

Bitter

- Gravity **12.6 BLG**
- ABV **5.1 %**
- IBU **34**
- SRM **13.6**
- Style **Special/Best/Premium Bitter**

Batch size

- Expected quantity of finished beer **12 liter(s)**
- Trub loss **5 %**
- Size with trub loss **12.6 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **15.2 liter(s)**

Mash information

- Mash efficiency **60 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **11.1 liter(s)**
- Total mash volume **14.8 liter(s)**

Steps

- Temp **64 C**, Time **15 min**
- Temp **72 C**, Time **45 min**

Mash step by step

- Heat up **11.1 liter(s)** of strike water to **71.3C**
- Add grains
- Keep mash **15 min** at **64C**
- Keep mash **45 min** at **72C**
- Sparge using **7.8 liter(s)** of **76C** water or to achieve **15.2 liter(s)** of wort

Fermentables

| Type | Name | Amount | Yield | EBC |
|-------|------------------------|----------------|-------|-----|
| Grain | Pale Ale (W) | 2 kg (54.1%) | 85 % | 7 |
| Grain | Pilzneński (W) | 1.3 kg (35.1%) | 81 % | 4 |
| Grain | Crystal Medium (Crisp) | 0.3 kg (8.1%) | 72 % | 270 |
| Grain | Abbey (W) | 0.1 kg (2.7%) | 75 % | 45 |

Hops

| Use for | Name | Amount | Time | Alpha acid |
|-----------|-----------------|--------|--------|------------|
| Boil | Magnat PH 2019 | 20 g | 30 min | 12 % |
| Whirlpool | challanger 2020 | 60 g | 0 min | 6.1 % |

Yeasts

| Name | Type | Form | Amount | Laboratory |
|----------------------------|------|-------|--------|-------------|
| Wyeast - 1728 Scottish Ale | Ale | Slant | 200 ml | Wyeast Labs |

Extras

| Type | Name | Amount | Use for | Time |
|-------------|------|--------|---------|--------|
| Water Agent | gips | 3 g | Mash | 60 min |

| | | | | |
|-------------|----------------|-----|------|--------|
| Water Agent | chlorek wapnia | 1 g | Mash | 60 min |
| Fining | whirflock | 1 g | Boil | 5 min |