

## Robust Porter

- Gravity **16 BLG**
- ABV ---
- IBU **40**
- SRM **37.3**
- Style **Robust Porter**

### Batch size

- Expected quantity of finished beer **23 liter(s)**
- Trub loss **10 %**
- Size with trub loss **25.3 liter(s)**
- Boil time **70 min**
- Evaporation rate **15 %/h**
- Boil size **29.7 liter(s)**

### Mash information

- Mash efficiency **77 %**
- Liquor-to-grist ratio **2.7 liter(s) / kg**
- Mash size **17.7 liter(s)**
- Total mash volume **24.2 liter(s)**

### Steps

- Temp **64 C**, Time **30 min**
- Temp **72 C**, Time **30 min**
- Temp **75 C**, Time **5 min**

### Mash step by step

- Heat up **17.7 liter(s)** of strike water to **72.1C**
- Add grains
- Keep mash **30 min** at **64C**
- Keep mash **30 min** at **72C**
- Keep mash **5 min** at **75C**
- Sparge using **18.6 liter(s)** of **76C** water or to achieve **29.7 liter(s)** of wort

### Fermentables

Type	Name	Amount	Yield	EBC
Grain	Pale ale castle	5 kg (71.9%)	80 %	8
Grain	Czekoladowy Pszeniczny	0.15 kg (2.2%)	74 %	1000
Grain	Płatki jęczmienne	0.4 kg (5.8%)	70 %	4
Grain	Płatki owsiane	0.3 kg (4.3%)	80 %	2
Grain	Jęczmień palony	0.15 kg (2.2%)	55 %	1000
Grain	Chocolate Malt (UK)	0.15 kg (2.2%)	73 %	950
Grain	Castle Cara Ruby	0.2 kg (2.9%)	78 %	50
Grain	Castle Abbey Malt	0.2 kg (2.9%)	75 %	45
Sugar	Brown Sugar, Dark	0.4 kg (5.8%)	100 %	99

### Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Fuggles	30 g	10 min	4 %
Boil	Green Bullet	35 g	60 min	12 %

### Yeasts

Name	Type	Form	Amount	Laboratory
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Mangrove Jack's M03 UK Dark Ale	Ale	Dry	10 g	Mangrove Jack's
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### Extras

Type	Name	Amount	Use for	Time
Fining	mech Irlandzki	10 g	Boil	15 min
Water Agent	gips piwowarski	5 g	Mash	---