

HYPRO® Knapsack and compression sprayer **Nozzle Selection Guide**



Polijet 55-130°

Deflector:

Designed for Knapsacks. Choice of swath widths. Low drift non-blocking characteristics

1 – 3 Bar



FCX Full Cone 80°

Full Cone:

Designed for knapsacks. Excellent foliar coverage, for spot treatment of weeds with herbicides

1 – 5 Bar



HCX Hollow Cone 80°

Hollow Cone:

Produces finely atomised droplets. Suitable for good foliar coverage with insecticides and fungicides

3 – 6 Bar



Deflectip 80-125°

Deflector:

Wide angled even spray with coarse droplets. Ideal for lower volume spraying with herbicides.

1 – 5 Bar



Evenspray 80°

Flat Fan:

Distributes a flat fan with uniform med/fine spray evenly across the swath. Ideal for all targets.

2 – 4 Bar



Knapsack nozzle Kits

To allow a choice of nozzles. Contains a HCX hollow cone, FCX full cone, and Deflectip nozzles and 100# filter




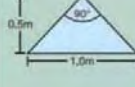

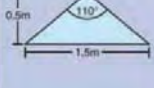

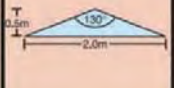
1 – 5 Bar



PoliJet 55° - 130°



- Small nozzle sizes specifically designed to apply medium/coarse spray quality at knapsack application speeds.
- 4 different spray angles for swath widths of 0.5-2m at 0.5m nozzle height. Each applying the same application rate.
- Large circular orifice eliminates chances of blocking.

Colour	Part No.	BCPC Code	BCPC Spray	Pressure (bar)	Flow (L/min)	Coverage @ 0.5m	Application Rates (L/ha) at			
							2 Km/h	3 Km/h	4 Km/h	6 Km/h
	AN0.6 (100#)	D/0.60/1	Coarse	1.00	0.600		360	240	180	144
			Coarse	1.50	0.730		438	292	219	175
			Medium	2.00	0.850		510	340	255	204
			Medium	2.50	0.950		570	380	285	228
	AN1.2 (50#)	D/1.20/1	Coarse	1.00	1.200		360	240	180	144
			Coarse	1.50	1.470		441	294	221	176
			Medium	2.00	1.700		510	340	255	204
			Medium	2.50	1.900		570	380	285	228
	AN1.8 (50#)	D/1.80/1	Coarse	1.00	1.800		360	240	180	144
			Coarse	1.50	2.199		440	293	220	176
			Coarse	2.00	2.550		510	340	255	204
			Coarse	2.50	2.850		570	380	285	228
	AN2.4 (50#)	D/2.40/1	Coarse	1.00	2.400		360	240	180	144
			Coarse	1.50	2.940		510	294	221	204
			Coarse	2.00	3.390		509	339	254	203
			Coarse	2.50	3.790		570	380	285	228

Type: Deflector

Angles: 55° - 130°

Spray quality:

Med/Coarse, low drift




Pressure: 1-3 bar



Precision Fluid
Delivery Technology

Full Cone (FCX) 80°



Colour	Part No.	Pressure (bar) (Mesh)	Flow L/min
	FCX2 (100#)	1.00	0.74
		2.00	1.05
		3.00	1.29
		4.00	1.49
		5.00	1.66
	FCX3 (50#)	1.00	1.12
		2.00	1.58
		3.00	1.93
		4.00	2.23
		5.00	2.49
	FCX4 (50#)	1.00	1.49
		2.00	2.1
		3.00	2.58
		4.00	2.98
		5.00	3.33
	FCX5 (50#)	1.00	1.86
		2.00	2.63
		3.00	3.22
		4.00	3.72
		5.00	4.16
	FCX6 (50#)	1.00	2.23
		2.00	3.16
		3.00	3.87
		4.00	4.47
		5.00	4.99
	FCX8 (50#)	1.00	2.98
		2.00	4.21
		3.00	5.16
		4.00	5.96
		5.00	6.66

