

Kozel czarny

- Gravity **11.4 BLG**
- ABV **4.6 %**
- IBU **27**
- SRM **18.7**
- 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 **90 min**
- Evaporation rate **10 %/h**
- Boil size **13.2 liter(s)**

Mash information

- Mash efficiency **72 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **7.2 liter(s)**
- Total mash volume **9.6 liter(s)**

Steps

- Temp **63 C**, Time **15 min**
- Temp **73 C**, Time **60 min**
- Temp **78 C**, Time **10 min**

Mash step by step

- Heat up **7.2 liter(s)** of strike water to **70.2C**
- Add grains
- Keep mash **15 min** at **63C**
- Keep mash **60 min** at **73C**
- Keep mash **10 min** at **78C**
- Sparge using **8.4 liter(s)** of **76C** water or to achieve **13.2 liter(s)** of wort

Fermentables

| Type | Name | Amount | Yield | EBC |
|-------|----------------------------------|----------------|-------|-----|
| Grain | Pilzneński | 1.5 kg (62.5%) | 81 % | 4 |
| Grain | Strzegom Monachijski typ II | 0.5 kg (20.8%) | 79 % | 22 |
| Grain | Słód Caramunich Typ II Weyermann | 0.3 kg (12.5%) | 73 % | 120 |
| Grain | Weyermann - Carafa II | 0.1 kg (4.2%) | 70 % | 900 |

Hops

| Use for | Name | Amount | Time | Alpha acid |
|---------|-------------------|--------|--------|------------|
| Boil | Lublin (Lubelski) | 20 g | 60 min | 4 % |
| Boil | Tradition | 10 g | 20 min | 6 % |

Yeasts

| Name | Type | Form | Amount | Laboratory |
|----------------------------|-------|------|--------|------------|
| Gozdawa - W35 German Lager | Lager | Dry | 10 g | Gozdawa |
| Gęstwa Gozdawa W 35 | | | | |