

BOAT Name HILBO Sail Nr ESP-4666	GPH 646,7	HULL Length Overall 9,623m Maximum Beam 3,046m Displacement 3.330kg Draft 2,321m IMS Reg. Division Cruiser/Racer Dynamic Allowance 0,182% Fwd Accommodation No Hull Construction Cored Carbon Rudder No Crew Arm Extension
GENERAL Class NAUTATECH 42 Designer CAMPOS Builder ESTARELLAS Series 04/1996 Age 07/1996 Age Allowance 0,487% Offset File E4666A.OFF - 16/02/2017 9:31:00 Measurement by Manuel Gonzalez - 25/07/2000		IMSL 8,517m VCGD -0,196m Sink 13,37kg/mm RL 8,100m VCGM -0,027m WS 18,40m² LSMO 8,224m Displacement/Length ratio 5,9868



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2017
ORC International
Certificate

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SCORING OPTIONS	COASTAL / LONG DISTANCE			WINDWARD / LEEWARD		
	Low	Medium	High	Low	Medium	High
Time On Distance	628,4			704,4		
Time On Time	0,9548			0,9583		
Triple Number	Low	Medium	High	Low	Medium	High
Time on Distance	740,2	573,1	510,2	960,0	707,8	616,0
Time on Time	0,9119	1,1779	1,3230	0,7031	0,9537	1,0958

TIME ALLOWANCES	Wind Velocity						
	6 kt	8 kt	10 kt	12 kt	14 kt	16 kt	20 kt
Beat VMG	1117,3	922,2	807,2	741,9	719,0	708,1	694,9
52°	732,6	611,6	550,4	525,0	514,9	510,0	504,3
60°	690,5	581,0	534,6	512,0	499,4	493,5	489,1
75°	656,6	559,6	522,9	500,2	480,5	466,4	456,6
90°	636,4	538,1	510,0	497,3	478,7	457,6	427,9
110°	633,9	535,6	498,8	470,7	455,3	442,4	418,1
120°	656,0	546,7	506,6	475,3	444,3	424,7	398,5
135°	734,8	593,8	528,8	497,7	468,2	439,2	378,3
150°	868,1	691,3	586,8	535,9	510,4	489,3	435,9
Run VMG	1002,4	798,2	677,5	618,4	576,2	533,4	485,4

Certificate
Number **466601**
ORC Ref **ESP00021595**
Issued On **17/02/2017**
VPP Ver. **2017 1.00**
Valid until **31/12/2017**

Crew Weight
Declared **500kg**
Default* **521kg**
Non Manual Pwr **No**

Special Scoring

	ToD	ToT
Double H.GPH	651,6	0,9208
Double H.OSN	635,1	0,9448
Non Spin GPH	687,7	0,8725
Non Spin OSN	664,1	0,9035

Selected Courses	Windward / Leeward							
	6 kt	8 kt	10 kt	12 kt	14 kt	16 kt	20 kt	
	Circular Random	889,8	718,7	627,4	574,6	541,9	519,9	489,7
	Ocean for PCS	1089,5	842,4	703,3	618,5	563,4	524,6	469,7
	Non Spinnaker	969,0	773,1	665,9	602,3	562,4	536,0	502,8

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	42,5°	41,3°	41,0°	38,8°	37,8°	37,3°	36,9°
Beat VMG	3,22	3,90	4,46	4,85	5,01	5,08	5,18
52°	4,91	5,89	6,54	6,86	6,99	7,06	7,14
60°	5,21	6,20	6,73	7,03	7,21	7,29	7,36
75°	5,48	6,43	6,88	7,20	7,49	7,72	7,88
90°	5,66	6,69	7,06	7,24	7,52	7,87	8,41
110°	5,68	6,72	7,22	7,65	7,91	8,14	8,61
120°	5,49	6,58	7,11	7,57	8,10	8,48	9,03
135°	4,90	6,06	6,81	7,23	7,69	8,20	9,52
150°	4,15	5,21	6,14	6,72	7,05	7,36	8,26
Run VMG	3,59	4,51	5,31	5,82	6,25	6,75	7,42
Gybe Angles	144,7°	147,5°	148,1°	150,3°	174,5°	177,2°	177,5°

