builder POGO STRUCTURES Series 07/2010, CIN FR-STRP1234B515 Age 06/2015 Age Allowance 0.228% Offset File POGO1250SD.off - 07/12/2015 12:59:30 Measurement by MENTER - 01/10/2015		IMSL 12.272m VCGD -0.149m Sink 28.92kg/mm RL 9.780m VCGM -0.193m WS 36.77m² LSMO 12.593m Displacement/Length ratio 3.0911



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SCORING OPTIONS	COASTAL / LONG DISTANCE			WINDWARD / LEEWARD		
	Time On Distance	552.5			633.5	
Time On Time	1.0860			1.0656		
Triple Number	Low	Medium	High	Low	Medium	High
Time on Distance	669.8	498.3	429.0	890.6	635.4	542.1
Time on Time	1.0077	1.3547	1.5735	0.7579	1.0623	1.2451

TIME ALLOWANCES	6 kt	8 kt	10 kt	12 kt	14 kt	16 kt	20 kt
Wind Velocity	6 kt	8 kt	10 kt	12 kt	14 kt	16 kt	20 kt
Beat VMG	1049.1	845.4	730.6	675.2	649.0	633.8	618.3
52°	659.0	535.9	477.5	452.7	442.4	436.4	426.4
60°	600.5	492.6	451.5	434.6	424.5	417.8	405.7
75°	547.4	460.6	428.3	409.1	393.9	382.4	370.1
90°	535.9	455.6	424.4	395.5	370.2	356.4	335.2
110°	582.9	471.8	427.5	392.5	368.6	343.8	304.9
120°	601.6	483.6	434.9	400.5	363.8	334.4	301.4
135°	679.1	537.2	460.6	425.8	393.7	360.1	294.5
150°	810.2	634.3	529.3	465.7	435.3	411.5	345.6
Run VMG	935.6	732.4	611.2	537.7	502.1	472.7	399.1

Certificate

Number **165060**
ORC Ref **GER20018199**
Issued On **01/06/2017**
VPP Ver. **2017 1.00**
Valid until **01/01/2018**

Crew Weight

Declared **500kg**
Default* **956kg**
Non Manual Pwr **No**

Special Scoring

	ToD	ToT
Double H.GPH	571.4	1.0500
Double H.OSN	556.8	1.0775
Non Spin GPH	608.4	0.9862
Non Spin OSN	591.3	1.0148

Selected Courses	6 kt	8 kt	10 kt	12 kt	14 kt	16 kt	20 kt
Windward / Leeward	992.4	788.9	670.9	606.5	575.5	553.3	508.7
Circular Random	800.3	638.2	549.7	497.0	463.0	438.9	403.2
Ocean for PCS	997.5	758.6	622.5	537.9	481.4	440.3	379.8
Non Spinnaker	873.7	690.3	588.3	526.4	486.2	458.4	420.7

Sails Limitations

Headsails	Spinnakers
6	4

Velocity Prediction in Knots for True Wind Speeds	6 kt	8 kt	10 kt	12 kt	14 kt	16 kt	20 kt
Wind Velocity	6 kt	8 kt	10 kt	12 kt	14 kt	16 kt	20 kt
Beat Angles	47.3°	44.2°	43.6°	42.1°	40.9°	40.1°	40.7°
Beat VMG	3.43	4.26	4.93	5.33	5.55	5.68	5.82
52°	5.46	6.72	7.54	7.95	8.14	8.25	8.44
60°	6.00	7.31	7.97	8.28	8.48	8.62	8.87
75°	6.58	7.82	8.41	8.80	9.14	9.41	9.73
90°	6.72	7.90	8.48	9.10	9.72	10.10	10.74
110°	6.18	7.63	8.42	9.17	9.77	10.47	11.81
120°	5.98	7.44	8.28	8.99	9.90	10.77	11.95
135°	5.30	6.70	7.82	8.45	9.14	10.00	12.22
150°	4.44	5.68	6.80	7.73	8.27	8.75	10.42
Run VMG	3.85	4.92	5.89	6.69	7.17	7.62	9.02
Gybe Angles	142.8°	145.9°	146.7°	149.8°	150.7°	174.9°	143.8°

Class Division Length

CDL = **11.027**

Storm Sails Areas

Heavy Weather Jib **30.97**
Storm Jib (JL=9.85) **11.47**
Storm Trysail **14.68**

