AMHYDRO
growing solutions since 1984

Get Growing NFT 15K
Commercial Bundle

Get Growing! **Commercial Bundle**   1/1/18

Hydroponics System:	**NFT 15K** **Luminosa**	
> Plant Sites:	**15,120**	Total sites
> Production:	3,753	Plants/week (6 week cycle)
> Configuration:	7,560	Finishing (2wks - 50% of NFT sites
	7,560	Nursery (2wks - 50% of NFT sites
	11,040	Propagation (2 wks. - All Propagation Sites)
> Green House:	**30'x144'**	Standard size (4,320sq ft.)

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Hydroponics NFT 15K Kit:

	GroClean NFT Channel Kit:	420	Gro Clean NFT Channel (12' Finishing Sections - HDPE)
		105	Gro Clean NFT Channel (12' Nursery Sections - HDPE)
	Table Frames/Benching Kit:	25	10' Custom Table Frames
	Collectors	25	10' Covered Collector
	ManifoldsF	21	10' Finishing Manifolds
	ManifoldsN	3	10' Nursery Manifolds
		1	10' Hybrid Manifolds
	Pumps	2	1.5 HP pump
	Reservoir	1	1800gal Cistern w 15in Manhole Extension
	Plumbing	1	PVC package to plumb in system & reservoir
		1	Water Meter
	Nutrient/H2O Control Kit:	1	IntelliDose Complete System w/Triple Peristaltic Pump
		1	pH probe
		1	EC/pH Handheld Meter
	Propagation Kit:	1	(2) Get Seeding 10 Tray Propagation system w/bottom heat package
		1	Vacuum Seeder
		28	Lighting for propagation & nursery
	Other Important Items Kit:	1	30gal w/Lid Nutrient Stock Tanks Kit
		1	5gal Acid Tank Kit
		4	Channel Scrub Brush and handle
		1	NFT tool kit
		48	Flexy drain (ft)
		1	Kerrick float valve kit
		1	Venturi Tee
	AmHydro Services	3	Days supervision of AmHydro system installation
		1	Plumbing design and plans
		1	Electrical panel with mounted controllers
		1	Annual Grower Support
		2	1 day site visit by AmHydro consultant
		1	Packing and Freight to customer
		3	Custom shipping Pallets
		1	Consulting for seed varieties and nutrients
		4	Tee-Shirts
	Greenhouse	1	Green house structure - includes heater, vent motors, HAF fans, doors.
		1	Environmental Controller (StepUP)
		1	CO2 burner & controller
		2	Ground Cover w/ anchor pins-15x300 roll
	Pro Grower Subscription (3 months)	7	Seeds Variety
		7	Oasis LC1 5231 (Thin Cut)
		12	AmHydro Plant Specific Nutrients
		3	Essential Plus 1gal
		2	Buffer Solution pH 4&7 16oz
		2	Calibration Solution 27.7 16oz
		8	pH Down 10% 1 gal
		6	Plastic 'stakes' for labeling (6000 total stakes)
		3	Water Testing

Get Growing! **Commercial Bundle TOTAL:** $ 165,000.00

Not Included in this package. Owner responsible for:
> **Capital investment - $165,000+**
> **Site prep & construction for the greenhouse which includes:**
>> 5,000+ sqft of space and building permits (if required)
>> Utilities brought to the greenhouse site
>> Level ground/ area for greenhouse (concrete foundation and floor recommended)
>> Construction of greenhouse and AmHydro NFT system
>> Ability to dig hole for the 1,800 gallon reservoir (approx. 16'x9'x4.5')
>> 4-5 laborers to construct greenhouse (local tradesmen may be needed)
>> Scissor lift and/or boom truck to raise greenhouse arches and attach poly-carb sheets
> **Travel expenses for AmHydro growing consultant**
> **Travel expenses for AmHydro Install Supervisor**

Finishing Tables

Nursery Tables

Propagation Tables

NFT System Specifications

Harvest:

Crop Turn (CTT) - A number determined by harvested plants per year, per finishing plant site.

