## Table 2

High Speed 80' Yacht with optimized Superstructure and Surface Propellers

DATE : 3112022 HYSUCRAFT PROPULSION DATA

CHINE LENGTH= 22.800 m DISPLACEMENT: 73.400t LCG=36.0 %LCHI LCP=46.0%LCHI
PROPULSION POWER: 2830.0 KW FUEL STORAGE: 6250.0 KG FUEL SPEC.DENSITY:0.860
HEAD WIND: 0.04KNOT SLEND.RATIO= 5.49 TRIMTAB:1.00 DGR RFOILDIHDR: 0.00 DGR

| SPEED KNOTS | TRIM DEGREE | Rtot KN | Peff KW | Pb KW | FUEL l/h | RANGE N.MILES | FUEL L/N.M | CO2 Kg/h | MPG USA | EPS -- | FND -- | HPR -- | MPH USA: | RANGE MILES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 20.00 | 2.59 | 52.938 | 544.68 | 1233.45 | 299.5 | 485.75 | 14.961 | 805.1 | 0.291 | 0.166 | 1.612 | 9.68 | 23.02 | 559.10 |
| 30.00 | 2.23 | 53.154 | 820.37 | 1552.36 | 377.3 | 578.48 | 12.563 | 1014.1 | 0.346 | 0.140 | 2.418 | 17.31 | 34.52 | 665.83 |
| 40.00 | 2.88 | 57.782 | 1189.04 | 1892.92 | 465.4 | 625.28 | 11.623 | 1250.9 | 0.374 | 0.128 | 3.224 | 25.24 | 46.03 | 719.70 |
| 50.00 | 2.78 | 52.925 | 1361.38 | 2010.90 | 497.6 | 731.00 | 9.942 | 1337.5 | 0.438 | 0.109 | 4.030 | 37.12 | 57.54 | 841.38 |
| 60.00 | 2.36 | 52.199 | 1611.23 | 2336.66 | 592.5 | 736.77 | 9.864 | 1592.4 | 0.441 | 0.105 | 4.836 | 46.00 | 69.05 | 848.02 |

EXPLANATION OF PERFORMANCE DATA

Speed:Shipspeed in Knots
TRIM: Aangle at speed in degree
Rtot: Hull total resistance in K-Newtons,Propulsionsdrag
not included but part of overall propulsive coefficient
Peff: Effective hull power in Kilo-watt ( Peff=Rtot*VS )
Pb: Engine crankshaft power in kW ( Pb=Peff/OPC ) see[1]
FUEL: Fuel consumption in liter per hour at speed
RANGE:Traveldistance of ship in Naut.miles with full fuel
FUEL: Fuel consumption in LITER per Naut.-mile
CO2: Carbondioxyd Consumption in kg per hour
MPG: Stat.miles/US-Gallon(multiply by 0.8676for naut.miles
0R BY 0.229194 FOR Naut.Miles per liter fuel )
EPS: Inverse of well known Transport efficiency
EPS=Pb[KW]/(D[t]*9.81[m/sec**2]*VS[m/s])
FND: FROUDE DISPLACEMENT NUMBER, DIMENTIONLESS SPEED
Best efficiency indicator,lowest value=highest efficiency
HPR: HYDRODYNAMIC PERFORMANCE RATING , HPR=FND/EPS
MPH-USA:ONE USA-MILE IS 0.867604 NAUTICAL MILE
[1] D.L.Blount,D.L.Fox,"Small-Craft Power Prediction"
Marine Technology,1st.January1976,pp14-45