



World Leader in Rating Technology

2016 ORC Club Certificate

Rating Office

Žemaites 6
LT-03117 Vilnius
Lithuania
+370 650 28392



Certificate

Number **LT5386**
Issued On **2016-06-11**
ORC Ref **ltu00000376**
VPP Ver. **2016 1.01**
Valid until **2016-12-31**

Crew Weight

Declared **580kg**
Default* **472kg**
Non Manual Pwr **No**

Special Scoring

	ToD	ToT
Non Spin GPH	698,7	0,8587
Non Spin OSN	677,4	0,8857
N/S Perf. Line	28,7	0,586

Sails Limitations

Headsails **6** Spinnakers **3**

Spinnaker configuration

Symmetric: **Yes 57,87**
Asymmetric: **No**
Flying H/S: **No**
Spin. Pole: **Yes**

Class Division Length

CDL = **7,682**

Stability

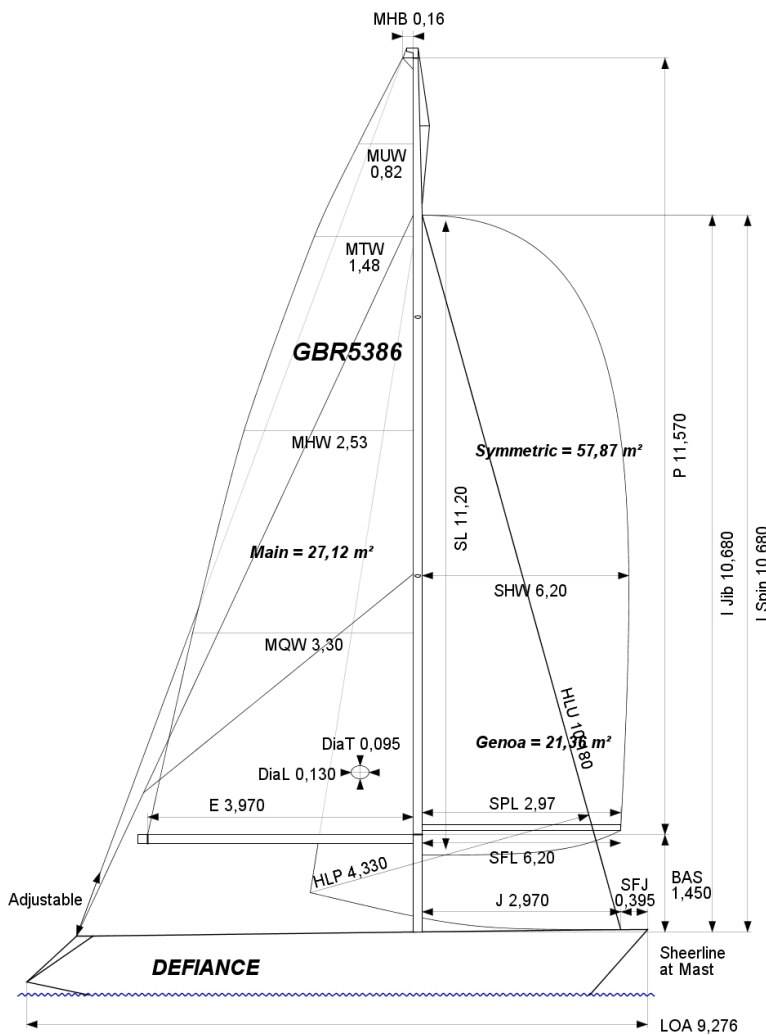
LPS (Estimated): **121,7°**
Stability Index: **117,8**
OSR Category: **N/A**

Owner

Oleg Zelenin
Lithuania

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

Signature



BOAT		GPH		HULL			
Name	Defiance			Data File	Defiance 2016-	LOA	9,276m
Sail Nr	GBR5386			Offset File	DefiaS.off	MB	3,048m
			671,4	Displacement	2 923kg	Draft	1,768m
CLASS				IMS Division	Cruiser/Racer	Dynamic All.	0,091%
Class	Toledo 31 Mk2 M			Fwd Accom.	Yes	Construction	Cored
Designer	David Thomas			Fiber Rigging	No	Aramid Core	No
Builder				Crew Arm Ex		Carbon Rudder	No
Series	12-1980					Light Stanchions	No
Age Date	12-1980			IMSL	7,822m	VCGD	-0,194m
Age Allowance	0,488%			RL	7,541m	VCGM	-0,113m
				WS		Sink	11,76kg/mm
				LSM0	7,680m	Displacement/Length ratio	6,4528
COMMENTS				Water Ballast	0	Trim Tab	No
PROPELLER				CENTERBOARD			
Installation	Shaft exposed	PRD	0,380	N/A			
Type	Feathering 2 blades	PBW	0,140				
		PIPA	0,0022				
SCORING OPTIONS							
	OFFSHORE COASTAL / LONG DISTANCE			INSHORE WINDWARD / LEEWARD			
Time On Distance	652,9			725,2			
Time On Time	0,9190			0,9308			
Performance Line	PLT	PLD		PLT	PLD		
	0,632	43,6		0,801	214,7		
Triple Number	Low	Medium	High	Low	Medium	High	
	0,8791	1,1326	1,2770	0,6786	0,9258	1,0691	

