

ful aroma hops cobra

- Gravity **12.6 BLG**
- ABV **5.1 %**
- IBU **55**
- SRM **4**

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 **10 %/h**
- Boil size **26.4 liter(s)**

Mash information

- Mash efficiency **70 %**
- Liquor-to-grist ratio **3.5 liter(s) / kg**
- Mash size **19.3 liter(s)**
- Total mash volume **24.8 liter(s)**

Steps

- Temp **40 C**, Time **0 min**
- Temp **61 C**, Time **15 min**
- Temp **71 C**, Time **45 min**

Mash step by step

- Heat up **19.3 liter(s)** of strike water to **42.8C**
- Add grains
- Keep mash **0 min** at **40C**
- Keep mash **15 min** at **61C**
- Keep mash **45 min** at **71C**
- Sparge using **12.6 liter(s)** of **76C** water or to achieve **26.4 liter(s)** of wort

Fermentables

| Type | Name | Amount | Yield | EBC |
|-------|---------------------------|----------------|-------|-----|
| Grain | Pilzneński | 4.9 kg (89.1%) | 81 % | 4 |
| Grain | Weyermann - Pale Ale Malt | 0.6 kg (10.9%) | 85 % | 7 |

Hops

| Use for | Name | Amount | Time | Alpha acid |
|---------------------|-------------------|--------|----------|------------|
| Boil | lunga | 30 g | 90 min | 11 % |
| Boil | Puławski | 40 g | 45 min | 4.3 % |
| Aroma (end of boil) | Lublin (Lubelski) | 13 g | 5 min | 4 % |
| Dry Hop | Lublin (Lubelski) | 13 g | 3 day(s) | 4 % |

Yeasts

| Name | Type | Form | Amount | Laboratory |
|-------|------|------|--------|------------|
| us-05 | Ale | Dry | 11.5 g | saflager |