

12



INTERNATIONAL TWELVE METRE CLASS

Yacht's Name Challenge 12

National letters and Sail Number KA 10 Club New York Yacht Club

Designer Ben Lexcen

Builder S E Ward and Co Building Year 1982

Owner Jack LeFort

Owner's Address Challenge 12 LLC
Walcott Ave, Jamestown, RI USA

Lloyds R class certificate (Number or Date) _____

RATING CERTIFICATE

This yacht has been measured by measurer(s) appointed by the International Twelve Metre Association and has been found to rate not more than 12.000 metres.

This certificate is dated: 12-Jun-21

Measurer A Williams Signature Ander

Valid until 12-Jun-23

Supersedes 6-Sep-18

Is this an **Appendix E** Certificate? Y / N Yes

Was **Appendix F** used for Measurement? Y / N Yes Scanned Hull

Signature [Signature]
ITMA Technical Director

Stamp of Authority of the
International Twelve Metre Association



RATING CALCULATION**OVERALL LENGTH****19.301**

Overhang Forward to FGS

1.666

Overhang Aft to AGS

2.421

Total Overhang (Subtract)

4.087

MEASURED LENGTH (L_{BG})**15.214**

Girth at Bow

1.539

Twice vertical Height at Bow (Subtract)

1.200

Girth Difference at FGS

0.339

Add 1.5 x Girth Difference at FGS (min 0.540 m)

0.540

Girth at Stern

3.294

Twice vertical Height at Stern (Subtract)

1.632

Girth Difference at AGS

1.662

Add 1/3 Girth Difference at AGS (min 0.400 m)

0.554

Add any penalty (Beam or Displacement)

Sum of Length and Girth Corrections

16.308

Age/Design Correction Factor (ADCF)(see page 3)

0.9890

LENGTH (L)**16.129**

Skin IM to d1 Port

2.147

Chain IM to d1 Port

2.086

d Port

0.061

Skin IM to d1 Starboard

2.148

Chain IM to d1 Starboard

2.083

d Starboard

0.065

Add d

0.126

Add GIRTH 2 d**0.252**

Mean Freeboard Bow

Datum Sta.	Actual Sta.	Rating FB
	1.220	1.241
	1.034	1.034
	0.996	0.996
		3.271

Mean Freeboard Midship

1.034

1.034

Mean Freeboard Stern

0.996

0.996

Sum of Freeboards

3.271

Subtract FREEBOARD, F**1.036****Add SAIL AREAS (Square root)****13.096****TOTAL OF MEASUREMENTS****28.441**

PENALTY (Draft or Tumblehome)

0.000

0

RATING**12.000**

Date and Place of Measurement

12-Jun-21

Measurer's Name(s)

A Williams

Signature

Ander

Yacht's name : Challenge 12		Date	12-Jun-21
Range Measurement (Yes or No)	Yes	Date:	April 2017

PENALTIES

Overhang Forward to MWL	2.421	
Overhang Aft to MWL	3.277	
Subtract from overall length	5.698	
Difference of immersion from salt to fresh water	Meas. Density	0.000
WATERLINE LENGTH (LWL)		13.603
Minimum Displacement for Zero Penalty [m3]	23.655	
Minimum Weight for Zero Penalty [ton] (Water of sg 1.025)	24.246	
WEIGHT [tonne] Actual weight		24.321
Equivalent LWL (for Displ. < min.)	13.618	
Difference	0.015	
DISPLACEMENT PENALTY (add to L)		0.000
Displacement Determination Method	Hull Scan	
DRAFT (actual)	2.648	
Max. Draft for Zero Penalty	2.676	
Difference (if positive)		
DRAFT PENALTY (add to Rating)	Appendix E	0.000
BEAM (Min)	3.645	
Max Beam at 1/3 of Midship Freeboard	0.000	
Difference (if positive)	0.000	
BEAM PENALTY (add to L)		0.000
Tumblehome Max. (2 x 2% of Extr. Beam)	0.000	
Extreme Beam	3.720	
Beam at deck	3.720	
Difference (if positive)	0.000	
TUMBLEHOME PENALTY (add to Rating)		0.000

Date and Place of Measurement	12-Jun-21	
Measurer's Name(s)	A Williams	Signature <i>Ander</i>

Design/Age Correction Factor Calculation		
Age Date	1982	
ADCF (Table E-2)	0.9890	
Hull Alteration Scope and Date		
Appendage Change Scope and Date		
Change/Alteration Correction ADCF		
Accommodation Deficiency Ballast		

SAIL PLAN

Max Height of Sail Plan =	<input type="text" value="25.000"/>	J=	<input type="text" value="7.435"/>	I =	<input type="text" value="18.750"/>
Boom above Mast Datum =	<input type="text" value="1.440"/>	P=	<input type="text" value="23.560"/>	E=	<input type="text" value="9.529"/>
Rated Mainsail Area	<input type="text" value="112.252"/>	Spi boom=	<input type="text" value="7.435"/>	√S=	<input type="text" value="13.096"/>
J used for Rating			<input type="text" value="7.435"/>		
Rated Foretriangle Area	<input type="text" value="59.248"/>	Propeller allowance		<input type="text" value="1.000"/>	
TOTAL RATED SAIL AREA (S)	<input type="text" value="171.499"/>	Corrected sail area		<input type="text" value="171.499"/>	

SAIL LIMITS

Mainsail max girth:	1/2 height (68% of E)	<input type="text" value="6.480"/>	3/4 height (41% of E)	<input type="text" value="3.907"/>
Genoa:	max. foot length (J + 4.8m)	<input type="text" value="12.235"/>		
Spinnaker:	1/2 foot max breadth (125% J)	<input type="text" value="9.294"/>	max. luff length=	<input type="text" value="18.636"/>

Spar Measurement

MAST (material)	<input type="text" value="Aluminium"/>	Mast Weight	<input type="text" value="455"/>	CG pos.	<input type="text" value="9.503"/>
	Deck	Half-Height	Jib-Halyard	Head	
Mast dimensions [mm]	<input type="text" value="352 x 246"/>	<input type="text" value="350 x 246"/>	<input type="text" value="282 x 204"/>	<input type="text" value="166 x 126"/>	
Sections area [cm ²]	<input type="text" value="608"/>	<input type="text" value="676"/>	<input type="text" value="452"/>	<input type="text" value="166"/>	
Mast CG Correction (if applicable) Wt & CG	<input type="text" value="@"/>		Mk ²	<input type="text" value=""/>	

Engine/Propeller Installation

Engine and propeller weight	<input type="text" value="NA"/>	Propeller diameter =	<input type="text" value=""/>
Minimum boat speed with engine	<input type="text" value=""/>	Propeller position =	<input type="text" value=""/>
Propeller Type (folding feathering fixed pitch etc.), no of blades	<input type="text" value=""/>		<input type="text" value=""/>
Propeller Skew	<input type="text" value=""/>		<input type="text" value=""/>

Flotation

Internal Ballast	Amount	Location aft of bow
10 lead pigs, @ 26 kg	262 kg	4.84m
7 lead pigs, @ 26 kg	182 kg	5.24m

Measurer's Notes

- 1 Hull data from a Range Measurement, Portsmouth RI, April 2017.
- 2 Ground tackle at 8.00 m aft of stem.
- 3 Batteries at 6.1m aft of stem.
- 4 Mast weighed, Portsmouth RI in June 2017.
- 5 Boat not weighed, Displacment from 3D model
- 6 Mast moved aft 2018

Date and Place of Measurement

12-Jun-21

Measurer's Name(s)

A Williams

Signature