Class Division Length
CDL = **8,310**

Storm Sails Areas

Heavy Weather Jib	19,95
Storm Jib (JL=7,90)	7,39
Storm Trysail	9,01

Owner

BOAT	
Name HILBO	Sail Nr ESP-4666
File E4666	Data in meters/kilograms

INCLINING TEST AND FREEBOARDS		
Inclining Test Current Inclining		
Flotation date 15/02/2017	SG 1,0250	
FFM 1,161	FF 1,161	SFFP 0,110
FAM 0,870	FA 0,870	SAFP 9,447
W1 45,8	PD1 502,8	WD 9,000
W2 45,8	PD2 500,0	GSA 1,0
W3 45,8	PD3 497,1	RSA 1,0
W4 45,8	PD4 498,3	PLM 9000,0
LCF from stem on CL / on sheer		5,163 / 5,356
Maximum beam station from stem		6,808
RM Measured		65,0kg·m
RM Default		68,3kg·m
Limit of positive stability / Stab.Index		120,4° / 118,8
Freeboard at mast at 3,570		1,004

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 11,700	E 4,400	MDT1 0,085	MW 0,155	
IG 12,070	J 3,470	MDL1 0,155	GO 0,180	
ISP 13,110	SFJ 0,100	MDT2 0,085	BD 0,158	
BAS 1,560	SPL	MDL2 0,130	MWT 94,00	
FSP 0,048	TPS 4,190	TL 1,200	MCG 4,310	



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IMS Measurement Certificate

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MIZZEN RIG AND SAILS	
N/A	

PROPELLER		
Installation Strut	PRD 0,380	
Type Folding 2 blades	PBW 0,100	
Twin Screw No	PIPA 0,0034	
ST1 0,050	ST3 0,170	ST5 0,320
ST2 0,170	ST4 0,100	EDL 1,250

COMMENTS	
Añadido plomo en quilla 01/17	

MOVEABLE BALLAST	
N/A	

CENTERBOARD	
N/A	

SAILS (Maximum Areas)									
Mainsail	MHB	MUW	MTW	MHW	MQW	Area	Area (r)	Formula	
	0,135	0,87	1,52	2,63	3,55	29,22	29,72	P/8 · (E + 2·MQW + 2·MHW + 1.5·MTW + MUW + 0.5·MHB)	
Symmetric Not Available									
Asymmetric	SLU	SLE	SL	SHW	SFL	82,69	AS · (SFL + 4·SHW) / 6		
	14,38	12,21	13,29	7,53	7,20				

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	0,49	0,95	1,88	2,79	3,63	11,60	21,59	Y		02/10/2014	Poly est	* Copied from legacy *

