



GALAMB AGRO
Ingeniería para Sistemas de Riego
www.galamb.com.ar

Dealer : Galamb Agro SRL
www.galamb.com.ar

Customer : Tirolsa SA
Eq. 1A

Printout No: 4856



**** Specify Senninger UP3 Nozzles when ordering ****

GALAMB AGRO SRL

Ingeniería en Sistemas de Riego

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Tel Fijo: 011-2201-7549

Ing. German Gallo (011) 5517-3033

Ing. Juan Amboldi (011) 3125-3111

Pablo Ritrovatto (011) 6535-3361

info@galamb.com.ar

Date: 08/09/2019

Chart No: 4856

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Dealer:

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Customer:

Tirolesa SA
Eq. 1A

Comments:

Machine

Mfg: Lindsay
Flow: 280.00 m³/h
Pivot Pressure: 40.92 psi
Base Press: 45.48 psi
End Pressure: 25.00 psi
Spacing: Span dependent
Length: 498.80 m
m³h / Hect: 3.19 m³/h
Average Drop: 2.7 m
End Gun: KOMET101 18deg .79
End Gun Throw: 40.0 m
Booster pump: 130 gpm

Pipes

C Factor: 140
Pipe 1: 240.1 m, 197.66 mm ID
Pipe 2: 245.1 m, 162.43 mm ID
Pipe 3: 13.7 m, 136.37 mm ID

Elevation

Difference above(+) pivot 0.00
Difference below(-) pivot 0.00
Elevation Rise included in calculations

Sprinklers

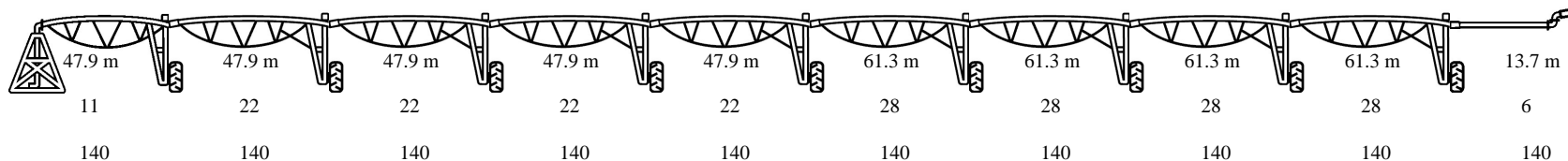
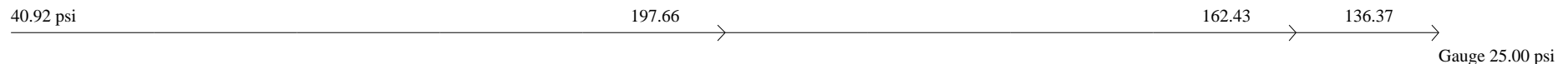
217 IWob UP3
(217)Std 9 Grv



Regs

Position : Bottom
109 PRL-10
108 PSR-10

Spans # 9



45.48 psi

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WARRANTY

WATER APPLICATION UNIFORMITY OBTAINED WITH THIS SYSTEM CAN BE ADVERSELY AFFECTED BY MANY VARIABLES INCLUDING THE IMPROPER MAKEUP OR INSTALLATION OF THE SPRINKLER OR SPRAY NOZZLE PACKAGE, OBSTRUCTED NOZZLES, MAINTAINING INCORRECT PIVOT PRESSURE, UNFAVORABLE CLIMATE CONDITIONS, TIGHT AND/OR SLOPING SOILS, IMPROPER END GUN ARC SETTINGS, ERRATIC AND IMPROPER OPERATING SPEED OF THE SYSTEM, AND AS WELL AS INHERENT VARIABLES IN THE MANY COMPONENTS COMPRISING THE SYSTEM. THEREFORE, SENNINGER IRRIGATION INC. MAKES NO WARRANTY AS TO THE UNIFORMITY OF COVERAGE OBTAINED FROM THIS WATER APPLICATION PRINTOUT OTHER THAN ITS MATHEMATICAL ACCURACY.

PRODUCTS MANUFACTURED BY SENNINGER IRRIGATION INC. THAT ARE SPECIFIED ON THIS SYSTEM ARE COVERED UNDER THE PRINTED "LIMITED WARRANTY" OF EACH INDIVIDUAL ITEM.

IT IS THE RESPONSIBILITY OF THE END USER TO DETERMINE IF ANY INCOMPATIBILITY EXISTS BETWEEN THE WATER DISTRIBUTION DEVICES AND THE CROP, THE SOIL, AND THE PHYSICAL STRUCTURE OF THE MECHANICAL MOVE SYSTEM. SENNINGER IRRIGATION THEREFORE DISCLAIMS ANY LIABILITY FOR DAMAGES DUE TO FAILURE OF THE SYSTEM TO PERFORM AS CONTEMPLATED.

ALL FIGURES PRESENTED ON THIS COMPUTER PRINTOUT ARE BASED ON THE FOLLOWING...

1. INFORMATION PROVIDED TO SENNINGER IRRIGATION, INC. CONCERNING PIPE LENGTH, DIAMETER, SURFACE FINISH AND OUTLET SPACINGS, PLUS WATER FLOW AND PRESSURE, PLUS ALL OTHER APPLICABLE DATA IS CORRECT.
2. THERE IS 100% WATER APPLICATION EFFICIENCY (ZERO WIND VELOCITY & NO EVAPORATION)
3. ALL BOW STRING AND WARREN TRUSS TYPE SPANS (EXCEPT THE LAST) ARE CONSIDERED TO END AT THE CENTER OF THE FLEXIBLE COUPLING. THE LAST SPAN IS CONSIDERED TO END AFTER THE "TOWER TOP" OR "END BOOM TRANSITION PIECE" FLANGE. CABLE SUPPORTED SPANS ARE CONSIDERED TO END AT THE CENTER OF THE TOWER.
4. PIVOT PRESSURE IS MEASURED UP ON THE MAIN HORIZONTAL DISTRIBUTION PIPE JUST AFTER THE LAST ELBOW.
5. PIVOT PRESSURE HAS BEEN DETERMINED IN CONSIDERATION OF A MAXIMUM FIELD ELEVATION RISE AND FALL FROM THE PIVOT POINT AS SHOWN ON PAGE ONE, WITH THESE ELEVATIONS OCCURING AT THE END OF THE SYSTEM.
6. SPRINKLER OR SPRAY NOZZLE BASE PRESSURE MAY BE LESS THAN MAIN LINE PIPE PRESSURE DUE TO THE USE OF PRESSURE REGULATORS, WITH FLOW VS. FRICTION LOSS THROUGH EACH REGULATOR CONSIDERED. WHERE DROP PIPES ARE USED THE STATIC HEAD IS ADDED TO THE MAIN PIPE PRESSURE TO DETERMINE SPRAY NOZZLE INLET PRESSURE.