BOAT		
Name Defiance	Sail Nr GBR5386	
File Defiance 2016-06-	Data in meters/kilograms	

INCLINING TEST AND FREEBOARDS		
Inclining Test Club Estimated VCG		
Flotation date 06-06-2016	SG 1,0000	
FFM 0,966	FF 0,974	SFFP 0,467
FAM 0,877	FA 0,882	SAFP 8,287
LCF from stem on CL / on sheer		4,925 / 5,144
Maximum beam station from stem		5,041
RM Measured		55,7kg·m
RM Default		54,1kg·m
Limit of positive stability / Stab.Index		121,7° / 117,8
Freeboard at mast at 3,365		0,937

RIG		
Forestay Tension Aft	Spreaders 2	
Inner Stay None Fitted	Runners 2	
Carbon Mast No	Jumper Struts Yes	
Taper Hollows No	Jib Furler No	
Fiber Rigging No	Main Furler No	
Lenticular Rigging No	Without Backstay No	
Articulated Bowsprit No		
P 11,570	E 3,970	MDT1 0,095 MW
IG 10,680	J 2,970	MDL1 0,130 GO
ISP 10,680	SFJ 0,395	MDT2
BAS 1,450	SPL 2,970	MDL2
FSP 0,070	TPS	TL -2,000 MCG



ORC
World Leader in Rating Technology


2016
Measurements
Datasheet

MIZZEN RIG AND SAILS		
N/A		

PROPELLER		
Installation Shaft exposed	PRD 0,380	
Type Feathering 2 blades	PBW 0,140	
Twin Screw No	PIPA 0,0022	
PSA 16,000	PHL 0,060	ST3 0,100 ESL 0,600
PSD 0,020	ST1 0,016	ST4 0,016
PHD 0,050	ST2 0,100	ST5 0,350

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COMMENTS		

MOVEABLE BALLAST		
N/A		

CENTERBOARD		
N/A		

SAILS (Maximum Areas)									
Mainsail	MHB	MUW	MTW	MHW	MQW	Area	Area (r)	Formula	
	0,160	0,82	1,48	2,53	3,30	27,12	27,62	P/8 · (E + 2·MQW + 2·MHW + 1.5·MTW + MUW + 0.5·MHB)	
Symmetric	SLU	SLE	SL	SHW	SFL	57,87	SL · (SFL + 4·SHW) / 6		
	11,20	11,20	11,20	6,20	6,20				
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
0,06	0,51	1,00	2,03	3,15	4,33	10,18	21,37			03-11-2015	Unknow	"carbon"
0,06	0,40	0,78	1,59	2,45	3,38	9,80	16,06	Y		06-06-2016	Unknow	



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2016

ORC Club Certificate Appendix

BOAT	
Name	Defiance
Sail Nr	GBR5386
Certificate Number	LT5386
Issued On	2016-06-11

TIME ALLOWANCES							
Wind Velocity	6 kt	8 kt	10 kt	12 kt	14 kt	16 kt	20 kt
Beat VMG	1107,9	923,8	821,2	768,9	745,1	733,3	731,6
52°	728,8	612,6	565,3	544,0	532,8	526,6	521,7
60°	687,3	586,4	550,2	530,1	515,6	507,3	500,2
75°	653,4	569,4	538,0	516,2	495,9	480,7	466,8
90°	658,7	572,3	535,4	509,3	495,5	475,9	447,3
110°	682,1	573,5	534,3	504,1	475,2	453,4	431,5
120°	707,0	586,8	541,5	512,0	482,9	456,5	412,3
135°	787,5	645,4	564,8	531,8	503,9	476,6	427,6
150°	940,6	745,4	626,6	560,9	530,8	504,6	455,4
Run VMG	1086,1	861,1	722,4	629,1	570,3	537,9	487,5

Selected Courses							
Windward / Leeward	1097,0	892,4	771,8	699,0	657,7	635,6	609,6
Circular Random	922,6	746,4	651,8	596,5	562,0	539,2	510,0
Ocean for PCS	1133,3	876,1	731,1	642,5	584,7	543,8	485,3
Non Spinnaker	969,7	780,1	677,6	617,2	579,6	554,7	524,0

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°	41,7°	40,8°	39,2°	38,1°	37,5°	37,8°
Beat VMG	3,25	3,90	4,38	4,68	4,83	4,91	4,92
52°	4,94	5,88	6,37	6,62	6,76	6,84	6,90
60°	5,24	6,14	6,54	6,79	6,98	7,10	7,20
75°	5,51	6,32	6,69	6,97	7,26	7,49	7,71
90°	5,47	6,29	6,72	7,07	7,26	7,56	8,05
110°	5,28	6,28	6,74	7,14	7,58	7,94	8,34
120°	5,09	6,14	6,65	7,03	7,45	7,89	8,73
135°	4,57	5,58	6,37	6,77	7,14	7,55	8,42
150°	3,83	4,83	5,75	6,42	6,78	7,13	7,91
Run VMG	3,31	4,18	4,98	5,72	6,31	6,69	7,38
Gybe Angles	147,3°	151,8°	151,2°	163,5°	180,0°	180,0°	180,0°