

koza

- Gravity **16.4 BLG**
- ABV **6.9 %**
- IBU **24**
- SRM **19.3**
- Style **Traditional Bock**

Batch size

- Expected quantity of finished beer **10 liter(s)**
- Trub loss **5 %**
- Size with trub loss **10.5 liter(s)**
- Boil time **80 min**
- Evaporation rate **10 %/h**
- Boil size **13 liter(s)**

Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3.3 liter(s) / kg**
- Mash size **10.9 liter(s)**
- Total mash volume **14.2 liter(s)**

Steps

- Temp **51 C**, Time **15 min**
- Temp **63 C**, Time **15 min**
- Temp **68 C**, Time **45 min**
- Temp **72 C**, Time **10 min**
- Temp **78 C**, Time **10 min**

Mash step by step

- Heat up **10.9 liter(s)** of strike water to **55.7C**
- Add grains
- Keep mash **15 min** at **51C**
- Keep mash **15 min** at **63C**
- Keep mash **45 min** at **68C**
- Keep mash **10 min** at **72C**
- Keep mash **10 min** at **78C**
- Sparge using **5.4 liter(s)** of **76C** water or to achieve **13 liter(s)** of wort

Fermentables

| Type | Name | Amount | Yield | EBC |
|-------|--|---------------|-------|-----|
| Grain | Pilzneński | 2 kg (60.6%) | 81 % | 4 |
| Grain | Monachijski typ II 20-25 EBC Weyermann | 1 kg (30.3%) | 80 % | 20 |
| Grain | Viking Wędzony torfem | 0.1 kg (3%) | 81 % | 7 |
| Grain | Strzegom Karmel 600 | 0.2 kg (6.1%) | 68 % | 601 |

Hops

| Use for | Name | Amount | Time | Alpha acid |
|---------|---------------------|--------|--------|------------|
| Boil | Hallertau Tradition | 10 g | 60 min | 5 % |
| Boil | Marynka | 10 g | 30 min | 10 % |

Yeasts

| Name | Type | Form | Amount | Laboratory |
|--------------|-------|------|--------|------------|
| BrewGO Lager | Lager | Dry | 11 g | Browin |