

# Bitter

- Gravity **13.8 BLG**
- ABV **5.7 %**
- IBU **61**
- SRM **8**
- Style **Extra Special/Strong Bitter (English Pale Ale)**

## Batch size

- Expected quantity of finished beer **24 liter(s)**
- Trub loss **5 %**
- Size with trub loss **26.4 liter(s)**
- Boil time **60 min**
- Evaporation rate **15 %/h**
- Boil size **33.1 liter(s)**

## Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **21 liter(s)**
- Total mash volume **28 liter(s)**

## Steps

- Temp **66 C**, Time **70 min**

## Mash step by step

- Heat up **21 liter(s)** of strike water to **73.7C**
- Add grains
- Keep mash **70 min** at **66C**
- Sparge using **19.1 liter(s)** of **76C** water or to achieve **33.1 liter(s)** of wort

## Fermentables

| Type  | Name                        | Amount         | Yield | EBC |
|-------|-----------------------------|----------------|-------|-----|
| Grain | Strzegom Pilzneński         | 4.5 kg (64.3%) | 80 %  | 4   |
| Grain | Strzegom Monachijski typ II | 1.5 kg (21.4%) | 79 %  | 22  |
| Grain | Weyermann - Carared         | 1 kg (14.3%)   | 75 %  | 45  |

## Hops

| Use for             | Name       | Amount | Time   | Alpha acid |
|---------------------|------------|--------|--------|------------|
| Mash                | Cascade PL | 100 g  | 30 min | 5 %        |
| Boil                | Chinook PL | 20 g   | 60 min | 8 %        |
| Boil                | Cascade PL | 50 g   | 30 min | 5 %        |
| Aroma (end of boil) | Cascade PL | 150 g  | 15 min | 5 %        |

## Yeasts

| Name                         | Type | Form  | Amount | Laboratory |
|------------------------------|------|-------|--------|------------|
| Lallemand LalBrew London ESB | Ale  | Slant | 350 ml | ---        |