Owner

BOAT	
Name KNUBBEL	Sail Nr GER 7041
File GER7041	Data in meters/kilograms

INCLINING TEST AND FREEBOARDS		
Inclining Test Current Inclining		
Flotation date 01/10/2015	SG 1.0000	
FFM 1.412	FF 1.420	SFFP 0.122
FAM 0.921	FA 0.925	SAFP 12.142
W1 140.0	PD1 236.0	WD 14.910
W2 140.0	PD2 236.0	GSA 50.0
W3 140.0	PD3 236.0	RSA 18000.
W4 140.0	PD4 236.0	PLM 2065.0
LCF from stem on CL / on sheer		7.355 / 7.662
Maximum beam station from stem		10.500
RM Measured		318.7kg·m
RM Default		231.2kg·m
Limit of positive stability / Stab.Index		114.7° / 112.2
Freeboard at mast at 5.420		1.158



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IMS Measurement Certificate

RIG				
Forestay Tension Fixed	Spreaders 2			
Inner Stay Adjustable	Runners 0			
Carbon Mast Yes	Jumper Struts None			
Taper Hollows No	Jib Furler No			
Fiber Rigging Yes	Main Furler No			
Lenticular Rigging No	Without Backstay Yes			
Articulated Bowsprit No				
P 15.645	E 5.360	MDT1 0.131	MW 0.260	
IG 15.113	J 5.415	MDL1 0.260	GO 0.272	
ISP 15.873	SFJ 0.005	MDT2 0.120	BD 0.190	
BAS 1.170	SPL 0.000	MDL2 0.213	MWT 183.60	
FSP 0.000	TPS 7.120	TL 1.652	MCG 6.425	

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MIZZEN RIG AND SAILS	
N/A	

PROPELLER		
Installation Strut	PRD 0.462	
Type Folding 2 blades	PBW 0.140	
Twin Screw No	PIPA 0.0042	
ST1 0.065	ST3 0.180	ST5 0.325
ST2 0.180	ST4 0.120	EDL 2.350

COMMENTS	
Building No.: 34	

MOVEABLE BALLAST	
N/A	

CENTERBOARD	
N/A	



Invalid for Racing

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SAILS (Maximum Areas)									
Mainsail	MHB	MUW	MTW	MHW	MQW	Area	Area (r)	Formula	
	2.070	2.34	3.10	4.05	4.75	60.59	62.47	P/8 · (E + 2·MQW + 2·MHW + 1.5·MTW + MUW + 0.5·MHB)	
Symmetric Not Available									
Asymmetric	SLU	SLE	SL	SHW	SFL	Area	Formula		
	17.78	14.63	16.20	10.64	10.83	144.20	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	1.05	2.15	4.17	6.08	7.24	16.00	63.52		Y	28/02/2017	Kevlar	3DI CODE B
0.07	0.71	1.40	2.81	4.25	5.72	15.34	43.54	Y		03/04/2015	Carbon	FURLING JIB

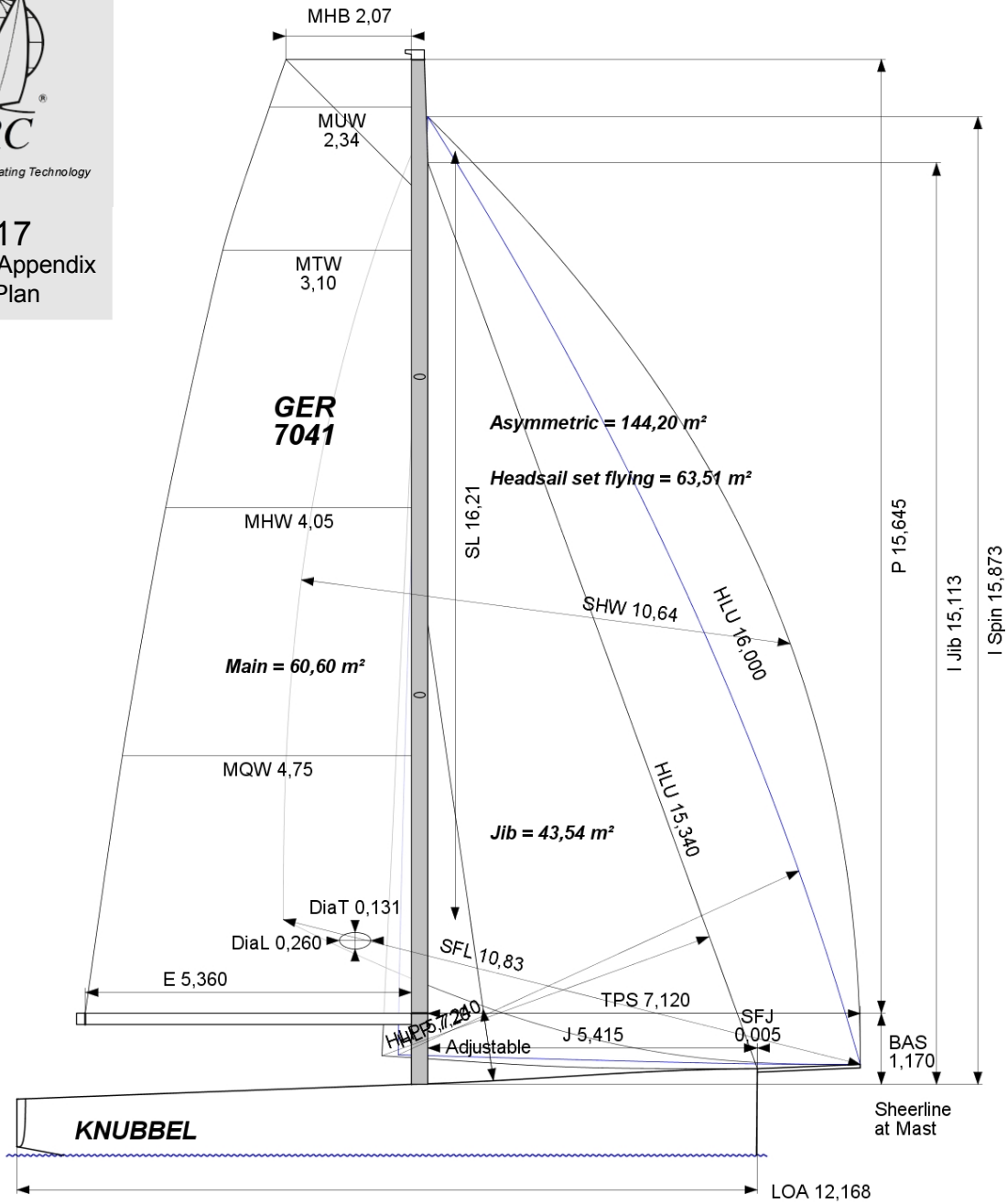
MEASUREMENT INVENTORY				
Measurer MENTER				
Date 01/10/2015				
Comment				
<i>Id</i>	<i>Item</i>	<i>Weight</i>	<i>Distance</i>	<i>VCG Description</i>
<i>Id</i>	<i>Item</i>	<i>Maker</i>	<i>Model</i>	
1	Engine	VOLVO PENTA	D1-30	
<i>Id</i>	<i>Item</i>	<i>Weight Description</i>		

