

Style: 1B. American Lager

Brewer: Beer-N-BBQ by Larry  
Brew Date: July 2, 2022

Brew System: Spike Solo, 66% Power  
Chiller: JaDeD Concentric Hydra w ElectricChair  
Fermenter(s): FK 35L Snubnose, Spike Flex+

Grain Bill, Adjuncts, & Sugars		
Type	Qty lb	% of Bill
Pale Malt: Brewers Malt, 2-row (Briess)	16.00	69.6%
Rice, Brown (Requires Gelatinization)	6.00	26.1%
Rice Hulls	1.00	4.3%

Recipe Outputs		BJCP Guide	
Design	Actual	Min	Max
Extract Eff.:	75.0%	66.8%	
Brewhouse Eff.:	65.5%	#VALUE!	
O.G.:	1.045	1.050	1.040 1.050
F.G.:	1.008	1.005	1.004 1.010
Ferm Vol.:	45.0		
Batch Vol.:	40.0	40.0	
App Atten.:	83.0%	90.8%	
IBUs:	12	13	8 18
ABV:	4.8%	5.9%	4.2% 5.3%
SRM:	3	3	2 4
Calories per US Pint:	204		

Water Information		
Chicago (Lake Michigan)		
ppm (mg/L)	Orig.	Adj.
Calcium	37	41
Magnesium	12	12
Sodium	9	9
Chloride	16	24
Sulfate	25	25
Alkalinity	102	
Cl/SO <sub>4</sub> Ratio	0.64	0.96

Total Water Required									
Design	63.4	qt	68.0	°F	Actual	61.0	qt	68.0	°F
Mash Schedule & Water Infusions									
Step #	Temp °F	Time min	Strike Water (Preheated Tun)			Mash Actual °F	Mash pH		
			Design qt	°F	qt		°F	Design	Actual
1	150	60	64.7	156		150.0	5.5	5.56	
2									
3									
4									
5									

Hop Bill & Schedule					
Species	Type	Alpha (%)	Qty oz	AAU	Time (min)
Crystal	Pellet	3.9	1.50	5.9	60
Crystal	Pellet	3.9	1.50	5.9	10



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Water Additions (grams)		
	Mash	Sparge
Gypsum	0.0	0.0
Cal Chloride	1.0	0.0
Epson Salt	0.0	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	
Fermentis	
SafLager W-34/70	
Ferm Temp:	54-59 °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	0.0	150.0				150.0
	-	-	-				
	-	-	-				
	-	-	-				
	Wort Collected	55.7	150.0	51.0	200.0	50.1	150.0
Grains Only Contribution	Grain Absorb Rate	0.35	qt/lb		qt/lb		
	S.G. Hydrometer	1.042		1.041	68.0	°F	1.041
	Refractometer	10.4	° Brix		° Brix		
	Mash Extract Efficiency	75%		66.8%		Hydrometer	
					Refractometer		

Boil Process							
		Design		Actual		Corrected	
		qt	°F	qt	°F	qt	°F
Boil	Start Volume	56.9	qt	55.0	qt		
	Time	60	min	60	min		
	End Volume (w/ IC)	54.1	qt	51.0	qt		
	Boil off Rate	5.0	qt/hr	4.0	qt/hr		
Post Boil	Chilled Volume	50.0	qt	47.0	qt	47.0	qt
		75	°F	80.0	°F	75	°F
O.G.	Hydrometer	1.045		1.050	68.0	°F	1.050
	Refractometer	11.1			° Brix		

Fermentation & Clarification							
		Design		Actual		Corrected	
		qt	°F	qt	°F	qt	°F
Into Fermenter		45.0	75.0				
Into Bright Tank or Aging Vessel							
F.G.	Hydrometer	1.008		1.005	68.0	°F	1.005
	Refractometer	1.9	° Brix		° Brix		
Packaged Beer		40.0	qt	40.0	qt		

Other Ingredients/Additions		
	Amount	When
Whirlfloc tablets	2	15 min
Yeast Nutrient	1 tsp	15 min
Dry yeast (See yeast info for strain) for 1st fermenter	1 pkg	pitch
Wyeast 2007 Pilsen Lager Yeast for 2nd fermenter	1 pkg	pitch

NOTES:

- Perform a cereal mash for rice. Rate: ~2 qt/lb at 154-172 (158 target) deg F for 15-20 minutes. Include ~20% by weight of crushed base malt. (e.g. 6 lb rice = 1.2 lb malt). Boil gently for 30 minutes or until gelatinized. Cool as necessary before adding to main mash to achieve target mash temperature.
- Pressure ferment ~2 weeks under 15 psi pressure at room temperature (~70 deg F).
- Rack to keg(s) via closed transfer if possible and chill.
- Gelatin fine in kegs: Rate 1g gelatin per gallon of beer: Dissolve in 2 oz boiled but cooled dechlorinated water per gram gelatin. Stir. Heat to 160 deg F. Add to kegs and agitate. Purge headspace with CO2.
- Carbonate then pour off sediment.
- Brew Day note: Rice absorbed more water than expected. Also more evaporation loss from cereal mash. Added 1 additional gallon of water at boil. Also, mistakenly added 1.25 lb too much base malt.