

## #45 Robust Porter

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- Gravity **13.6 BLG**
- ABV **5.6 %**
- IBU **34**
- SRM **30.9**
- Style **Robust Porter**

### Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **5 %**
- Size with trub loss **22 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **26.4 liter(s)**

### Mash information

- Mash efficiency **65 %**
- Liquor-to-grist ratio **3.3 liter(s) / kg**
- Mash size **22.1 liter(s)**
- Total mash volume **28.8 liter(s)**

### Steps

- Temp **67 C**, Time **45 min**
- Temp **72 C**, Time **15 min**
- Temp **80 C**, Time **5 min**

### Mash step by step

- Heat up **22.1 liter(s)** of strike water to **74.1C**
- Add grains
- Keep mash **45 min** at **67C**
- Keep mash **15 min** at **72C**
- Keep mash **5 min** at **80C**
- Sparge using **11 liter(s)** of **76C** water or to achieve **26.4 liter(s)** of wort

### Fermentables

| Type  | Name                            | Amount         | Yield | EBC  |
|-------|---------------------------------|----------------|-------|------|
| Grain | Viking Pale Ale malt            | 5.5 kg (82.1%) | 80 %  | 5    |
| Grain | Strzegom Karmel 150             | 0.3 kg (4.5%)  | 75 %  | 150  |
| Grain | Weyermann Specjal W             | 0.3 kg (4.5%)  | 68 %  | 300  |
| Grain | Fawcett - Pale Chocolate        | 0.2 kg (3%)    | 71 %  | 600  |
| Grain | Weyermann - Carafa I            | 0.2 kg (3%)    | 70 %  | 690  |
| Grain | Weyermann - Dehusked Carafa III | 0.2 kg (3%)    | 70 %  | 1024 |

### Hops

| Use for | Name    | Amount | Time   | Alpha acid |
|---------|---------|--------|--------|------------|
| Boil    | Warrior | 5 g    | 60 min | 15.5 %     |
| Boil    | Warrior | 10 g   | 45 min | 15.5 %     |
| Boil    | Warrior | 10 g   | 30 min | 15.5 %     |

### Yeasts

| <b>Name</b>                          | <b>Type</b> | <b>Form</b> | <b>Amount</b> | <b>Laboratory</b> |
|--------------------------------------|-------------|-------------|---------------|-------------------|
| Mangrove Jack's<br>M44 US West Coast | Ale         | Slant       | 200 ml        | Mangrove Jack's   |