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CAUTIONS

WHEN IRRIGATING WITH SENNINGER I-WOBS, USE STANDARD INTEGRAL WEIGHTS OR THREADED PLASTIC OR GALVANIZED DROP WEIGHT ONLY, DO NOT USE SLIP OVER DROP WEIGHTS.

SENNINGER IRRIGATION RECOMMENDS SPACING I-WOBS NO MORE THAN 18 FEET APART WHEN INSTALLED ON DROP PIPES!

SENNINGER I-WOBS ARE DESIGNED TO OPERATE AT 10-20 PSI. THE USE OF I-WOBS AT PRESSURES GREATER THAN 25 PSI VOIDS PRODUCT WARRANTY!

WHEN IRRIGATING WITH I-WOBS, DO NOT EXCEED 18 FOOT SPRINKLER SPACING PAST 2 SPANS WHEN CROP INTERFERENCE CAN PROHIBIT I-WOBS DESIGN DISTRIBUTION!

I-Wob Sprinklers require at least 24" of drop hose. Do not use slip weights. Do not install integrated weights on drop with double I-Wob. Inadequate crop clearance and/or structural interference may cause poor water distribution, resulting in decreased uniformity and possibly streaking.

This package was plugged with the recommended minimum ground clearance and above the crop canopy.

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Dealer:

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Customer:

Tirolesa SA
Eq. 1A

Comments:

Precipitation

Delivered Flow:	280.07 m3/h
Length:	498.80 m
Area:	87.86 ha
Distance to last tower:	485.12 m
Speed of last tower:	2.59 m
Precip. / Hect: (360)	3.19 m3/h
Time for coverage:	19.61Hrs
Tire Size	14.9 x 24
Motor loaded speed (RPM)	1440
Center gear box reduction (RATIO)	40:1
Wheel gear box reduction (RATIO)	50:1
End Gun Throw:	40.0 m

Circle Degree 360

<u>Depth</u>	<u>Timer</u>	<u>Rotation</u>
6.26 mm	100.00%	19.6hrs
	---	---
7.62 mm	82.12%	23.9hrs
10.16 mm	61.59%	31.8hrs
12.70 mm	49.27%	39.8hrs
15.24 mm	41.06%	47.8hrs
17.78 mm	35.19%	55.7hrs
20.32 mm	30.79%	63.7hrs
22.86 mm	27.37%	71.6hrs
25.40 mm	24.63%	79.6hrs
31.75 mm	19.71%	99.5hrs
38.10 mm	16.42%	119.4hrs
50.80 mm	12.32%	159.2hrs
63.50 mm	9.85%	199.0hrs

Caution**This chart is an estimate of the performance for your irrigation system. Tire inflation, tire slippage, soil conditions, flow fluctuations and other conditions can cause application and time deviations. The info above should be used as a guide and used with caution.

SENNINGER IRRIGATION

Date: 08/09/2019

Chart No: 4856

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LOCATION				HYDRAULICS DATA				HARDWARE DESCRIPTION								Goose Neck	
OUTLET COUNT	DISTANCE FROM		PIVOT POINT (M)	OUTLET FLOW NEEDED (M3/H)	ACTUAL OUTLET FLOW (M3/H)	MAIN PIPE PRESS (PSI)	SPR. BASE PRESS (PSI)	DROP LENGTH (cm)	PRESS REG MODEL	SENNINGER SPRINKLER		NOZZ SIZE (64TH INCH) &COLOR				G=180°Sg Sg=125°Sg Db=125°Db NOZZ#	
	LAST OUTLET (M)	LAST TOWER (M)								MODEL&PAD/Weight							
Pivot - Gauge																	
1-Plg			1.1														
2-Plg			2.4														
3-Plg			4.7														
4-Plg			6.9														
5-Plg			9.1														
6-Plg			11.4														
7-Plg			13.6														
8-Plg			15.8														
9-Plg			18.1														
10-Plg			20.3														
11-Plg			22.5														
12		24.77	24.8	0.11	0.19	39.97	11.32	276	PRL-10	IWob	UP3	Std	9	Grv	0	6-GOLD	1 G
13	2.23	27.00	27.0	0.12	0.19	39.89	11.32	273	PRL-10	IWob	UP3	Std	9	Grv	0	6-GOLD	2 G
14	2.24	29.24	29.2	0.13	0.19	39.80	11.32	271	PRL-10	IWob	UP3	Std	9	Grv	0	6-GOLD	3 G
15	2.23	31.47	31.5	0.14	0.19	39.72	11.32	268	PRL-10	IWob	UP3	Std	9	Grv	0	6-GOLD	4 G
16	2.29	33.76	33.8	0.15	0.19	39.63	11.32	263	PRL-10	IWob	UP3	Std	9	Grv	0	6-GOLD	5 G
17	2.13	35.89	35.9	0.16	0.19	39.55	11.32	258	PRL-10	IWob	UP3	Std	9	Grv	0	6-GOLD	6 G
18	2.29	38.18	38.2	0.17	0.19	39.46	11.32	250	PRL-10	IWob	UP3	Std	9	Grv	0	6-GOLD	7 G
19	2.23	40.41	40.4	0.18	0.19	39.38	11.31	243	PRL-10	IWob	UP3	Std	9	Grv	0	6-GOLD	8 G
20	2.24	42.65	42.7	0.19	0.19	39.29	11.31	235	PRL-10	IWob	UP3	Std	9	Grv	0	6-GOLD	9 G
21	2.23	44.88	44.9	0.21	0.19	39.21	11.31	227	PRL-10	IWob	UP3	Std	9	Grv	0	6-GOLD	10 G
22	2.29	47.17	47.2	0.19	0.19	39.12	11.31	217	PRL-10	IWob	UP3	Std	9	Grv	0	6-GOLD	11 G
Tower 1				47.85	48.65												
23	1.78	0.30	48.9	0.15	0.19	39.06	11.32	215	PRL-10	IWob	UP3	Std	9	Grv	0	6-GOLD	12 G
24	1.27	1.57	50.2	0.18	0.19	39.01	11.32	220	PRL-10	IWob	UP3	Std	9	Grv	0	6-GOLD	13 G
25	2.29	3.86	52.5	0.24	0.23	38.92	11.31	230	PRL-10	IWob	UP3	Std	9	Grv	0	6.5-GLD/ *	14 G
26	2.23	6.09	54.7	0.25	0.26	38.84	11.30	237	PRL-10	IWob	UP3	Std	9	Grv	0	7-LIME	15 G
27	2.24	8.33	57.0	0.26	0.26	38.76	11.30	245	PRL-10	IWob	UP3	Std	9	Grv	0	7-LIME	16 G
28	2.23	10.56	59.2	0.27	0.26	38.67	11.30	253	PRL-10	IWob	UP3	Std	9	Grv	0	7-LIME	17 G
29	2.29	12.85	61.5	0.27	0.26	38.59	11.30	260	PRL-10	IWob	UP3	Std	9	Grv	0	7-LIME	18 G
30	2.13	14.98	63.6	0.28	0.30	38.51	11.29	265	PRL-10	IWob	UP3	Std	9	Grv	0	7.5-LIM/ *	19 G
31	2.29	17.27	65.9	0.30	0.30	38.42	11.29	271	PRL-10	IWob	UP3	Std	9	Grv	0	7.5-LIM/ *	20 G
32	2.23	19.50	68.2	0.30	0.30	38.34	11.29	273	PRL-10	IWob	UP3	Std	9	Grv	0	7.5-LIM/ *	21 G
33	2.19	21.69	70.3	0.32	0.30	38.26	11.28	276	PRL-10	IWob	UP3	Std	9	Grv	0	7.5-LIM/ *	22 G
34	2.29	23.98	72.6	0.33	0.34	38.17	11.27	276	PRL-10	IWob	UP3	Std	9	Grv	0	8-LAVENDER	23 G
35	2.23	26.21	74.9	0.34	0.34	38.09	11.27	276	PRL-10	IWob	UP3	Std	9	Grv	0	8-LAVENDER	24 G
36	2.24	28.45	77.1	0.35	0.34	38.01	11.27	273	PRL-10	IWob	UP3	Std	9	Grv	0	8-LAVENDER	25 G
37	2.23	30.68	79.3	0.36	0.34	37.93	11.27	271	PRL-10	IWob	UP3	Std	9	Grv	0	8-LAVENDER	26 G
38	2.29	32.97	81.6	0.36	0.34	37.84	11.27	265	PRL-10	IWob	UP3	Std	9	Grv	0	8-LAVENDER	27 G
39	2.13	35.10	83.7	0.37	0.39	37.77	11.26	260	PRL-10	IWob	UP3	Std	9	Grv	0	8.5-LAV/ *	28 G
40	2.29	37.39	86.0	0.39	0.39	37.68	11.25	253	PRL-10	IWob	UP3	Std	9	Grv	0	8.5-LAV/ *	29 G

