

## 3D. Czech Dark Lager ( tmavé výčepní )

- Gravity **11.2 BLG**
- ABV **4.5 %**
- IBU **24**
- SRM **19.5**
- Style **Dark American Lager**

### Batch size

- Expected quantity of finished beer **17 liter(s)**
- Trub loss **10 %**
- Size with trub loss **18.7 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **22.4 liter(s)**

### Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **4.25 liter(s) / kg**
- Mash size **17 liter(s)**
- Total mash volume **21 liter(s)**

### Steps

- Temp **66.5 C**, Time **60 min**

### Mash step by step

- Heat up **17 liter(s)** of strike water to **72C**
- Add grains
- Keep mash **60 min** at **66.5C**
- Sparge using **9.4 liter(s)** of **76C** water or to achieve **22.4 liter(s)** of wort

### Fermentables

| Type  | Name                           | Amount         | Yield | EBC  |
|-------|--------------------------------|----------------|-------|------|
| Grain | Strzegom Pilzneński            | 3 kg (75%)     | 80 %  | 4    |
| Grain | Strzegom Monachijski typ I     | 0.5 kg (12.5%) | 79 %  | 16   |
| Grain | Strzegom Karmel 150            | 0.3 kg (7.5%)  | 75 %  | 150  |
| Grain | Weyermann - Carafa III special | 0.2 kg (5%)    | 70 %  | 1024 |

### Hops

| Use for | Name   | Amount | Time   | Alpha acid |
|---------|--------|--------|--------|------------|
| Boil    | Magnum | 15 g   | 60 min | 12.1 %     |

### Yeasts

| Name      | Type | Form  | Amount | Laboratory |
|-----------|------|-------|--------|------------|
| novalager | Ale  | Slant | 100 ml | ---        |

### Extras

| Type        | Name  | Amount | Use for | Time   |
|-------------|-------|--------|---------|--------|
| Water Agent | CaCO3 | 3 g    | Boil    | 60 min |
| Water Agent | CaCl2 | 1 g    | Boil    | 60 min |