13 CTT - 1,890 plants per week (8 week harvest cycle)

17 CTT - 2,520 plants per week (7 week harvest cycle)

26 CTT - 3,780 plants per week (6 week harvest cycle)
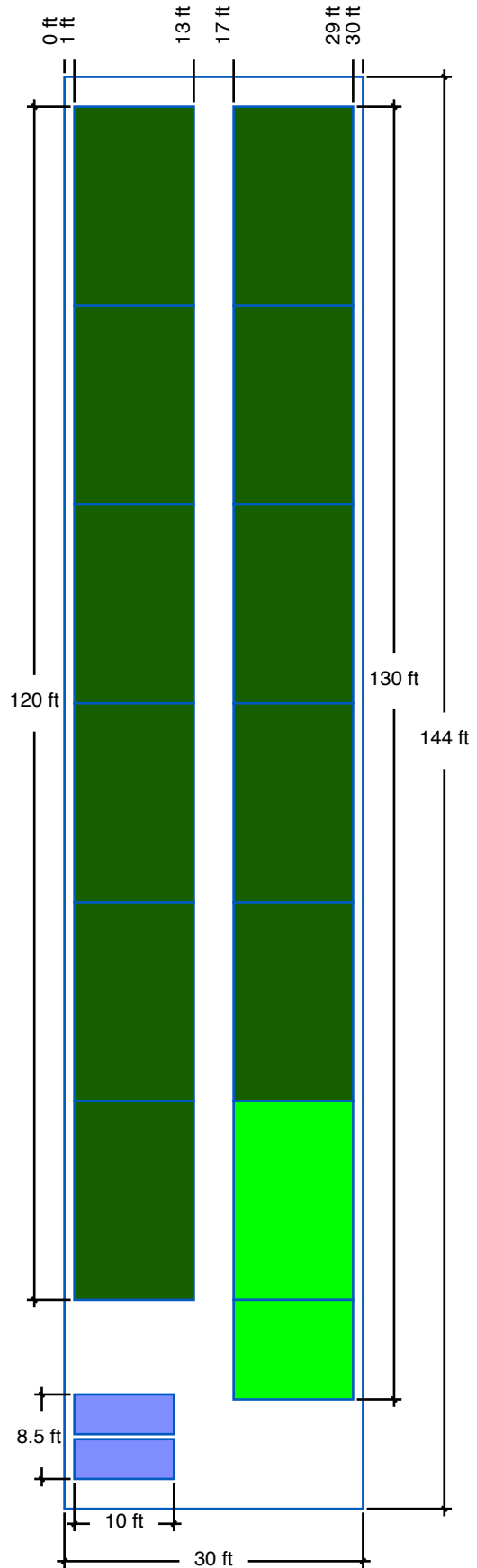
System:

Finishing sites: 7,560 (420 channels)

Nursery sites: 7,560 (105 channels)

Propagation sites: 11,040 (20 trays)

Reservoir size: 1,800 gallons

Greenhouse square foot: 4,320

NFT growing area square foot: 3,000

AmHydro's Get Growing - Commercial 15K Bundle

System Specifications

Total Square feet of NFT system: — 3,000
Lineal feet of NFT system (Gallons): — 250
Water usage per day (Gallons): — 710
Recommended reservoir size: — 1,800
Greenhouse size: — 30x144
Number of bays: — 1
Number of finishing plant sites: — 7,560
Number of nursery plant sites: — 7,560
Number of propagation plant sites: — 11,040

Projected harvest numbers per week

13 Crop turns per year (8 week seed to harvest): — 1,890
17.33 Crop turns per year (7 week seed to harvest): — 2,520
26 Crop turns per year (6 week seed to harvest): — 3,780

NFT System Details

Our AmHydro Pro NFT system has been used in the field for over 30 years and has been refined for ease of use, longevity and versatility.

Each NFT system is comprised of 10 foot modules that connect together to make desired table length. The *15K NFT System* uses 25 of these 10 foot modules.

Each AmHydro Pro NFT module is made from *five* components that have been designed and refined over 30 years.

TABLE FRAME - Table frames are made from 10ga to 18ga galvanized steel that come pre-drilled for ease of assembly. Table frames are put together using a 5/16" hex bit, power drill and speed square.

FEEDER - Each feeder manifold feeds a 10' section of table and is made from virgin LDPE plastic. These manifolds feed from the center for even pressure. Each manifold comes with a clean-out fitting on each end for maintenance and is controlled with a heavy duty PVC ball valve. Our leak-proof AmHydro grommet secures a 1/4" micro-tube for even delivery to each AmHydro channel. No glue is required when assembling feeder for ease of assembly and maintenance.

COLLECTOR - Each covered collector returns nutrient water from a 10' section of table and is made from duel-wall LDPE pipe. Collectors have a hinged cover to keep sunlight off draining end of channels. No glue is required when assembling collector for ease of assembly and maintenance. Our AmHydro Drip Cap is attached, in conjunction with each collector, to eliminate leaks.

FINISHING CHANNEL - Finishing channels are 144" long and come with 1.75" holes on 7.75" center's. There are 18 holes per channel. Our channels are made from 100% virgin FDA approved HDPE.

NURSERY CHANNEL - Nursery channels are 144" long and come with 1.6875" holes on 2" center's. There are 72 holes per channel. These channels are also made from 100% virgin FDA approved HDPE. Both channel types are ready to use, right off the pallet.

Tank House Components

The tank house components are the heart of the NFT system. These components can be housed inside the working greenhouse or in a separate building we term as head house. We can source the main reservoir, 1,800 gallon - below grade, but usually recommend the grower to source due to shipping requirements.