SENNINGER IRRIGATION														
Date: 08/09/2019			Chart No: 4856										Page 7	
LOCATION				HYDRAULICS DATA				HARDWARE DESCRIPTION						Goose Neck
OUTLET COUNT	LAST OUTLET (M)	DISTANCE FROM LAST TOWER (M)	PIVOT POINT (M)	OUTLET FLOW NEEDED (M3/H)	ACTUAL OUTLET FLOW (M3/H)	MAIN PIPE PRESS (PSI)	SPR. BASE PRESS (PSI)	DROP LENGTH (cm)	PRESS REG MODEL	SENNINGER SPRINKLER MODEL&PAD/Weight			NOZZ SIZE (64TH INCH) &COLOR	G=180°Sg Sg=125°Sg Db=125°Db NOZZ#
41	2.23	39.62	88.3	0.40	0.39	37.60	11.25	245	PRL-10	IWob	UP3	Std 9 Grv 0	8.5-LAV/*	30 G
42	2.24	41.86	90.5	0.41	0.39	37.52	11.25	237	PRL-10	IWob	UP3	Std 9 Grv 0	8.5-LAV/*	31 G
43	2.23	44.09	92.7	0.42	0.44	37.44	11.24	230	PRL-10	IWob	UP3	Std 9 Grv 0	9-GREY	32 G
44	2.29	46.38	95.0	0.39	0.39	37.36	11.25	220	PRL-10	IWob	UP3	Std 9 Grv 0	8.5-LAV/*	33 G
Tower 2		47.85	96.50											
45	1.78	0.30	96.8	0.30	0.30	37.29	11.29	215	PRL-10	IWob	UP3	Std 9 Grv 0	7.5-LIM/*	34 G
46	1.27	1.57	98.1	0.35	0.34	37.25	11.27	220	PRL-10	IWob	UP3	Std 9 Grv 0	8-LAVENDER	35 G
47	2.29	3.86	100.4	0.46	0.44	37.17	11.23	230	PRL-10	IWob	UP3	Std 9 Grv 0	9-GREY	36 G
48	2.23	6.09	102.6	0.46	0.49	37.09	11.22	237	PRL-10	IWob	UP3	Std 9 Grv 0	9.5-GRY/*	37 G
49	2.24	8.33	104.8	0.47	0.49	37.01	11.21	245	PRL-10	IWob	UP3	Std 9 Grv 0	9.5-GRY/*	38 G
50	2.23	10.56	107.1	0.49	0.49	36.93	11.21	253	PRL-10	IWob	UP3	Std 9 Grv 0	9.5-GRY/*	39 G
51	2.29	12.85	109.4	0.49	0.49	36.85	11.21	260	PRL-10	IWob	UP3	Std 9 Grv 0	9.5-GRY/*	40 G
52	2.13	14.98	111.5	0.50	0.49	36.77	11.21	265	PRL-10	IWob	UP3	Std 9 Grv 0	9.5-GRY/*	41 G
53	2.29	17.27	113.8	0.52	0.54	36.69	11.19	271	PRL-10	IWob	UP3	Std 9 Grv 0	10-TURQUOISE	42 G
54	2.23	19.50	116.0	0.52	0.54	36.61	11.19	273	PRL-10	IWob	UP3	Std 9 Grv 0	10-TURQUOISE	43 G
55	2.19	21.69	118.2	0.53	0.54	36.54	11.18	276	PRL-10	IWob	UP3	Std 9 Grv 0	10-TURQUOISE	44 G
56	2.29	23.98	120.5	0.55	0.54	36.46	11.18	276	PRL-10	IWob	UP3	Std 9 Grv 0	10-TURQUOISE	45 G
57	2.23	26.21	122.7	0.55	0.54	36.38	11.18	276	PRL-10	IWob	UP3	Std 9 Grv 0	10-TURQUOISE	46 G
58	2.24	28.45	124.9	0.56	0.54	36.30	11.18	273	PRL-10	IWob	UP3	Std 9 Grv 0	10-TURQUOISE	47 G
59	2.23	30.68	127.2	0.58	0.59	36.23	11.15	271	PRL-10	IWob	UP3	Std 9 Grv 0	10.5-TUR/*	48 G
60	2.29	32.97	129.5	0.58	0.59	36.15	11.16	265	PRL-10	IWob	UP3	Std 9 Grv 0	10.5-TUR/*	49 G
61	2.13	35.10	131.6	0.59	0.59	36.08	11.15	260	PRL-10	IWob	UP3	Std 9 Grv 0	10.5-TUR/*	50 G
62	2.29	37.39	133.9	0.61	0.59	36.00	11.15	253	PRL-10	IWob	UP3	Std 9 Grv 0	10.5-TUR/*	51 G
63	2.23	39.62	136.1	0.61	0.59	35.92	11.14	245	PRL-10	IWob	UP3	Std 9 Grv 0	10.5-TUR/*	52 G
64	2.24	41.86	138.4	0.63	0.65	35.85	11.12	237	PRL-10	IWob	UP3	Std 9 Grv 0	11-YELLOW	53 G
65	2.23	44.09	140.6	0.64	0.65	35.77	11.12	230	PRL-10	IWob	UP3	Std 9 Grv 0	11-YELLOW	54 G
66	2.29	46.38	142.9	0.59	0.59	35.70	11.15	220	PRL-10	IWob	UP3	Std 9 Grv 0	10.5-TUR/*	55 G
Tower 3		47.85	144.35											
67	1.78	0.30	144.7	0.45	0.44	35.64	11.23	215	PRL-10	IWob	UP3	Std 9 Grv 0	9-GREY	56 G
68	1.27	1.57	145.9	0.53	0.54	35.60	11.19	220	PRL-10	IWob	UP3	Std 9 Grv 0	10-TURQUOISE	57 G
69	2.29	3.86	148.2	0.68	0.65	35.52	11.11	230	PRL-10	IWob	UP3	Std 9 Grv 0	11-YELLOW	58 G
70	2.23	6.09	150.4	0.68	0.65	35.45	11.10	237	PRL-10	IWob	UP3	Std 9 Grv 0	11-YELLOW	59 G
71	2.24	8.33	152.7	0.69	0.71	35.38	11.08	245	PRL-10	IWob	UP3	Std 9 Grv 0	11.5-YEL/*	60 G
72	2.23	10.56	154.9	0.71	0.71	35.30	11.07	253	PRL-10	IWob	UP3	Std 9 Grv 0	11.5-YEL/*	61 G
73	2.29	12.85	157.2	0.70	0.71	35.23	11.08	260	PRL-10	IWob	UP3	Std 9 Grv 0	11.5-YEL/*	62 G
74	2.13	14.98	159.3	0.71	0.71	35.16	11.07	265	PRL-10	IWob	UP3	Std 9 Grv 0	11.5-YEL/*	63 G
75	2.29	17.27	161.6	0.74	0.71	35.09	11.06	271	PRL-10	IWob	UP3	Std 9 Grv 0	11.5-YEL/*	64 G
76	2.23	19.50	163.9	0.73	0.71	35.02	11.06	273	PRL-10	IWob	UP3	Std 9 Grv 0	11.5-YEL/*	65 G
77	2.19	21.69	166.0	0.75	0.77	34.95	11.03	276	PRL-10	IWob	UP3	Std 9 Grv 0	12-RED	66 G
78	2.29	23.98	168.3	0.77	0.77	34.88	11.03	276	PRL-10	IWob	UP3	Std 9 Grv 0	12-RED	67 G
79	2.23	26.21	170.6	0.77	0.77	34.81	11.03	276	PRL-10	IWob	UP3	Std 9 Grv 0	12-RED	68 G
80	2.24	28.45	172.8	0.78	0.77	34.74	11.02	273	PRL-10	IWob	UP3	Std 9 Grv 0	12-RED	69 G