- Designed for spot applications using knapsack and compression sprayers.
- Produces full cone pattern to give comprehensive coverage.
- 80 degree spray angle makes it easy to direct for spot applications.
- Two piece construction separates easily for cleaning

Type: Full cone
Angle: 80°
Spray quality: Med
Pressure: 1-5 bar

NB To select the correct FCX nozzle:

(a) Referring to the chemical label, calculate the flow rate using the following equation.

$$L/min \text{ per nozzle} = \text{application rate (L/ha)} \times \text{speed (km/h)} \times \text{band width (m)} \div 600$$

(b) Use this calculation to select the appropriate FCX from the chart. Make sure that the spray quality matches the chemical manufacturers' recommendations.

Hollow Cone (HCX) 80°







- Can be used as a band spray and with knapsacks.
- Finely atomised spray droplets, ideal for foliar coverage of insecticides and fungicides.

Type: Hollow cone

Angle: 80°

Spray quality: Fine

Pressure: 3-6 bar

Colour	Part No. (Mesh #)	BCPC Code	BCPC Spray Quality	Pressure (bar)	Flow L/min)	Application Rates (L/ha) at km/h					
						10 km/h	12 km/h	14 km/h	16 km/h	18 km/h	20 km/h
	HCX2 (100#)	HC/0.13/3	Fine	3.00	0.132	16	13	11	10	9	8
			Fine	3.50	0.143	17	14	12	11	10	9
			Fine	4.00	0.153	18	15	13	11	10	9
			Fine	5.00	0.171	21	17	15	13	11	10
			Fine	6.00	0.187	22	19	16	14	12	11
	HCX3 (100#)	HC/0.20/3	Fine	3.00	0.199	24	20	17	15	13	12
			Fine	3.50	0.215	26	22	18	16	14	13
			Fine	4.00	0.229	27	23	20	17	15	14
			Fine	5.00	0.257	31	26	22	19	17	15
			Fine	6.00	0.281	34	28	24	21	19	17
	HCX4 (50#)	HC/0.27/3	Fine	3.00	0.265	32	27	23	20	18	16
			Fine	3.50	0.286	34	29	25	21	19	17
			Fine	4.00	0.306	37	31	26	23	20	18
			Fine	5.00	0.342	41	34	29	26	23	21
			Fine	6.00	0.375	45	38	32	28	25	23
	HCX6 (50#)	HC/0.40/3	Fine	3.00	0.397	48	40	34	30	26	24
			Fine	3.50	0.429	51	43	37	32	29	26
			Fine	4.00	0.459	55	46	39	34	31	28
			Fine	5.00	0.513	62	51	44	38	34	31
			Fine	6.00	0.562	67	56	48	42	37	34

Colour	Part No. (Mesh #)	BCPC Code	BCPC Spray Quality	Pressure (bar)	Flow L/min)	Application Rates (L/ha) at km/h					
						10 km/h	12 km/h	14 km/h	16 km/h	18 km/h	20 km/h
	HCX8 (50#)	HC/0.53/3	Fine	3.00	0.53	64	53	45	40	35	32
			Fine	3.50	0.572	69	57	49	43	38	34
			Fine	4.00	0.612	73	61	52	46	41	37
			Fine	5.00	0.6843	82	68	59	51	46	41
			Fine	6.00	0.749	90	75	64	56	50	45
	HCX9 (50#)	HC/0.60/3	Fine	3.00	0.596	72	60	51	45	40	36
			Fine	3.50	0.650	78	65	56	49	43	39
			Fine	4.00	0.688	83	69	59	52	46	41
			Fine	5.00	0.77	92	77	66	58	51	46
			Fine	6.00	0.843	101	84	72	63	56	51
	HCX10 (50#)	HC/0.66/3	Fine	3.00	0.662	79	66	57	50	44	40
			Fine	3.50	0.715	86	72	61	54	48	43
			Fine	4.00	0.765	92	77	66	57	51	46
			Fine	5.00	0.855	103	86	73	64	57	51
			Fine	6.00	0.937	112	94	80	70	62	56
	HCX12 (50#)	HC/0.80/3	Fine	3.00	0.795	95	80	68	60	53	48
			Fine	3.50	0.859	103	86	74	64	57	52
			Fine	4.00	0.918	110	92	79	69	61	55
			Fine	5.00	1.026	123	103	88	77	68	62
			Fine	6.00	1.124	135	112	96	84	75	67
	HCX18 (50#)	HC/1.18/3	Fine	3.00	1.18	142	118	101	89	79	71
			Fine	3.50	1.28	154	128	110	96	85	77
			Fine	4.00	1.37	164	137	117	103	91	82
			Fine	5.00	1.53	184	153	131	115	102	92
			Fine	6.00	1.68	202	168	144	126	112	101

