

Style: 7A. Vienna Lager

Brewer: Beer-N-BBQ by Larry
Brew Date: February 19, 2023Brew System: Blichmann BrewEasy, 10 Gal. Electric, 75% Power
Chiller: JaDeD Scylla Fermenter(s): BrewBuilt X2 UNI - 14 gal

Grain Bill, Adjuncts, & Sugars		
Type	Qty lb	% of Bill
Vienna Malt: Vienna Malt (Weyermann)	14.00	62.9%
Pale Malt: Brewers Malt, 2-row (Briess)	6.00	27.0%
Caramel Malt: CARAMUNICH® Type II (Weyermann)	2.00	9.0%
Caramel Malt: CARAFA Type II® (Weyermann)	0.25	1.1%

Recipe Outputs		BJCP Guide	
	Design	Actual	Min Max
Extract Eff.:	72.0%	77.0%	
Brewhouse Eff.:	66.3%	67.6%	
O.G.:	1.050	1.047	1.048 1.055
F.G.:	1.010	1.010	1.010 1.014
Ferm Vol:	43.0	46.4	
Batch Vol:	40.0	38.0	
App Atten:	80.0%	78.2%	
IBUs:	22	22	18 30
ABV:	5.2%	4.8%	4.7% 5.5%
SRM:	13.0	12	9 15
BU:GU Ratio:	0.44	0.47	
Calories per US Pint:	228		

Water Information		
Chicago (Lake Michigan)		
ppm (mg/L)	Orig.	Adj.
Calcium	37	61
Magnesium	12	19
Sodium	9	9
Chloride	16	59
Sulfate	25	55
Alkalinity	102	
Cl/SO ₄ Ratio	0.64	1.06

Total Water Required									
Design	58.0	qt	46.5	°F	Actual	60.0	qt	46.5	°F
Mash Schedule & Water Infusions									
Step #	Schedule		Strike Water (Preheated Tun)				Mash	Mash pH	
	Temp	Time min	Design		Actual		Actual		
	°F		qt	°F	qt	°F	°F		
1	133	15	33.1	141	60.0	46.5	133.0	5.3	
2	148	30					146.0		
3	160	15					158.0		
4	170	10					168.0		
5									

Hop Bill & Schedule					
Species	Type	Alpha (%)	Qty oz	AAU	Time (min)
Mt. Hood	Pellet	5.3	2.00	10.6	60
Hallertauer Mittelfrüh (German)	Pellet	4.1	1.00	4.1	10
Tettnanger (German)	Pellet	3.9	1.00	3.9	10



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Water Additions (grams)		
	Mash	Sparge
Gypsum	0.0	0.0
Cal Chloride	5.0	0.0
Epsom Salt	4.4	0.0
Slaked Lime	0.0	0.0
Baking Soda	0.0	0.0
Chalk	0.0	0.0
Lactic Acid	8	mL

Yeast Information	
Lallemand	
Diamond Lager	
Ferm Temp:	50-59 °F

Forced Carbonation		
CO2 Volume	2.5	
Temperature	38.0	°F
Pressure	11.2	PSI

Lautering Process (Wort Separation)							
		Design		Actual		Corrected	
		qt	°F	qt	°F	qt	°F
No Sparge	Sparge Water Req'd	26.1	170.0				170.0
	-	-	-				
	-	-	-				
	-	-	-				
	Wort Collected	49.3	170.0	51.2	205.5	50.5	170.0
	Grain Absorb Rate	0.38	qt/lb	0.41	qt/lb		
Grains Only Contribution	S.G.	Hydrometer 1.047		1.049	70.3	°F	1.049
		Refractometer 11.8	° Brix		° Brix		
	Mash Extract Efficiency	72%		77.0%	Hydrometer		
					Refractometer		

Boil Process							
		Design		Actual		Corrected	
Boil	Start Volume	50.0	qt	53.8	qt		
	Time	60	min	60	min		
	End Volume (w/ IC)	48.2	qt	50.0	qt		
	Boil off Rate	3.8	qt/hr	3.8	qt/hr		
Post Boil	Chilled Volume	44.6	qt	48.0	qt	48.0	qt
		75	°F	70.0	°F	75	°F
O.G.	Hydrometer	1.050		1.049	54.3	°F	1.047
	Refractometer	12.5			° Brix		

Fermentation & Clarification							
		Design		Actual		Corrected	
		qt	°F	qt	°F		
	Into Fermenter	43.0	75.0	46.4	65.0		
	Into Bright Tank or Aging Vessel			0.0	0.0		
G L	Hydrometer	1.010		1.011	65.9	°F	1.010
	Refractometer	2.6	° Brix		° Brix		
Packaged Beer		40.0	qt	38.0	qt		

NOTES:

- Brew Day: Shouldn't have added extra 2.5 qt in hindsight due to lower than expected boil off rate.
- Fermentation: Pressure ferment ~2 weeks under ~2 psi pressure at recommended fermentation temperature (~53 F) of yeast.
- Cold Crash: Chill to ~38 F for two days.
- Rack to keg(s) via closed transfer and filtered using 1 micron filter.
- Carbonate then pour off sediment.
- Hop substitutes: Tettnang, Perle, Tradition, Mt. Hood, Crystal, Ultra, Vanguard.