SENNINGER IRRIGATION															
Date: 08/09/2019					Chart No: 4856					Page 8					
LOCATION				HYDRAULICS DATA				HARDWARE DESCRIPTION							Goose Neck
OUTLET COUNT	LAST OUTLET (M)	LAST TOWER (M)	PIVOT POINT (M)	OUTLET FLOW NEEDED (M3/H)	ACTUAL OUTLET FLOW (M3/H)	MAIN PIPE PRESS (PSI)	SPR. BASE PRESS (PSI)	DROP LENGTH (cm)	PRESS REG MODEL	SENNINGER SPRINKLER MODEL&PAD/Weight				NOZZ SIZE (64TH INCH) &COLOR	G=180°Sg Sg=125°Sg Db=125°Db NOZZ#
81	2.23	30.68	175.0	0.80	0.77	34.67	11.01	271	PRL-10	IWob UP3 Std 9 Grv 0				12-RED	70 G
82	2.29	32.97	177.3	0.79	0.77	34.60	11.02	265	PRL-10	IWob UP3 Std 9 Grv 0				12-RED	71 G
83	2.13	35.10	179.5	0.80	0.77	34.53	11.01	260	PRL-10	IWob UP3 Std 9 Grv 0				12-RED	72 G
84	2.29	37.39	181.7	0.83	0.84	34.46	10.97	253	PRL-10	IWob UP3 Std 9 Grv 0				12.5-RED/ *	73 G
85	2.23	39.62	184.0	0.83	0.84	34.40	10.97	245	PRL-10	IWob UP3 Std 9 Grv 0				12.5-RED/ *	74 G
86	2.24	41.86	186.2	0.84	0.84	34.33	10.97	237	PRL-10	IWob UP3 Std 9 Grv 0				12.5-RED/ *	75 G
87	2.23	44.09	188.4	0.86	0.84	34.26	10.96	230	PRL-10	IWob UP3 Std 9 Grv 0				12.5-RED/ *	76 G
88	2.29	46.38	190.7	0.78	0.77	34.20	11.02	220	PRL-10	IWob UP3 Std 9 Grv 0				12-RED	77 G
Tower 4		47.85	192.21												
89	1.78	0.30	192.5	0.59	0.59	34.14	11.15	215	PRL-10	IWob UP3 Std 9 Grv 0				10.5-TUR/ *	78 G
90	1.27	1.57	193.8	0.70	0.71	34.11	11.08	220	PRL-10	IWob UP3 Std 9 Grv 0				11.5-YEL/ *	79 G
91	2.29	3.86	196.1	0.90	0.90	34.04	10.92	230	PRL-10	IWob UP3 Std 9 Grv 0				13-WHITE	80 G
92	2.23	6.09	198.3	0.90	0.90	33.97	10.91	237	PRL-10	IWob UP3 Std 9 Grv 0				13-WHITE	81 G
93	2.24	8.33	200.5	0.91	0.90	33.91	10.91	245	PRL-10	IWob UP3 Std 9 Grv 0				13-WHITE	82 G
94	2.23	10.56	202.8	0.93	0.90	33.85	10.90	253	PRL-10	IWob UP3 Std 9 Grv 0				13-WHITE	83 G
95	2.29	12.85	205.1	0.92	0.90	33.78	10.91	260	PRL-10	IWob UP3 Std 9 Grv 0				13-WHITE	84 G
96	2.13	14.98	207.2	0.93	0.90	33.72	10.90	265	PRL-10	IWob UP3 Std 9 Grv 0				13-WHITE	85 G
97	2.29	17.27	209.5	0.96	0.97	33.66	10.85	271	PRL-10	IWob UP3 Std 9 Grv 0				13.5-WHT/ *	86 G
98	2.23	19.50	211.7	0.95	0.97	33.60	10.86	273	PRL-10	IWob UP3 Std 9 Grv 0				13.5-WHT/ *	87 G
99	2.19	21.69	213.9	0.97	0.97	33.54	10.85	276	PRL-10	IWob UP3 Std 9 Grv 0				13.5-WHT/ *	88 G
100	2.29	23.98	216.2	0.99	0.97	33.47	10.84	276	PRL-10	IWob UP3 Std 9 Grv 0				13.5-WHT/ *	89 G
101	2.23	26.21	218.4	0.99	0.97	33.41	10.84	276	PRL-10	IWob UP3 Std 9 Grv 0				13.5-WHT/ *	90 G
102	2.24	28.45	220.7	1.00	0.97	33.35	10.83	273	PRL-10	IWob UP3 Std 9 Grv 0				13.5-WHT/ *	91 G
103	2.23	30.68	222.9	1.02	1.04	33.29	10.78	271	PRL-10	IWob UP3 Std 9 Grv 0				14-BLUE	92 G
104	2.29	32.97	225.2	1.01	0.97	33.23	10.83	265	PRL-10	IWob UP3 Std 9 Grv 0				13.5-WHT/ *	93 G
105	2.13	35.10	227.3	1.02	1.04	33.18	10.79	260	PRL-10	IWob UP3 Std 9 Grv 0				14-BLUE	94 G
106	2.29	37.39	229.6	1.05	1.04	33.12	10.77	253	PRL-10	IWob UP3 Std 9 Grv 0				14-BLUE	95 G
107	2.23	39.62	231.8	1.05	1.04	33.06	10.77	245	PRL-10	IWob UP3 Std 9 Grv 0				14-BLUE	96 G
108	2.24	41.86	234.1	1.06	1.04	33.00	10.76	237	PRL-10	IWob UP3 Std 9 Grv 0				14-BLUE	97 G
109	2.23	44.09	236.3	1.08	1.11	32.95	10.71	230	PRL-10	IWob UP3 Std 9 Grv 0				14.5-BLU/ *	98 G
110	2.29	46.38	238.6	0.98	0.97	32.89	10.84	220	PRL-10	IWob UP3 Std 9 Grv 0				13.5-WHT/ *	99 G
Tower 5		47.85	240.06												
PIPE I.D. CHANGE AT 240.06 m FROM 197.663 mm TO 162.433 mm															
111	1.78	0.30	240.4	0.74	0.71	32.77	11.06	215	PRL-10	IWob UP3 Std 9 Grv 0				11.5-YEL/ *	100 G
112	1.27	1.57	241.6	0.87	0.90	32.69	10.93	220	PRL-10	IWob UP3 Std 9 Grv 0				13-WHITE	101 G
113	2.29	3.86	243.9	1.11	1.11	32.54	10.69	227	PRL-10	IWob UP3 Std 9 Grv 0				14.5-BLU/ *	102 G
114	2.23	6.09	246.2	1.11	1.11	32.40	10.69	235	PRL-10	IWob UP3 Std 9 Grv 0				14.5-BLU/ *	103 G
115	2.24	8.33	248.4	1.12	1.11	32.26	10.69	243	PRL-10	IWob UP3 Std 9 Grv 0				14.5-BLU/ *	104 G
116	2.23	10.56	250.6	1.14	1.14	32.12	11.16	249	PSR-10	IWob UP3 Std 9 Grv 0				14.5-BLU/ *	105 G
117	2.29	12.85	252.9	1.13	1.11	31.98	10.68	255	PRL-10	IWob UP3 Std 9 Grv 0				14.5-BLU/ *	106 G
118	2.13	14.98	255.0	1.14	1.11	31.85	10.68	263	PRL-10	IWob UP3 Std 9 Grv 0				14.5-BLU/ *	107 G