DeflecTip 80° - 125°



- Smaller sizes recommended for Knapsacks.
- Variable spray swath widths available
- Large orifice produces coarser droplets less prone to drift

Type: Deflector
Angle: 80° - 125°
Spray quality: Med
Pressure: 1-5 bar

Nozzle	Pressure	Flow	Spray Angle	Spray Width (m)*	Litres/hectare @ Km/h			
	Bar	L/min			2	3	4	5
DT0.5	1	0.23	80	0.84	81	54	41	33
	2	0.32	80	0.84	115	77	58	46
	3	0.39	80	0.84	141	94	71	56
DT0.75	1	0.34	95	1.09	94	63	47	38
	2	0.48	95	1.09	133	89	66	53
	3	0.59	95	1.09	163	109	81	65
DT1.0	1	0.46	105	1.30	105	70	52	42
	2	0.64	105	1.30	148	99	74	59
	3	0.79	105	1.30	182	121	91	73
DT1.5	1	0.68	105	1.30	157	105	79	63
	2	0.97	105	1.30	223	148	111	89
	3	1.18	105	1.30	273	182	136	109
DT2.0	1	0.91	105	1.30	210	140	105	84
	2	1.29	105	1.30	297	198	148	119
	3	1.58	105	1.30	364	242	182	145

Nozzle	Pressure	Flow	Spray Angle	Spray Width (m)*	Litres/hectare @ Km/h			
	Bar	L/min			2	3	4	5
DT2.5	1	1.14	110	1.43	239	160	120	96
	2	1.61	110	1.43	339	226	169	135
	3	1.97	110	1.43	415	276	207	166
DT3.0	1	1.37	110	1.43	287	192	144	115
	2	1.93	110	1.43	406	271	203	163
	3	2.37	110	1.43	498	332	249	199
DT4.0	1	1.82	120	1.73	316	211	158	126
	2	2.58	120	1.73	447	298	223	179
	3	3.16	120	1.73	547	365	274	219
DT5.0	1	2.28	125	1.92	356	237	178	142
	2	3.22	125	1.92	503	336	252	201
	3	3.95	125	1.92	617	411	308	247

At 50 cm nozzle height

EvenSpray 80°



- Suitable for knapsack applications of most products.
- Uniform distribution across the spray width ensuring targets receive an even application of chemical.
- Mixed droplet spectrum for effective delivery and retention of agrochemicals.

