

## Brewdog - #310 Clockwork Tangerine (clone) v3 - 4.9%

### Fruit Beer

Author: Biggles Brewery

Type: All Grain

IBU : 23 (Tinseth)  
 Colour : 25 EBC  
 Carbonation : 2.4 CO2-vol

Pre-Boil Gravity : 1.032  
 Original Gravity : 1.043  
 Total Gravity : 1.045  
 Final Gravity : 1.008

### Fermentables (1.1 kg)

1.02 kg - Red X 30 EBC (92.7%)  
 ^ The Malt Miller (UK) MAL-00-020  
 50 g - Carapils 4 EBC (4.6%)  
 ^ The Malt Miller (UK) MAL-01-016  
 30 g - Bottling - Sugar, Table (Sucrose) 2 EB...  
 ^ Albert Heijn (NL)

### Hops (47.3 g)

70 min - 0.9 g - El Dorado (T90) - 14% (7 IBU)  
 ^ The Malt Miller (UK) HOP-05-013  
 70 min - 0.3 g - Citra - 13.8% (2 IBU)  
 ^ Worcesters Hop Shop (UK)  
 10 min - 1.3 g - Ahtanum - 3.8% (1 IBU)  
 ^ Worcesters Hop Shop (UK)  
 10 min - 1.3 g - Chinook (T90) - 11.3% (3 IBU)  
 ^ The Malt Miller (UK) HOP-05-000  
 10 min - 0.5 g - El Dorado (T90) - 14% (2 IBU)  
 ^ The Malt Miller (UK) HOP-05-013  
 10 min - 0.5 g - Citra - 13.8% (1 IBU)  
 ^ Worcesters Hop Shop (UK)

### Hop Stand

15 min hopstand @ 80 °C  
 15 min - 4.1 g - El Dorado (T90) - 14% (3 IBU)  
 15 min - 1.9 g - Mosaic (T90) - 11.8% (1 IBU)  
 15 min - 1.3 g - Chinook (T90) - 11.3% (1 IBU)  
 15 min - 1.2 g - Citra - 13.8% (1 IBU)

### Dry Hops

10 days - 9 g - El Dorado (T90) - 14%  
 10 days - 6.1 g - Citra - 13.8%  
 10 days - 6 g - Mosaic (T90) - 11.8%  
 10 days - 4.6 g - Chinook (T90) - 11.3%  
 10 days - 3.7 g - Ahtanum - 3.8%  
 10 days - 3.7 g - Cascade (Whole) - 5.58%  
 10 days - 1 g - Amarillo (Whole) - 7.7%

### Miscellaneous

Mash - 0.56 g - Epsom Salt (MgSO4)  
 ^ Lot # /2119000091  
 ^ Brouwstore (NL) 055.027.7  
 Mash - 0.2 ml - Lactic Acid 80% 80%  
 ^ Lot # 20200213  
 ^ Brouwstore (NL) 003.002.3  
 Mash - 3 items - pH paper strips 5.2 - 6.8  
 ^ Lot # 20200422/1  
 ^ Brouwstore (NL) 013.075.7  
 60 min - Boil - 0.15 g - Lipohop K  
 ^ The Malt Miller (UK) CH-03-013  
 10 min - Boil - 1 g - Irish Moss

### 01 Brouwpunt 5L (70min) (rev 4)

Batch Size : 5.6 L  
 Boil Size : 8.06 L  
 Post-Boil Vol : 5.96 L

Mash Water : 3.21 L  
 Sparge Water : 6 L  
 Boil Time : 70 min  
 Total Water : 9.21 L

Brewhouse Efficiency: 71.8%  
 Mash Efficiency: 73.3%

### Mash Profile

High fermentability  
 56.3 °C - Strike Temp  
 52 °C - 30 min - Temperature  
 65 °C - 30 min - Temperature  
 72 °C - 30 min - Temperature  
 78 °C - 10 min - Temperature

### Fermentation Profile

Ale  
 18 °C - 4 days - Primary  
 20 °C - 2 days - Primary  
 22 °C - 2 days - Primary  
 10 °C - 6 days - Primary  
 20 °C - 45 days - Conditioning

### Water Profile

NL Hoofddorp Rein Tap Water (2020-Q1 WQR) (St...  
 Ca 41 Mg 15 Na 67 Cl 71 SO 68

SO/Cl ratio: 1  
 Mash pH: 5.4

### Measurements

Mash pH:

Boil Volume:

Pre-Boil Gravity:

Post-Boil Kettle Volume:

Original Gravity:

Fermenter Top-Up:

Fermenter Volume:

Final Gravity:

Bottling Volume:



25 EBC

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## Recipe Notes

Target: ABV = 4.5 %, IBU = 37, EBC = 20

Go easy on the tangerine extract, a little goes a long way and more can be added to the keg later.

Malt is ordered with standard crush @ The Malt Miller (<https://www.themaltmiller.co.uk/>).