SENNINGER IRRIGATION														
Date: 08/09/2019			Chart No: 4856			Page 9								
LOCATION				HYDRAULICS DATA				HARDWARE DESCRIPTION						Goose Neck
OUTLET COUNT	LAST OUTLET (M)	LAST TOWER (M)	PIVOT POINT (M)	OUTLET FLOW NEEDED (M3/H)	ACTUAL OUTLET FLOW (M3/H)	MAIN PIPE PRESS (PSI)	SPR. BASE PRESS (PSI)	DROP LENGTH (cm)	PRESS REG MODEL	SENNINGER SPRINKLER MODEL&PAD/Weight	NOZZ SIZE (64TH INCH) &COLOR			G=180°Sg Sg=125°Sg Db=125°Db NOZZ#
119	2.29	17.27	257.3	1.18	1.14	31.71	11.16	267	PSR-10	IWob UP3 Std 9 Grv 0	14.5-BLU/ *			108 G
120	2.23	19.50	259.6	1.17	1.14	31.58	11.16	272	PSR-10	IWob UP3 Std 9 Grv 0	14.5-BLU/ *			109 G
121	2.24	21.74	261.8	1.18	1.22	31.45	11.14	274	PSR-10	IWob UP3 Std 9 Grv 0	15-DK BROWN			110 G
122	2.23	23.98	264.0	1.21	1.22	31.32	11.13	277	PSR-10	IWob UP3 Std 9 Grv 0	15-DK BROWN			111 G
123	2.29	26.26	266.3	1.19	1.22	31.18	11.14	279	PSR-10	IWob UP3 Std 9 Grv 0	15-DK BROWN			112 G
124	2.13	28.40	268.5	1.20	1.22	31.06	11.13	282	PSR-10	IWob UP3 Std 9 Grv 0	15-DK BROWN			113 G
125	2.29	30.68	270.7	1.24	1.22	30.93	11.13	282	PSR-10	IWob UP3 Std 9 Grv 0	15-DK BROWN			114 G
126	2.23	32.92	273.0	1.22	1.22	30.81	11.13	282	PSR-10	IWob UP3 Std 9 Grv 0	15-DK BROWN			115 G
127	2.19	35.10	275.2	1.24	1.22	30.68	11.13	279	PSR-10	IWob UP3 Std 9 Grv 0	15-DK BROWN			116 G
128	2.29	37.39	277.4	1.27	1.30	30.56	11.10	277	PSR-10	IWob UP3 Std 9 Grv 0	15.5-DBN/ *			117 G
129	2.23	39.62	279.7	1.26	1.30	30.44	11.10	274	PSR-10	IWob UP3 Std 9 Grv 0	15.5-DBN/ *			118 G
130	2.24	41.86	281.9	1.27	1.30	30.32	11.10	272	PSR-10	IWob UP3 Std 9 Grv 0	15.5-DBN/ *			119 G
131	2.23	44.09	284.2	1.30	1.30	30.20	11.10	267	PSR-10	IWob UP3 Std 9 Grv 0	15.5-DBN/ *			120 G
132	2.29	46.38	286.4	1.28	1.30	30.08	11.10	262	PSR-10	IWob UP3 Std 9 Grv 0	15.5-DBN/ *			121 G
133	2.13	48.51	288.6	1.29	1.30	29.97	11.10	254	PSR-10	IWob UP3 Std 9 Grv 0	15.5-DBN/ *			122 G
134	2.29	50.80	290.9	1.33	1.30	29.85	11.09	249	PSR-10	IWob UP3 Std 9 Grv 0	15.5-DBN/ *			123 G
135	2.23	53.03	293.1	1.32	1.30	29.74	11.09	241	PSR-10	IWob UP3 Std 9 Grv 0	15.5-DBN/ *			124 G
136	2.24	55.27	295.3	1.33	1.30	29.63	11.09	234	PSR-10	IWob UP3 Std 9 Grv 0	15.5-DBN/ *			125 G
137	2.23	57.50	297.6	1.36	1.38	29.52	11.06	226	PSR-10	IWob UP3 Std 9 Grv 0	16-ORANGE			126 G
138	2.29	59.79	299.9	1.23	1.22	29.41	11.13	218	PSR-10	IWob UP3 Std 9 Grv 0	15-DK BROWN			127 G
Tower 6		61.26	301.33											
139	1.78	0.30	301.6	0.93	0.90	29.32	10.90	215	PRL-10	IWob UP3 Std 9 Grv 0	13-WHITE			128 G
140	1.27	1.57	302.9	1.09	1.11	29.26	10.71	220	PRL-10	IWob UP3 Std 9 Grv 0	14.5-BLU/ *			129 G
141	2.29	3.86	305.2	1.39	1.38	29.15	11.05	226	PSR-10	IWob UP3 Std 9 Grv 0	16-ORANGE			130 G
142	2.23	6.09	307.4	1.39	1.38	29.05	11.06	234	PSR-10	IWob UP3 Std 9 Grv 0	16-ORANGE			131 G
143	2.24	8.33	309.7	1.40	1.38	28.95	11.05	241	PSR-10	IWob UP3 Std 9 Grv 0	16-ORANGE			132 G
144	2.23	10.56	311.9	1.42	1.47	28.85	11.03	249	PSR-10	IWob UP3 Std 9 Grv 0	16.5-ORN/ *			133 G
145	2.29	12.85	314.2	1.40	1.38	28.74	11.05	254	PSR-10	IWob UP3 Std 9 Grv 0	16-ORANGE			134 G
146	2.13	14.98	316.3	1.41	1.38	28.65	11.05	262	PSR-10	IWob UP3 Std 9 Grv 0	16-ORANGE			135 G
147	2.29	17.27	318.6	1.45	1.46	28.55	11.02	267	PSR-10	IWob UP3 Std 9 Grv 0	16.5-ORN/ *			136 G
148	2.23	19.50	320.8	1.45	1.47	28.46	11.02	272	PSR-10	IWob UP3 Std 9 Grv 0	16.5-ORN/ *			137 G
149	2.24	21.74	323.1	1.46	1.46	28.36	11.02	274	PSR-10	IWob UP3 Std 9 Grv 0	16.5-ORN/ *			138 G
150	2.23	23.98	325.3	1.49	1.46	28.27	11.01	277	PSR-10	IWob UP3 Std 9 Grv 0	16.5-ORN/ *			139 G
151	2.29	26.26	327.6	1.46	1.46	28.18	11.02	279	PSR-10	IWob UP3 Std 9 Grv 0	16.5-ORN/ *			140 G
152	2.13	28.40	329.7	1.47	1.46	28.09	11.01	282	PSR-10	IWob UP3 Std 9 Grv 0	16.5-ORN/ *			141 G
153	2.29	30.68	332.0	1.52	1.55	28.00	10.98	282	PSR-10	IWob UP3 Std 9 Grv 0	17-DK GREEN			142 G
154	2.23	32.92	334.2	1.49	1.46	27.92	11.01	282	PSR-10	IWob UP3 Std 9 Grv 0	16.5-ORN/ *			143 G
155	2.19	35.10	336.4	1.52	1.55	27.83	10.98	279	PSR-10	IWob UP3 Std 9 Grv 0	17-DK GREEN			144 G
156	2.29	37.39	338.7	1.55	1.55	27.75	10.97	277	PSR-10	IWob UP3 Std 9 Grv 0	17-DK GREEN			145 G
157	2.23	39.62	340.9	1.54	1.55	27.66	10.98	274	PSR-10	IWob UP3 Std 9 Grv 0	17-DK GREEN			146 G
158	2.24	41.86	343.2	1.55	1.55	27.58	10.97	272	PSR-10	IWob UP3 Std 9 Grv 0	17-DK GREEN			147 G
159	2.23	44.09	345.4	1.58	1.55	27.50	10.97	267	PSR-10	IWob UP3 Std 9 Grv 0	17-DK GREEN			148 G

