

BOAT
Name Czarodziejka Sail Nr POL 9658

GPH
754,1

HULL	
Length Overall	8,560m
Maximum Beam	2,818m
Displacement	2 698kg
Draft	1,757m
IMS Reg. Division	Cruiser/Racer
Dynamic Allowance	0,382%
Fwd Accommodation	No
Hull Construction	Solid
Carbon Rudder	No
Crew Arm Extension	
IMSL	6,784m VCGD -0,204m Sink 9,87kg/mm
RL	5,633m VCGM -0,089m WS 14,38m2
LSM0	6,908m Displacement/Length ratio 8,1844



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2017 (Test)
ORC International
Certificate

GENERAL
Class GRANADA 27
Designer ELVSTROEM/KJAERULF
Builder GESTEN GLASFIBER
Series 01-1976
Age 01-1979
Age Allowance 0,487%
Offset File czarodziejka.off - 2014-01-23
Measurement by J.Gorski - 14-06-2013

Rating Office

Polski Związek Żeglarski
al. ks. J.Poniatowskiego 1
03-901 Warszawa, Polska



SCORING OPTIONS						
	COASTAL / LONG DISTANCE			WINDWARD / LEEWARD		
Time On Distance	732,6			811,7		
Time On Time	0,8190			0,8316		
Triple Number	Low	Medium	High	Low	Medium	High
Time on Distance	855,5	670,2	603,4	1095,8	816,3	714,6
Time on Time	0,7890	1,0071	1,1187	0,6160	0,8269	0,9446

TIME ALLOWANCES							
Wind Velocity	6 kt	8 kt	10 kt	12 kt	14 kt	16 kt	20 kt
Beat VMG	1273,2	1074,4	963,7	889,7	859,4	847,7	849,8
52°	843,4	717,2	648,4	620,7	606,1	599,9	597,5
60°	801,1	679,6	629,2	605,1	590,0	581,0	576,6
75°	767,7	655,3	614,6	591,7	573,8	558,7	542,1
90°	764,9	639,5	597,0	583,2	571,2	553,3	523,3
110°	746,8	630,4	589,6	560,5	540,1	528,5	510,9
120°	770,7	639,9	595,1	565,5	537,1	513,5	493,4
135°	842,2	692,0	614,9	582,5	555,1	528,4	484,7
150°	977,1	786,7	666,9	610,0	581,2	555,9	508,3
Run VMG	1128,3	907,5	766,7	673,4	618,8	588,3	539,8

Certificate

Number **28**
ORC Ref **N/A**
Issued On **2017-11-28**
VPP Ver. **2017 1.00**
Invalid for Racing

Selected Courses							
Windward / Leeward	1200,7	990,9	865,2	781,5	739,1	718,0	694,8
Circular Random	1029,5	835,3	732,1	672,8	637,0	614,3	587,4
Ocean for PCS	1248,3	972,8	817,8	723,2	662,2	620,2	563,0
Non Spinnaker	1100,8	886,1	770,1	702,2	660,7	634,2	602,9

Crew Weight

Declared **300kg**
Default* **406kg**
Non Manual Pwr **No**

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°	40,7°	42,1°	40,6°	39,4°	38,8°	39,3°
Beat VMG	2,83	3,35	3,74	4,05	4,19	4,25	4,24
52°	4,27	5,02	5,55	5,80	5,94	6,00	6,03
60°	4,49	5,30	5,72	5,95	6,10	6,20	6,24
75°	4,69	5,49	5,86	6,08	6,27	6,44	6,64
90°	4,71	5,63	6,03	6,17	6,30	6,51	6,88
110°	4,82	5,71	6,11	6,42	6,67	6,81	7,05
120°	4,67	5,63	6,05	6,37	6,70	7,01	7,30
135°	4,27	5,20	5,85	6,18	6,49	6,81	7,43
150°	3,68	4,58	5,40	5,90	6,19	6,48	7,08
Run VMG	3,19	3,97	4,70	5,35	5,82	6,12	6,67
Gybe Angles	148,5°	152,5°	152,0°	170,7°	180,0°	180,0°	180,0°

Special Scoring

ToD ToT
Double H.GPH **756,8 0,7928**
Double H.OSN **736,5 0,8147**
Non Spin GPH **794,2 0,7555**
Non Spin OSN **767,5 0,7818**

Sails Limitations	
Headsails	Spinnakers
5	3

Class Division Length

CDL = **6,209**

Storm Sails Areas

Heavy Weather Jib **15,64**
Storm Jib (JL=7,00) **5,79**
Storm Trysail **4,63**

Owner

Tomasz Konnak


I certify that I understand my responsibilities under ORC Rules and Regulations

Signature

BOAT	
Name Czarodziejka File czarodziejka_test2	Sail Nr POL 9658 Data in meters/kilograms

