

## Celtic Espresso - 4.3%

### Irish Stout

Author: BeerBuds Greece

Type: All Grain

IBU : 32 (Tinseth)  
 BU/GU : 0.74  
 Color : 70 EBC  
 Carbonation : 2.4 CO2-vol

Pre-Boil Gravity : 1.042  
 Original Gravity : 1.044  
 Final Gravity : 1.011

### Fermentables (4.8 kg)

2.8 kg - Chateau Maris Otter 4 EBC (58.3%)  
 900 g - Barley, Flaked 3.3 EBC (18.8%)  
 400 g - BEST Roasted Barley 1300 EBC (8.3%)  
 400 g - Carapils Malt 5.5 EBC (8.3%)  
 200 g - Caramel/Crystal Malt 60L 115 EBC (4.2%)  
 100 g - BEST Black Malt 1150 EBC (2.1%)

### Hops (65 g)

30 min - 25 g - Columbus (Tomahawk) - 14% (26...)  
 10 min - 40 g - Fuggle - 4.5% (6 IBU)

### Miscellaneous

Mash - 1 g - Calcium Chloride (CaCl2)  
 Mash - 3 g - Epsom Salt (MgSO4)  
 Mash - 1 g - Gypsum (CaSO4)  
 Mash - 2.5 ml - Phosphoric Acid 85%

### Yeast

1 pkg - Fermentis SafAle English Ale S-04

### BrewZilla / RoboBrew 35L

Batch Size : 25 L  
 Boil Size : 30.67 L  
 Post-Boil Vol : 29.17 L

Mash Water : 21.15 L  
 Sparge Water : 12.61 L  
 Boil Time : 30 min  
 Total Water : 33.76 L

Brewhouse Efficiency: 75%  
 Mash Efficiency: 84%

### Mash Profile

High fermentability plus mash out  
 67 °C - 60 min - Temperature  
 75 °C - 10 min - Mash Out

### Fermentation Profile

Ale  
 20 °C - 14 days - Primary

### Water Profile

argiroupoli water (Style - Dry Stout)  
 Ca 65 Mg 14 Na 2 Cl 20 SO 63 HCO 155

SO/Cl ratio: 3.1

Mash pH: 5.34

### Measurements

Mash pH:

Boil Volume:

Pre-Boil Gravity:

Post-Boil Kettle Volume:

Original Gravity:

Fermenter Top-Up:

Fermenter Volume:

Final Gravity:

Bottling Volume:



70 EBC

### Recipe Notes

Optional:

-To achieve a lighter dark, ruby color, add the roasted malts (Roasted Barley, Caramel/Crystal Malt 60L, and Black Malt) to the mash 30-40 minutes into the process.

-If you are kegging and desire the "Guinness effect" for this beer, you'll need to add a mixture of 70-75% nitrogen and 25-30% CO2.

Drink at a temperature of 8-12°C to bring out the roasted and aromatic characteristics of the beer. If refrigerated, hold the beer bottle or glass with both hands for a couple of seconds before serving.

# Celtic Espresso

## Recipe Notes

[www.beerbuds.gr](http://www.beerbuds.gr)