SENNINGER IRRIGATION																
Date: 08/09/2019				Chart No: 4856										Page 10		
LOCATION				HYDRAULICS DATA					HARDWARE DESCRIPTION							Goose Neck
OUTLET COUNT	LAST OUTLET (M)	DISTANCE FROM LAST TOWER (M)	PIVOT POINT (M)	OUTLET FLOW NEEDED (M3/H)	ACTUAL OUTLET FLOW (M3/H)	MAIN PIPE PRESS (PSI)	SPR. BASE PRESS (PSI)	DROP LENGTH (cm)	PRESS REG MODEL	SENNINGER SPRINKLER MODEL&PAD/Weight				NOZZ SIZE (64TH INCH) &COLOR		G=180°Sg Sg=125°Sg Db=125°Db NOZZ#
160	2.29	46.38	347.7	1.55	1.55	27.42	10.97	262	PSR-10	IWob	UP3	Std	9	Grv	0	17-DK GREEN 149 G
161	2.13	48.51	349.8	1.56	1.55	27.35	10.97	254	PSR-10	IWob	UP3	Std	9	Grv	0	17-DK GREEN 150 G
162	2.29	50.80	352.1	1.61	1.64	27.27	10.93	249	PSR-10	IWob	UP3	Std	9	Grv	0	17.5-DGN/* 151 G
163	2.23	53.03	354.4	1.60	1.64	27.20	10.94	241	PSR-10	IWob	UP3	Std	9	Grv	0	17.5-DGN/* 152 G
164	2.24	55.27	356.6	1.61	1.64	27.13	10.93	234	PSR-10	IWob	UP3	Std	9	Grv	0	17.5-DGN/* 153 G
165	2.23	57.50	358.8	1.64	1.64	27.06	10.93	226	PSR-10	IWob	UP3	Std	9	Grv	0	17.5-DGN/* 154 G
166	2.29	59.79	361.1	1.48	1.46	26.99	11.01	218	PSR-10	IWob	UP3	Std	9	Grv	0	16.5-ORN/* 155 G
Tower 7		61.26	362.59													
167	1.78	0.30	362.9	1.12	1.11	26.93	10.69	215	PRL-10	IWob	UP3	Std	9	Grv	0	14.5-BLU/* 156 G
168	1.27	1.57	364.2	1.31	1.30	26.89	11.09	218	PSR-10	IWob	UP3	Std	9	Grv	0	15.5-DBN/* 157 G
169	2.29	3.86	366.4	1.67	1.64	26.83	10.92	226	PSR-10	IWob	UP3	Std	9	Grv	0	17.5-DGN/* 158 G
170	2.23	6.09	368.7	1.67	1.64	26.76	10.92	234	PSR-10	IWob	UP3	Std	9	Grv	0	17.5-DGN/* 159 G
171	2.24	8.33	370.9	1.68	1.64	26.70	10.92	241	PSR-10	IWob	UP3	Std	9	Grv	0	17.5-DGN/* 160 G
172	2.23	10.56	373.2	1.70	1.73	26.64	10.88	249	PSR-10	IWob	UP3	Std	9	Grv	0	18-PURPLE 161 G
173	2.29	12.85	375.4	1.68	1.64	26.57	10.92	254	PSR-10	IWob	UP3	Std	9	Grv	0	17.5-DGN/* 162 G
174	2.13	14.98	377.6	1.69	1.64	26.52	10.91	262	PSR-10	IWob	UP3	Std	9	Grv	0	17.5-DGN/* 163 G
175	2.29	17.27	379.9	1.73	1.73	26.46	10.87	267	PSR-10	IWob	UP3	Std	9	Grv	0	18-PURPLE 164 G
176	2.23	19.50	382.1	1.73	1.73	26.40	10.88	272	PSR-10	IWob	UP3	Std	9	Grv	0	18-PURPLE 165 G
177	2.24	21.74	384.3	1.74	1.73	26.35	10.87	274	PSR-10	IWob	UP3	Std	9	Grv	0	18-PURPLE 166 G
178	2.23	23.98	386.6	1.77	1.73	26.29	10.86	277	PSR-10	IWob	UP3	Std	9	Grv	0	18-PURPLE 167 G
179	2.29	26.26	388.9	1.74	1.73	26.24	10.87	279	PSR-10	IWob	UP3	Std	9	Grv	0	18-PURPLE 168 G
180	2.13	28.40	391.0	1.75	1.73	26.19	10.87	282	PSR-10	IWob	UP3	Std	9	Grv	0	18-PURPLE 169 G
181	2.29	30.68	393.3	1.80	1.83	26.14	10.83	282	PSR-10	IWob	UP3	Std	9	Grv	0	18.5-PUR/* 170 G
182	2.23	32.92	395.5	1.77	1.73	26.09	10.86	282	PSR-10	IWob	UP3	Std	9	Grv	0	18-PURPLE 171 G
183	2.19	35.10	397.7	1.80	1.83	26.04	10.83	279	PSR-10	IWob	UP3	Std	9	Grv	0	18.5-PUR/* 172 G
184	2.29	37.39	400.0	1.83	1.83	26.00	10.82	277	PSR-10	IWob	UP3	Std	9	Grv	0	18.5-PUR/* 173 G
185	2.23	39.62	402.2	1.82	1.83	25.95	10.82	274	PSR-10	IWob	UP3	Std	9	Grv	0	18.5-PUR/* 174 G
186	2.24	41.86	404.4	1.83	1.83	25.91	10.82	272	PSR-10	IWob	UP3	Std	9	Grv	0	18.5-PUR/* 175 G
187	2.23	44.09	406.7	1.86	1.82	25.86	10.81	267	PSR-10	IWob	UP3	Std	9	Grv	0	18.5-PUR/* 176 G
188	2.29	46.38	409.0	1.83	1.83	25.82	10.82	262	PSR-10	IWob	UP3	Std	9	Grv	0	18.5-PUR/* 177 G
189	2.13	48.51	411.1	1.84	1.82	25.78	10.82	254	PSR-10	IWob	UP3	Std	9	Grv	0	18.5-PUR/* 178 G
190	2.29	50.80	413.4	1.89	1.92	25.75	10.77	249	PSR-10	IWob	UP3	Std	9	Grv	0	19-BLACK 179 G
191	2.23	53.03	415.6	1.88	1.92	25.71	10.78	241	PSR-10	IWob	UP3	Std	9	Grv	0	19-BLACK 180 G
192	2.24	55.27	417.9	1.89	1.92	25.67	10.77	234	PSR-10	IWob	UP3	Std	9	Grv	0	19-BLACK 181 G
193	2.23	57.50	420.1	1.92	1.92	25.64	10.76	226	PSR-10	IWob	UP3	Std	9	Grv	0	19-BLACK 182 G
194	2.29	59.79	422.4	1.73	1.73	25.60	10.87	218	PSR-10	IWob	UP3	Std	9	Grv	0	18-PURPLE 183 G
Tower 8		61.26	423.85													
195	1.78	0.30	424.2	1.31	1.30	25.58	11.09	213	PSR-10	IWob	UP3	Std	9	Grv	0	15.5-DBN/* 184 G
196	1.27	1.57	425.4	1.53	1.55	25.56	10.98	218	PSR-10	IWob	UP3	Std	9	Grv	0	17-DK GREEN 185 G
197	2.29	3.86	427.7	1.95	1.92	25.53	10.75	226	PSR-10	IWob	UP3	Std	9	Grv	0	19-BLACK 186 G
198	2.23	6.09	429.9	1.94	1.92	25.50	10.76	234	PSR-10	IWob	UP3	Std	9	Grv	0	19-BLACK 187 G
199	2.24	8.33	432.2	1.95	1.92	25.47	10.75	241	PSR-10	IWob	UP3	Std	9	Grv	0	19-BLACK 188 G

