

## Kernel 1856 Imperial Brown Stout v2 - 10.9%

### Imperial Stout

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Type: All Grain

IBU : 87 (Tinseth)  
BU/GU : 0.91  
Colour : 75 EBC  
Carbonation : 2.3 CO2-vol

Pre-Boil Gravity : 1.064  
Original Gravity : 1.096  
Final Gravity : 1.013

### Fermentables (2.35 kg)

1.768 kg - Maris Otter Pale Ale Malt 5.9 EBC...  
^ Brouwstore (NL)  
227 g - Brown Malt 150 EBC (9.7%)  
^ Brouwmaatje (NL) BM-SI.100337/1  
91 g - Amber Malt 50 EBC (3.9%)  
^ The Malt Miller (UK) MAL-02-000  
91 g - 10 min - Boil - Brown Sugar, Light 15....  
91 g - 10 min - Boil - Sugar, Table (Sucrose)...  
^ Albert Heijn (NL)  
81 g - 30 min - Steep - Black Malt 1340 EBC (...  
^ The Malt Miller (UK) MAL-02-008

### Hops (45 g)

60 min - 25 g - Bramling Cross (Whole) - 5% (...  
^ Lot # 20220903  
^ Home grown by The Thirsty Otter  
30 min - 20 g - Godiva (Whole) - 7.52% (42 IBU)  
^ Worcesterc Hop Shop (UK)

### Miscellaneous

Mash - 0.7 g - Baking Soda (NaHCO3)  
^ Lot # 41190621/3  
^ Brouwstore (NL) 003.106.2  
Mash - 2.46 g - Calcium Chloride (CaCl2) 33 %...  
^ Lot # 115038  
^ Brouwstore (NL) 055.035.0  
Mash - 0.69 g - Canning Salt (NaCl)  
^ Albert Heijn (NL)  
Mash - 1 g - Epsom Salt (MgSO4)  
^ Lot # /2119000091  
^ Brouwstore (NL) 055.027.7  
Mash - 1 g - Gypsum (CaSO4)  
^ The Malt Miller (UK) CHE-03-004  
Mash - 0.6 ml - Lactic Acid 80% 80%  
^ Lot # 20200213  
^ Brouwstore (NL) 003.002.3  
10 min - Boil - 1 g - Irish Moss  
^ Lot # 4348  
^ Brouwstore (NL) 125.249.1

### Yeast

1 pkg - Fermentis Safale American US-05  
^ Brouwmaatje (NL) BM-BV.40719

### 01 Brouwpunt 5L (60min) (rev 4)

Batch Size : 5.6 L  
Boil Size : 7.76 L  
Post-Boil Vol : 5.96 L

Mash Water : 6.26 L  
Sparge Water : 3.62 L  
Boil Time : 60 min  
Total Water : 9.88 L



75 EBC

Brewhouse Efficiency: 71.8%  
Mash Efficiency: 73.3%

### Mash Profile

01 One Step Mash (60 min)  
71 °C - Strike Temp  
65 °C - 60 min - Temperature

### Fermentation Profile

01 Ale + DR + Conditioning  
18 °C - 10 days - Primary  
21 °C - 4 days - Diacetyl rest  
18 °C - 14 days - Carbonation  
18 °C - 28 days - Conditioning

### Water Profile

02 NL Spa Reine Flat Mineral Water (www.ah.nl...  
Ca 58 Mg 12 Na 50 Cl 100 SO 100 HCO 67

SO/Cl ratio: 1  
Mash pH: 5.39  
Sparge pH: 6

### Measurements

Mash pH:  
Boil Volume:  
Pre-Boil Gravity:  
Post-Boil Kettle Volume:  
Original Gravity:  
Fermenter Top-Up:  
Fermenter Volume:  
Final Gravity:  
Bottling Volume:

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## Recipe Notes

Target: ABV = 9.7 % (9.3% pre-priming), IBU = 90, OG = 1.096, FG = 1.022-1.025.

Hops (not specified) @ 60 and sometimes 30 for 90 IBUs

We add most of the hops at the beginning of the boil, and sometimes some more at 30 mins, but nothing after that. We also only boil for 60mins now. We bitter to a theoretical 90.

We mash very low (for us) at 65C, which is 3.5C lower than our pale ale mash temp. We aim for a finishing gravity of 1.022-1.025, with a start as close to 1.096 as possible. We have to run off less than normal. We stop the run off at around 13P, so there is plenty left in the mash, but any more 'low' gravity runnings will lower the final gravity of the finished wort.

We add the sugar to the boil, when you add Protafloc. We use finings on all the beers as the protein can inhibit the yeast. We use US05 (shock horror!) for our imperial stout as the pitch rate for the size batch we have is just too much yeast and we rarely have enough to crop to pitch more than 100 L in one go.