Transformer

Usc	15	U short circuit
Isc	45.55	I short circuit
Psc	300	Power during short circuit measurement
Uoc	3000	U open circuit
Ioc	0.2	I open circuit
Poc	200	Power during open circuit measurement
Usec	220	Secondary voltage, primary voltage equals Uoc

Calculate

Short circuit test
Measured values are rms values, cos(ϕ) or real power measured, recalculate cos(ϕ) from cos(ϕ)=P/(U*I)

Short circuit test parameter calculation of the copper losses. Secondary(transformed to primary) winding impedance and primary winding impedance.
P[Watt] during short circuit = P=Usc*Isc*cos(ϕ)=300[Watt]
cos(ϕ) during short circuit cos(ϕ) = P/Usc*Isc=300/(45.55*15=0.44

From P and I the winding copper loss resistance is calculated:
R_{CU}[ohm]=P/I^2=300/(46*46)=145[mΩ]

Apparent S[VA] during short circuit = S=Usc*Isc=15*45.55=683.25[VA]
Q[VAR] during short circuit = Q=sqrt(S^2-P^2)=sqrt(683.25*683.25-300*300)=614[VAR]

From reactive power, the leakage winding inductance is calculated
X_σ=Q/I^2=614/(46*46)=0.296[ohm]
$L_\sigma$sec[H]=X_σ/(2 π f)=0/314.15927=0.942[mH]

No load test
Measured values are rms values, cos(ϕ) or real power measured, recalculate cos(ϕ) from cos(ϕ)=P/(U*I)

P[Watt] during open circuit = P=Usc*Isc*cos(ϕ)=200[Watt]
cos(ϕ) during open circuit cos(ϕ) = P/Usc*Isc=200/(0.2*3000=0.33

From P and U the iron loss resistance $R_{FE}$is calculated:
R_{FE}sec[ohm]=U^2/P=(3000*3000)/200)=45000[ohm]

Apparent S[VA] during open circuit = S=Uoc*Ioc=3000*0=600[VA]
Q[VAR] during open circuit = Q=sqrt(S^2-P^2)=sqrt(600*600-200*200)=566[VAR]

From reactive power, the magnetizing winding inductance is calculated
X_m[ohm]=U^2/Q=(3000*3000)/566)=15910[ohm]
L_m[mH]=X_m/(2 π f)=15910/314.15927=50643[mH]

Transformer ratio
Transformer ratio n = Uprimary/Usecondary
Transformer ratio n = 3000/220=14

Transformer Power size
S = 3000*46=136650[VA]

Short circuit voltage in percent
U_k = Usc/UNominal at primary side
uk[%] = 15/3000=1[%]

Real primary and secondary winding resistance
Measured and calculated copper loss resistance R_{CU} = 144.6[mΩ]
Primary + transformed secondary resistance = R_{CU} = 144.6[mΩ]
Rcu=Rprimary+n^2Rsecondary
Rcu=145=Rprimary+14^2Rsecondary[mΩ]
Real primary winding resistance Rprimary = 1[mΩ]
Real secondary winding resistance Rsecondary = 1[mΩ]
Transformed secondary winding resistance R`secondary = 143.8[mΩ]

Copper loss at nominal load
Nominal input current Isc = 46[A]
Nominal output current n*Isc = 621[A]
Nominal primary winding loss = Isc^2*Rp = 2[Watt]
Nominal secondary winding loss = $(Isc/n)^2$*Rs = 298[Watt]