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M A T E R I A L S			I W o b U P 3										
Qty	Pad	Size	----- Positions -----										
5	Std 9 Grv	14	92	94	95	96	97						
11	Std 9 Grv	14.5	98	102	103	104	105	106	107	108	109	129	
			T-156										
8	Std 9 Grv	15	110	111	112	113	114	115	116	127-T			
11	Std 9 Grv	15.5	117	118	119	120	121	122	123	124	125	157	
			T-184										
6	Std 9 Grv	16	126	130	131	132	134	135					
9	Std 9 Grv	16.5	133	136	137	138	139	140	141	143	155-T		
9	Std 9 Grv	17	142	144	145	146	147	148	149	150	185		
9	Std 9 Grv	17.5	151	152	153	154	158	159	160	162	163		
9	Std 9 Grv	18	161	164	165	166	167	168	169	171	183-T		
8	Std 9 Grv	18.5	170	172	173	174	175	176	177	178			
9	Std 9 Grv	19	179	180	181	182	186	187	188	190	191		
8	Std 9 Grv	19.5	189	192	193	194	195	196	197	199			
9	Std 9 Grv	20	198	200	201	202	203	204	205	206	208		
6	Std 9 Grv	20.5	207	209	210	213	214	215					
2	Std 9 Grv	21	216	217-T									