INTELLIDOSE CONTROLLER (ID) - The ID takes care of your reservoir so you don't have to. This unit will monitor the pH and Nutrient concentration (EC/CF) of your working solution and make the necessary adjustments.

STOCK TANKS - Nutrient stock tanks are made from thick HDPE and will last a lifetime. pH stock tank is made to withstand breakdown form acidity of pH adjuster.

PUMP - The *15K NFT System* uses (1) 1.5HP pump. We use Max-E-Pro centrifugal pumps made by Sta-Rite for durability and longevity. We always include an extra pump.

FLOAT VALVE AND WATER METER - Float valve is a 3/4", 37 GPM Kerick valve and the water meter measures how much water your system is using per day/week.

Propagation System

We have a handful of propagation systems. The *15K NFT System* utilizes the 812 propagation system. This system is the perfect size and most importantly, provides the necessary number of propagation sites to feed your nursery channels. All of our propagation systems are recirculating and use our commercial grade AmHydro propagation trays (cMPT). The 812 Propagation System is a stand-alone system that come complete with everything required

The propagation stage is one of the most important as it sets the pace for your harvest times. Strong seedlings make for quicker crop turns. The *15K NFT System* comes with a bottom heat package to keep your seedling at optimum temperature.

Growing Supplies

NUTRIENTS - Our mineral fertilizers are manufactured right here at AmHydro and have been used in the field for over 25 years. Our two-part powders are made from the purest commercial grade minerals that follow California's strict guidelines on standards and quality. The *15K NFT System* comes with a 3 month supply (12 cases).

GROWING MEDIUM - We offer exclusively Oasis propagation cubes manufacture my Smithers Oasis. We have found them to be the most reliable and consistent and the easiest to work with. The *15K NFT System* comes with 1" thin-cut Oasis.

BUFFERS - Standard 4&7 buffers for calibrating pH probes on ID controllers and hand-held meters as well as standard 27.7 calibration solution for CF probes.

pH ADJUSTER - Standard food grade 10% pH down and pH up.

WATER TESTING - The *15K NFT System* comes with (3) water tests. One will be used in the very beginning to see if water treatment is necessary. The remaining (2) are for monitoring the nutrient balance within the recirculating NFT system.

SEEDS - The *15K NFT System* comes with high quality, pelleted seeds. We provide enough for 3 months supply.

Growers Support - The AmHydro Advantage™

All AmHydro systems are designed and manufactured to be the best in the industry. The equipment purchase, however, is only a first step in setting up a successful hydroponics business. That is why the *15K NFT System* come with AmHydro Advantage™, a specialized service and support program aimed at giving you the information you need.

Grower/Technical Support: American Hydroponics provides the grower with growing and technical support regarding any phase of the Hydroponic System for a twelve-month period commencing the date the customer receives system. Grower and technical support will be provided through faxes, email, Skype, and/or telephone communication. Our support covers installation assistance of the hydroponic system and includes advice/recommendations related to seed selection, propagation techniques, crop turn strategy, ergonomics, nutrient/water/tissue analysis, problem resolution, environmental control, how to anticipate and address upcoming climate change adjustments, packaging and general marketing strategies. Our goal is to maximize crop production at every stage and assist growers in becoming competent and successful in their growing operation. Extra charges for site visit, travel, custom parts and systems.

Luminosa Greenhouse Model LD

SCOPE OF PROPOSAL: This proposal is for the supply of a Harnois Luminosa gutter style Greenhouse, complete with pre-engineered structure with the following specifications and scope of work:

Number of Buildings	1 Bay - gutter connected
Building Style	Nordique
Width	30 feet
Gutter Height	12 feet
Length	144 feet
Area	4,320 square feet
Arch Spacing	6 feet
Post Spacing	12 feet

Design

- Commercial Greenhouses generally fall under the greenhouse section of the Farm Building Code section of the international Building Code.

- The Luminosa Greenhouse exceeds the requirements of this section of code.

- The Luminosa with he oval arches spaced every 6 feet, has the following load specs:
  - Max Snow Load: 35 pounds per foot squared
  - Max Wind Load: 115 MPH - 3 second gusts
  - Design loads as per ASCE7-10 (American Society of Civil Engineers) 2010

- If the greenhouses will be used for other purposes other than the growing of commercial plants, we should be notified. Other applications such as storage, retail garden center, etc., where the general public has access, might require higher load requirements.

- If you have any doubts about the load requirements that your greenhouse will need to conform to, you should contact your local authorities (Regional district/ building inspector/ City Hall etc.)

The Luminosa Gothic shape provides the following benefits

- Simpler and easier to build; Columns in two parts, minimize the number of bolts.

- Steel protected inside and out after drilling with "Galvalume" and clear coated, no black markings on coverings.