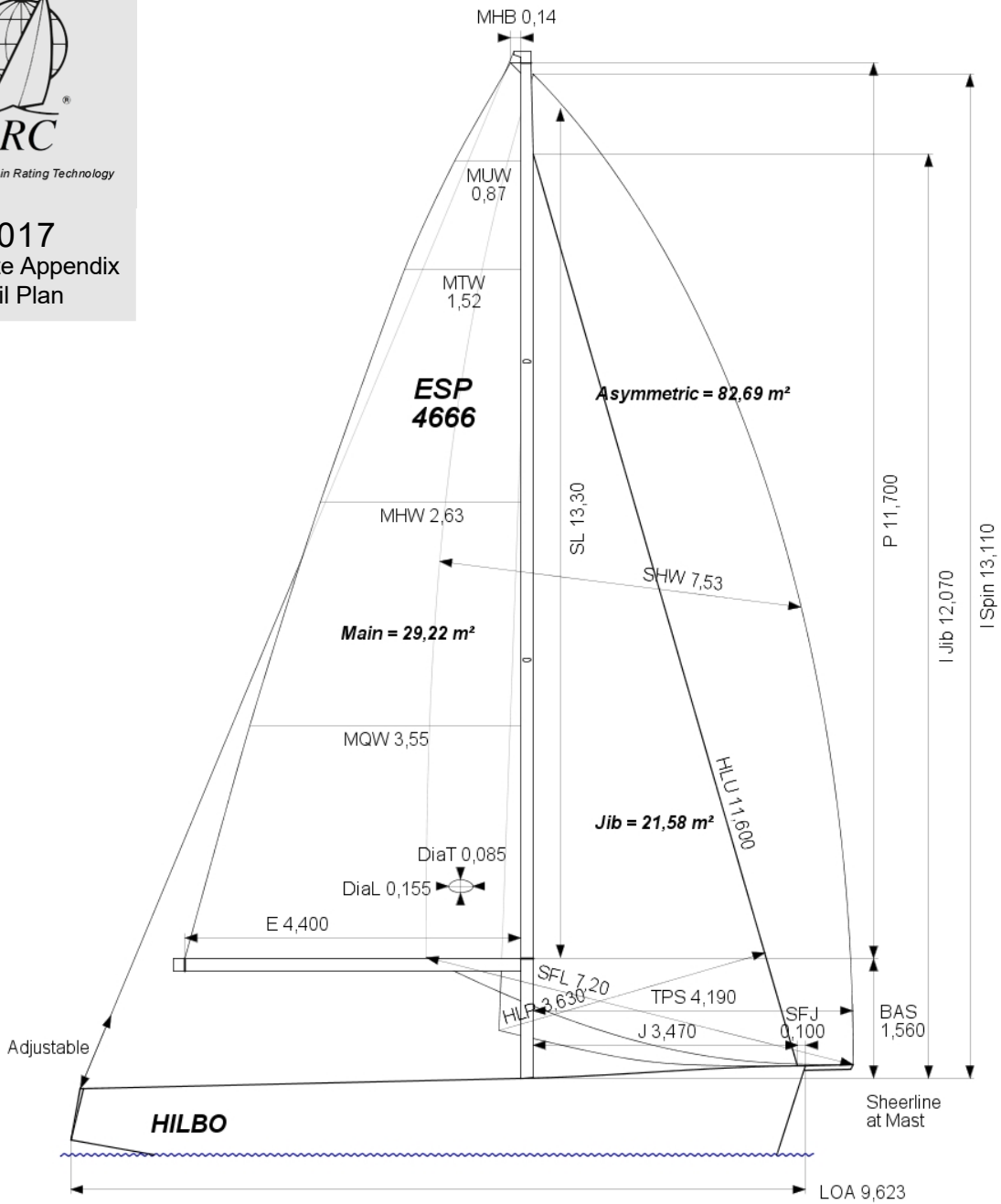
MEASUREMENT INVENTORY				
Measurer Tacha Montaner ESP-222				
Date 15/02/2017				
Comment				
<i>Id</i>	<i>Item</i>	<i>Weight</i>	<i>Distance</i>	<i>VCG Description</i>
<i>Id</i>	<i>Item</i>	<i>Weight Description</i>		

MEASUREMENT INVENTORY				
<i>Id</i>	<i>Item</i>	<i>Weight</i>	<i>Distance</i>	<i>VCG Description</i>



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Certificate Appendix
Sail Plan



SAILS INVENTORY

MAINSAIL (1)

Id	MHB	MUW	MTW	MHW	MQW	Area	Measurer	Meas.Date	Manufacture	Material	Comment
ORC	0,135	0,87	1,52	2,63	3,55	29,22	MGD	02/10/2014		Unknown	* Copied from legacy

HEADSAILS (1)

Id	HHB	HUW	HTW	HHW	HQW	HLP	HLU	Ovrlp	Area	Btn	Fly	Measurer	Meas.Date	Manufacture	Material	Comment
ORC	0,08	0,49	0,95	1,88	2,79	3,63	11,60	105%	21,59	Y		MGD	02/10/2014		Polyest	* Copied from legacy *

SYMMETRIC SPINNAKERS (0)

Id	SLU	SLE	SL	SHW	SFL	Area	Measurer	Meas.Date	Manufacture	Material	Comment
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ASYMMETRIC SPINNAKERS (1)

Id	SLU	SLE	SL	SHW	SFL	Area	Kind	Measurer	Meas.Date	Manufacture	Material	Comment
ORC	14,38	12,21	13,30	7,53	7,20	82,69	asym	MGD	02/10/2014		Nylon	