

# bitter

- Gravity **11.2 BLG**
- ABV ---
- IBU **47**
- SRM **13.8**
- Style **Special/Best/Premium Bitter**

## Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **5 %**
- Size with trub loss **21 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **25.3 liter(s)**

## Mash information

- Mash efficiency **80 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **11.6 liter(s)**
- Total mash volume **15.4 liter(s)**

## Fermentables

Type	Name	Amount	Yield	EBC
Grain	Briess - Pale Ale Malt	3.2 kg (83.1%)	80 %	6
Grain	crystal	0.3 kg (7.8%)	73.5 %	160
Grain	Biscuit Malt	0.2 kg (5.2%)	80 %	50
Grain	Briess - Caracrysal Wheat Malt	0.15 kg (3.9%)	78 %	190

## Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Challenger	20 g	60 min	7 %
Boil	minstrel	25 g	60 min	4.2 %
Aroma (end of boil)	Fuggles	25 g	15 min	4.5 %
Aroma (end of boil)	minstrel	15 g	10 min	4.2 %
Aroma (end of boil)	Fuggles	20 g	10 min	4.5 %
Aroma (end of boil)	minstrel	10 g	5 min	4.2 %
Aroma (end of boil)	Challenger	25 g	0 min	7 %

## Yeasts

Name	Type	Form	Amount	Laboratory
Mangrove Jack's M79 Burton Union	Ale	Dry	10 g	Mangrove Jack's