MEASUREMENT INVENTORY							
<i>Id</i>	<i>Item</i>	<i>Tank Use</i>	<i>Tank Type</i>	<i>Capcty</i>	<i>Dist.</i>	<i>VCG</i>	<i>Condtn Description</i>
1	Tank	WATER	GRP	400.0	8.70	0.48	0-0 EMPTY
2	Tank	HOT WATER	SS	30.0	11.10	0.68	0-0 EMPTY
3	Tank	WASTE	PL	35.0	4.00	1.05	0-0 EMPTY
4	Tank	FUEL	PL	60.0	10.00	0.78	0-0 EMPTY
<i>Id</i>	<i>Item</i>	<i>Weight</i>	<i>Distance</i>	<i>VCG Description</i>			
1	Battery		8.90	0.48 4x 100Ah - SERVICE			
2	Battery		9.75	0.48 1x 80Ah - MOTOR			
1	Misc	19.0	1.80	0.53 BOWTHRUSTER LEWMAR RMC 140			
2	Misc	19.0	11.50	0.58 STERNTHRUSTER LEWMAR RMC 140			



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Sail Plan



SAILS INVENTORY

MANSAIL (1)																
Id	MHB	MUW	MTW	MHW	MQW	Area	Measurer	Meas.Date	Manufacture	Material	Comment					
153754	2.070	2.34	3.10	4.05	4.75	60.60	BALSER	03/04/2015	NORTH	Carbon						
HEADSAILS (2)																
Id	HHB	HUW	HTW	HHW	HQW	HLP	HLU	Ovrlp	Area	Btn	Fly	Measurer	Meas.Date	Manufacture	Material	Comment
0	0.10	1.05	2.15	4.17	6.08	7.24	16.00	134%	63.52		Y	LAURENT	28/02/2017	NORTH	Kevlar	3DI CODE B
153747	0.07	0.71	1.40	2.81	4.25	5.72	15.34	106%	43.54	Y		BALSER	03/04/2015	NORTH	Carbon	FURLING JIB
SYMMETRIC SPINNAKERS (0)																
Id	SLU	SLE	SL	SHW	SFL	Area	Measurer	Meas.Date	Manufacture	Material	Comment					
ASYMMETRIC SPINNAKERS (2)																
Id	SLU	SLE	SL	SHW	SFL	Area	Kind	Measurer	Meas.Date	Manufacture	Material	Comment				
142617	17.78	14.63	16.21	10.64	10.83	144.20	asym	MENTER	02/04/2016		Nylon	G 2				
2	16.65	13.65	15.15	7.88	10.50	106.10	asym	MAHY	16/03/2015		Nylon	CODE 0				