

## Gravey's Brewery - Black Lager - 5.1%

### International Dark Lager

Author: Gravey's Brewery

Type: All Grain

IBU : 48 (Tinseth)  
 BU/GU : 0.98  
 Colour : 43 EBC  
 Carbonation : 2.4 CO2-vol

Pre-Boil Gravity : 1.037  
 Original Gravity : 1.049  
 Final Gravity : 1.010

### Fermentables (1.09 kg)

978 g - Pale Ale Malt 4.9 EBC (90%)  
 54 g - Melanoidin 70 EBC (5%)  
 33 g - Carafa Special III 925 EBC (3%)  
 22 g - Chocolate Malt 985 EBC (2%)

### Hops (33 g)

60 min - 6.9 g - Centennial - 9% (35 IBU)  
 ^ Worcester Hop Shop (UK)  
 15 min - 16.1 g - Hallertauer Hersbrucker - 2...  
 ^ The Malt Miller (UK) HOP-06-010

### Hop Stand

10 min hopstand @ 80 °C  
 10 min - 10 g - Hallertauer Hersbrucker - 2.5...

### Miscellaneous

Mash - 1.42 ml - Calcium Chloride (CaCl2) 33...  
 ^ Lot # 115038  
 ^ Brouwstore (NL) 055.035.0  
 Mash - 0.15 g - Canning Salt (NaCl)  
 ^ Albert Heijn (NL)  
 Mash - 0.42 g - Epsom Salt (MgSO4)  
 ^ Lot # /2119000091  
 ^ Brouwstore (NL) 055.027.7  
 Mash - 1.41 g - Gypsum (CaSO4)  
 ^ The Malt Miller (UK) CHE-03-004  
 Mash - 0.4 ml - Lactic Acid 80% 80%  
 ^ Lot # 20200213  
 ^ Brouwstore (NL) 003.002.3  
 Sparge - 0.91 ml - Lactic Acid 80% 80%  
 ^ Lot # 20200213  
 ^ Brouwstore (NL) 003.002.3

### Yeast

0.2 pkg - White Labs Czech Budejovice Lager W...

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

Batch Size : 5 L  
 Boil Size : 7.13 L  
 Post-Boil Vol : 5.33 L

Mash Water : 3.26 L  
 Sparge Water : 5.03 L  
 Boil Time : 60 min  
 Total Water : 8.29 L



43 EBC

Brewhouse Efficiency: 71.8%  
 Mash Efficiency: 73.5%

### Mash Profile

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

### Fermentation Profile

Lager (Standard)  
 11 °C - 18 days - Primary  
 15 °C - 3 days - Primary

### Water Profile

NL Hoofddorp Rein Tap Water (2020-Q3 WQR) (St...  
 Ca 100 Mg 15 Na 75 Cl 139 SO 164

SO/Cl ratio: 1.2  
 Mash pH: 5.38  
 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:

### Recipe Notes

Target: ABV = 5.1 %, IBU = 47, EBC = 39, OG = 1.049, FG = 1.010