

Bitter II

- Gravity **12.6 BLG**
- ABV **5.1 %**
- IBU **31**
- SRM **7.3**
- Style **Extra Special/Strong Bitter (English Pale Ale)**

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 **12 %/h**
- Boil size **26.9 liter(s)**

Mash information

- Mash efficiency **70 %**
- Liquor-to-grist ratio **3.5 liter(s) / kg**
- Mash size **18.9 liter(s)**
- Total mash volume **24.3 liter(s)**

Steps

- Temp **64 C**, Time **40 min**
- Temp **72 C**, Time **30 min**

Mash step by step

- Heat up **18.9 liter(s)** of strike water to **70.3C**
- Add grains
- Keep mash **40 min** at **64C**
- Keep mash **30 min** at **72C**
- Sparge using **13.4 liter(s)** of **76C** water or to achieve **26.9 liter(s)** of wort

Fermentables

| Type | Name | Amount | Yield | EBC |
|-------|-----------------------------|----------------|-------|-----|
| Grain | Weyermann - Pale Ale Malt | 4.5 kg (83.3%) | 85 % | 7 |
| Grain | Carahell | 0.3 kg (5.6%) | 77 % | 26 |
| Grain | Weyermann - Carawheat | 0.3 kg (5.6%) | 77 % | 97 |
| Grain | Weyermann - Acidulated Malt | 0.3 kg (5.6%) | 80 % | 6 |

Hops

| Use for | Name | Amount | Time | Alpha acid |
|---------------------|------------|--------|--------|------------|
| Boil | Challenger | 30 g | 60 min | 5.8 % |
| Aroma (end of boil) | Challenger | 30 g | 25 min | 5.8 % |
| Aroma (end of boil) | Challenger | 40 g | 0 min | 5.8 % |

Yeasts

| Name | Type | Form | Amount | Laboratory |
|---------------------------|------|--------|---------|------------|
| WLP013 - London Ale Yeast | Ale | Liquid | 1000 ml | White Labs |

Extras

| Type | Name | Amount | Use for | Time |
|--------|-----------|--------|---------|-------|
| Fining | whirflock | 1 g | Boil | 5 min |