- Stronger 1 piece gutter support.

- More width options, 14 foot, 16 foot, 18 foot , 21 foot - 4 inch, 24 foot, 25 foot, 28 foot, 30 foot and 31 foot - 6 inch and 36 foot.

- More snow and wind load options (10 pounds to 15 pounds per square foot and higher).

- Crop support for specific crop: 1-1/4 inch or 1-3/8 inch, webbed supports, energy truss.

- Standard gutter Heights: 10 foot, 12 foot, 14 foot, 16 foot, 18 foot.

- New forty five degree top bay for more light, less dripping on crop.

- Luminosa with larger oval tube (2-3/4 inches by 1-5/8 inches or 2 inches x 3-9/16 inches) offers higher snow load capacities with better light transmission and less shadowing.

- Bolt fasteners: Alkaline, zinc/nickel for high strength/corrosion resistant performance.

Foundation

- STANDARD FOUNDATION KITS: Anchor 3 1/2 inch square post, 11 gauge spaced 12 foot c/c base plate for existing concrete, Installed with Hilti anchor bolts.

Structural Components

- ONE 30 FOOT WIDE HIGH PROFILE 45 DEGREE TOP BAY FOR 8MM DOUBLE-WALLED POLYCARBONATE COVERING: Including oval tube ribs (2 inch by 3-9/16 inch) spaced every 6 foot, galvanized steel sub structure, aluminum base and cap mouldings, diagonals for each corner, cross ties, nuts, bolts and attachments.

- TWO SIDE WALLS WITH GUTTERS FOR 8MM DOUBLE-WALLED POLYCARBONATE COVERING: Including 3-1/2 inch square post - 11 gauge and hot dipped, spaced every 12 feet apart, 12 gauge gutters with gutter/post supports, horizontal purlins (1.25 inch by 1.25 inch), steel baseboard, aluminum profiles, nuts, bolts and attachment X-bracing, gutter drain, nuts, bolts and attachments.

- TWO GABLE ENDS FOR 8MM DOUBLE-WALLED POLYCARBONATE COVERING: Including vertical oval tube posts with anchor tubes, horizontal purlins (1.25 inch by 1.25 inch), steel baseboard, aluminum profiles, nuts, bolts and attachments, top vinyl flashing.

- TWO HEAVY DUTY GUTTER TO END WALL BRACING: Rectangular tube bracing, allows for end wall support under crop to wind loads.

Doors

- ONE EACH DOUBLE SLIDING DOOR KITS: for steel end walls, 8 foot wide by 8 foot tall, consisting of two sliding doors, of galvanized steel construction, complete with track, supports, stoppers, wheels, and all nuts and bolts.

- ONE SERVICE DOOR: Overall dimension: 35-/8 inches wide by 82-38 inches tall insulated door. With frame, hinges, handle and key locking hardware.

Side wall vent panel

- ONE CONTINUOUS 4 FOOT WIDE SIDEWALL VENT SYSTEM: Aluminum top and bottom sills and rails, galvanized vertical steel stiffeners, screws and enclosure for glazing. Double toothed steel rack and Pinion's, including couplings and shaft brackets. Includes coupling and shaft hangers and stop collars.

- ONE MOTORIZED KIT: for vent, includes Ridder Motor/gearbox, relay kit and motor starter.

Single roof vent panel

- ONE CONTINUOUS 4 FOOT WIDE RIDGE VENT PANEL: Aluminum top/bottom sills in rails, galvanized vertical steel stiffeners, screws and closures for glazing. Double tooth steel rack and Pinion's, including couplings and shaft brackets. Includes couplings, shaft hangers and stop collars.

- ONE MOTORIZATION KIT: for ridge vent, includes Ridder motor/gearbox, relay kit and motor starter

Covering materials

- ROOF SECTION: Lexan 8mm twin-walled polycarbonate glazing with anti-condensate, as required to cover one complete roof with venting panel.

- END WALLS: Lexan 8mm twin-walled polycarbonate glazing with anti-condensate, as required to cover two complete end walls.

- SIDE WALLS: Lexan 8mm twin-walled polycarbonate glazing with anti-condensate, as required to cover two complete side walls.

Equipment

- MODINE UNIT HEATERS: Temperature design needed before recommending size of heater unit

- 4 HAF AIR DISTRIBUTION SYSTEM: 20 inch diameter, horizontal air flow fans, 3 speed - high velocity.

- OVER HEAD THERMAL/SHADE CURTAINS: using BJ85 with the following characteristics, 85% shading, 57% energy saving, 15% light transmission, UV treated. This is a truss to truss system with good air tightness along the truss and on the sides. Motors and straight racks are controlling the movement of the shade curtain.

Please read carefully

- Not included in the above quotation: erection, controls, site preparation, post hole digging, foundation cement, electrical and gas hookups, permits, unloading, etc...