INCLINING TEST AND FREEBOARDS		
Inclining Test Current Inclining		
Flotation date 08-06-2013		SG 1,0050
FFM 1,002	FF 1,003	SFFP 0,600
FAM 0,842	FA 0,856	SAFP 7,680
W1 11,2	PD1 59,0	WD 5,950
W2 22,4	PD2 124,0	GSA 15,9
W3 33,6	PD3 184,0	RSA 10751,
W4 44,8	PD4 244,0	PLM 2115,0
LCF from stem on CL / on sheer		4,852 / 5,008
Maximum beam station from stem		5,250
RM Measured		40,4kg·m
RM Default		34,6kg·m
Limit of positive stability / Stab.Index		124,7° / 122,7
Freeboard at mast at 4,000		0,962

RIG			
Forestay Tension Aft	Spreaders 1		Runners 0
Inner Stay None Fitted	Jumper Struts None		Jib Furler No
Carbon Mast No	Main Furler No		Without Backstay No
Taper Hollows No	MWT 63,30		MCG 4,210
Fiber Rigging No	MDT1 0,106		MW 0,155
Lenticular Rigging No	MDL1 0,155		GO 0,217
Articulated Bowsprit No	MDT2 0,106		BD 0,120
P 9,516	E 2,780	J 3,330	SPL 3,300
IG 10,563	ISP 10,613	BAS 0,973	FSP 0,000
TPS 0,000	TL 0,000	MW 0,155	MWT 63,30



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IMS Measurement Certificate

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MIZZEN RIG AND SAILS	
N/A	

PROPELLER		
Installation Strut	PRD 0,354	Type Folding 2 blades
Twin Screw No	PBW 0,013	PIPA 0,0018
ST1 0,060	ST3 0,195	ST5 0,270
ST2 0,195	ST4 0,059	EDL 1,360

COMMENTS	

MOVEABLE BALLAST	
N/A	

CENTERBOARD	
N/A	

SAILS (Maximum Areas)						
Mainsail	MHB	MUW	MTW	MHW	MQW	Area Area (r) Formula
	0,130	0,54	0,97	1,68	2,25	15,11 15,27 P/8 · (E + 2·MQW + 2·MHW + 1.5·MTW + MUW + 0.5·MHB)
Symmetric	SLU	SLE	SL	SHW	SFL	57,83 SL · (SFL + 4·SHW) / 6
	10,68	10,68	10,68	6,77	5,41	
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
0,04	0,49	0,96	1,96	3,01	4,07	10,55	21,09			26-08-2014	Dacron	genua
0,05	0,42	0,81	1,63	2,48	3,38	10,57	17,56			21-11-2017	Polyest	genua 2
0,05	0,40	0,78	1,64	2,62	3,66	8,54	14,80			04-02-2015	Dacron	fok
0,03	0,28	0,56	1,20	1,92	2,66	7,98	10,07			25-05-2013	Dacron	fok may