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MATERIALS

IWob UP3

Qty	Pad	Size	----- Positions -----
-----	-----	------	-----------------------

2	Std 9 Grv	22	211-T T-212
---	-----------	----	-------------

217	Total		
-----	-------	--	--

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QUANTITIES

Qty	Item	----- Description -----							
217	IWob UP3	(217)Std 9 Grv							
109	PRL-10								
108	PSR-10								
217	Weights	(217)Magnum 1b							
11	Plugs								
1	KOMET101 18deg .79								
	(cm)	(cm)		(cm)		(cm)			
7 x	213 Drop	2 x	235 Drop	1 x	255 Drop	8 x	272 Drop		
7 x	215 Drop	8 x	237 Drop	1 x	258 Drop	9 x	273 Drop		
1 x	217 Drop	7 x	241 Drop	8 x	260 Drop	8 x	274 Drop		
6 x	218 Drop	2 x	243 Drop	7 x	262 Drop	13 x	276 Drop		
10 x	220 Drop	8 x	245 Drop	2 x	263 Drop	8 x	277 Drop		
7 x	226 Drop	8 x	249 Drop	8 x	265 Drop	8 x	279 Drop		
2 x	227 Drop	1 x	250 Drop	8 x	267 Drop	12 x	282 Drop		
8 x	230 Drop	8 x	253 Drop	1 x	268 Drop				
7 x	234 Drop	7 x	254 Drop	9 x	271 Drop				
	549.39m	TOTAL DROP LENGTH							

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Drop lengths are based on the following values.

Span	Tower height	Crown height	Ground Clearance m
1,2,3,4,5	3.91	4.52	
6,7,8,9	3.91	4.60	

Ground Clearance : General

1.50

These dimensions must be confirmed
prior to manufacturing the drop components

DEVIATION SUMMARY

Span number	Area	Required flow	Actual flow	% Deviation	m3/h/ha
1	0.74	1.82	2.18	20.13	2.94
2	2.18	7.01	7.02	0.14	3.21
3	3.62	11.64	11.65	0.10	3.21
4	5.06	16.26	16.11	-0.97	3.18
5	6.50	20.89	20.84	-0.24	3.20
6	10.43	33.50	33.43	-0.22	3.21
7	12.79	41.08	41.15	0.17	3.22
8	15.15	48.67	48.55	-0.25	3.20
9	17.51	56.32	56.37	0.08	3.22
10	4.23	13.68	13.71	0.21	3.24
End Gun 1	9.65	30.86	29.07	-5.81	3.01

Nozzle Discharge Uniformity Coefficient = 98.3 %

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GROSS APPLICATION RATE

Span	#Sprinklers	Average throw m	Total flow m3/h	Total area m2	Rate mm/h
1	11	5.87	2.18	1089.24	6.58
2	22	6.05	7.02	1904.48	12.10
3	22	6.31	11.65	1986.05	19.26
4	22	6.51	16.11	2050.72	25.79
5	22	6.70	20.84	2111.36	32.42
6	28	6.88	33.43	2771.57	39.61
7	28	7.07	41.15	2848.09	47.45
8	28	7.24	48.55	2917.00	54.66
9	28	7.41	56.37	2990.89	61.90
10	6	7.57	13.71	694.65	64.80

This page is a simulation of the application rate that is derived from the average pattern radius of the sprinklers selected plus any additional offset parameters.

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BILL of MATERIALS - Hydraulic Components

Qty	PartNumber	Cost	----- Description -----
217	IWOB00B3-UP3		UP3 I-Wob Standard Angle 9 Groove (Black
11	FTP3		3/4" Plugs
13	UP3NZ06		# 6 UP3 Nozzle (gold)
1	UP3NZ065		# 6.5 UP3 Nozzle (gold) notched
4	UP3NZ07		# 7 UP3 Nozzle (lime)
5	UP3NZ075		# 7.5 UP3 Nozzle (lime) notched
6	UP3NZ08		# 8 UP3 Nozzle (lavender)
5	UP3NZ085		# 8.5 UP3 Nozzle (lavender) notched
3	UP3NZ09		# 9 UP3 Nozzle (grey)
5	UP3NZ095		# 9.5 UP3 Nozzle (grey) notched
7	UP3NZ10		#10 UP3 Nozzle (turquoise)
7	UP3NZ105		#10.5 UP3 Nozzle (turquoise) notched
4	UP3NZ11		#11 UP3 Nozzle (yellow)
8	UP3NZ115		#11.5 UP3 Nozzle (yellow) notched
8	UP3NZ12		#12 UP3 Nozzle (red)
4	UP3NZ125		#12.5 UP3 Nozzle (red) notched
8	UP3NZ13		#13 UP3 Nozzle (white)
8	UP3NZ135		#13.5 UP3 Nozzle (white) notched
5	UP3NZ14		#14 UP3 Nozzle (blue)
11	UP3NZ145		#14.5 UP3 Nozzle (blue) notched
8	UP3NZ15		#15 UP3 Nozzle (brown)
11	UP3NZ155		#15.5 UP3 Nozzle (brown) notched
6	UP3NZ16		#16 UP3 Nozzle (orange)
9	UP3NZ165		#16.5 UP3 Nozzle (orange) notched
9	UP3NZ17		#17 UP3 Nozzle (dark green)
9	UP3NZ175		#17.5 UP3 Nozzle (dark green) notched
9	UP3NZ18		#18 UP3 Nozzle (purple)
8	UP3NZ185		#18.5 UP3 Nozzle (purple) notched
9	UP3NZ19		#19 UP3 Nozzle (black)

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BILL of MATERIALS - Hydraulic Components

Qty	PartNumber	Cost	----- Description -----
8	UP3NZ195		#19.5 UP3 Nozzle (black) notched
9	UP3NZ20		#20 UP3 Nozzle (dark turquoise)
6	UP3NZ205		#20.5 UP3 Nozzle (dark turquoise) notched
2	UP3NZ21		#21 UP3 Nozzle (mustard)
2	UP3NZ22		#22 UP3 Nozzle (maroon)
109	PRL10LF3F3F		REGULATOR, SENN, PRL, 10 PSI
108	PSR10-3F3F		REGULATOR, SENN, PSR, 10 PSI
217	MAGWGTBRB		WEIGHT, Magnum, Barb (I-Wob)
1	Nozzle , Komet Twin		Nozzle , Komet Twin 101, 0.79"
880	Total		

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