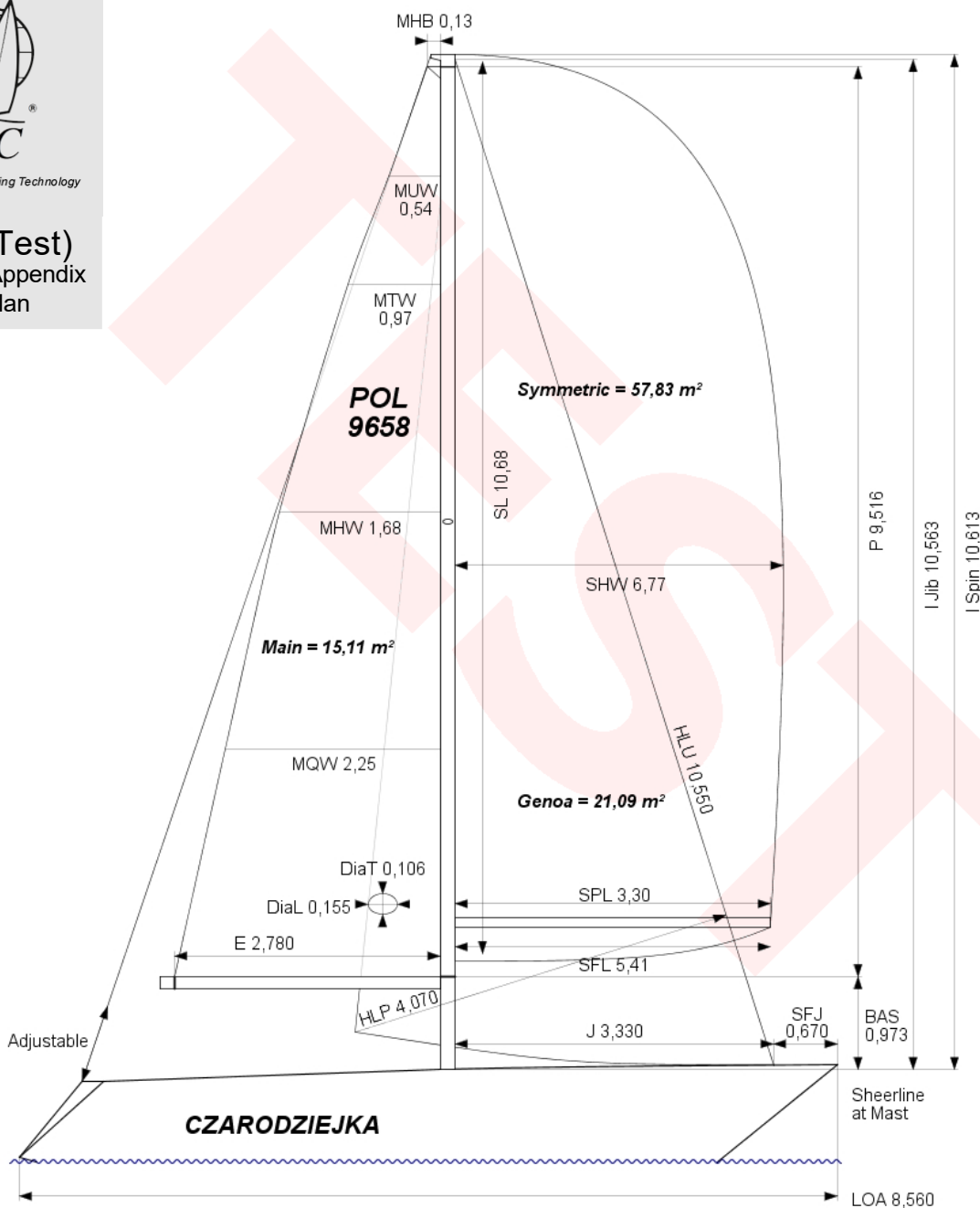
MEASUREMENT INVENTORY				
Measurer J.Gorski JG Date 08-06-2013 Comment				
Id	Item	Weight	Distance	VCG Description
+	Ancher	7,0	6,78	0,00
+	Chain	4,3	6,23	0,00
+	Feels	4,9	4,03	0,00
Id	Item	Maker	Model	
1	Engine	Volvo	MD5B	
Id	Item	Weight Description		

MEASUREMENT INVENTORY									
Id	Item	Tank	Use	Tank Type	Capcty	Dist.	VCG	Condtn	Description
1	Tank			fuel	22,0	6,53	0,00	16,0	
2	Tank			water	50,0	5,59	0,00	0,0	
Id	Item	Weight	Distance	VCG Description					
1	Battery		5,60	0,00 75 Ah					
2	Battery		5,60	0,00 WARTA, 140 Ah					



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Certificate Appendix
Sail Plan



SAILS INVENTORY

MANSAIL (2)

Id	MHB	MUW	MTW	MHW	MQW	Area	Measurer	Meas.Date	Manufacture	Material	Comment
2	0,130	0,54	0,97	1,68	2,25	15,11	J.Górski	07-09-2016	Bryt Sails	Polyester	Flex z tafetą
1	0,120	0,51	0,92	1,64	2,21	14,79	J.Gorski	25-05-2013	Sundelin	Dacron	

HEADSAILS (4)

Id	HHB	HUW	HTW	HHW	HQW	HLP	HLU	Ovrlp	Area	Btn	Fly	Measurer	Meas.Date	Manufacture	Material	Comment
3	0,04	0,49	0,96	1,96	3,01	4,07	10,55	122%	21,09			J.Górski	26-08-2014	Bryt Sails	Dacron	genua
1	0,05	0,42	0,81	1,63	2,48	3,38	10,57	102%	17,56			T.Konnak	21-11-2017	Bryt Sails	Polyest	genua 2
4	0,05	0,40	0,78	1,64	2,62	3,66	8,54	110%	14,80			J.Górski	04-02-2015	De Vries	Dacron	fok
2	0,03	0,28	0,56	1,20	1,92	2,66	7,98	80%	10,07			J.Gorski	25-05-2013	DeVries	Dacron	fok may

SYMMETRIC SPINNAKERS (2)

Id	SLU	SLE	SL	SHW	SFL	Area	Measurer	Meas.Date	Manufacture	Material	Comment
1	10,68	10,68	10,68	6,77	5,41	57,83	J.Gorski	25-05-2013	Neil Pryde	Nylon	kolorowy
2	10,85	10,85	10,85	5,73	5,26	50,96	J.Górski	26-08-2014	Ocean Sails	Nylon	black

ASYMMETRIC SPINNAKERS (0)

Id	SLU	SLE	SL	SHW	SFL	Area	Kind	Measurer	Meas.Date	Manufacture	Material	Comment
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