Type: Flat fan

Angle: 80°

Spray quality: Med

Pressure: 2-4 bar

Colour	Part No. (Mesh #)	BCPC Code	BCPC Spray Quality	Pressure (bar)	Flow L/min)	Application Rates (L/ha) at km/h					
						10 km/h	12 km/h	14 km/h	16 km/h	18 km/h	20 km/h
	01E800R (100#)	FE80/0.40/3	Fine	2.00	0.327	39	33	28	25	22	20
			Fine	2.50	0.365	44	37	31	27	24	22
			Fine	3.00	0.400	48	40	34	30	27	24
			Fine	3.50	0.432	52	43	37	32	29	26
			Fine	4.00	0.462	55	46	40	35	31	28
	015E80GR (100#)	FE80/0.40/3	Fine	2.00	0.490	59	49	42	37	33	29
			Fine	2.50	0.548	66	55	47	41	37	33
			Fine	3.00	0.600	72	60	51	45	40	36
			Fine	3.50	0.648	78	65	56	49	43	39
			Fine	4.00	0.693	83	69	59	52	46	42
	02E80YE (100#)	FE80/0.60/3	Medium	2.00	0.653	78	65	56	49	44	39
			Medium	2.50	0.730	88	73	63	55	49	44
			Fine	3.00	0.800	96	80	69	60	53	48
			Fine	3.50	0.864	104	86	74	65	58	52
			Fine	4.00	0.924	111	92	79	69	62	55
	03E80UB (80#)	FE80/0.80/3	Medium	2.00	0.980	118	98	84	74	65	59
			Medium	2.50	1.095	131	110	94	82	73	66
			Medium	3.00	1.200	144	120	103	90	80	72
			Fine	3.50	1.296	156	130	111	97	86	78
			Fine	4.00	1.386	166	139	119	104	92	83

Colour	Part No. (Mesh #)	BCPC Code	BCPC Spray Quality	Pressure (bar)	Flow L/min)	Application Rates (L/ha) at km/h					
						10 km/h	12 km/h	14 km/h	16 km/h	18 km/h	20 km/h
	04E80RE (50#)	FE80/1.60/3	Coarse	2.00	1.306	157	131	112	98	87	78
			Coarse	2.50	1.461	175	146	125	110	97	88
			Medium	3.00	1.600	192	160	137	120	107	96
			Medium	3.50	1.728	207	173	148	130	115	104
			Medium	4.00	1.848	222	185	158	139	123	111
	05E80LB (50#)	FE80/2.00/3	Coarse	2.00	1.633	196	163	140	122	109	98
			Coarse	2.50	1.826	219	183	157	137	122	110
			Coarse	3.00	2.000	240	200	171	150	133	120
			Medium	3.50	2.160	259	216	185	162	144	130
			Medium	4.00	2.309	277	231	198	173	154	139
	06E80GY (50#)	FE80/2.40/3	Coarse	2.00	1.960	235	196	168	147	131	118
			Coarse	2.50	2.191	263	219	188	164	146	131
			Coarse	3.00	2.400	288	240	206	180	160	144
			Medium	3.50	2.592	311	259	222	194	173	156
			Medium	4.00	2.771	333	277	238	208	185	166
	08E80WH (50#)	FE80/3.20/3	Coarse	2.00	2.613	314	261	224	196	174	157
			Coarse	2.50	2.921	351	292	250	219	195	175
			Coarse	3.00	3.200	384	320	274	240	213	192
			Coarse	3.50	3.456	415	346	296	259	230	207
			Coarse	4.00	3.695	443	370	317	277	246	222

NB Application rates are based on band width shown.

To calculate rates for alternative band widths:

(a) Referring to the chemical label, calculate the flow rate using the following equation.

$$L/min \text{ per nozzle} = \text{application rate (L/ha)} \times \text{speed (km/h)} \times \text{band width (m)} \div 600$$

(b) Refer to Evenspray tip chart - check spray quality against chemical label.

Knapsack calibration

- Where nozzles are specifically designed for knapsack spraying (e.g. Polijet, DeflecTip and FCX), the speeds given in the charts are walking speeds.
- For other nozzles the Flow rate or Application rate can be calculated using the following formulae:

$$\text{Flow rate} \frac{\text{L}}{\text{min}} = \left(\text{Application rate (l/ha)} \times \text{Speed (km/h)} \times \text{Swath width* (m)} \right) \div 600$$

$$\text{Application rate} \frac{\text{L}}{\text{Ha}} = \frac{60,000 \times \text{Flow Rate (l/min)}}{\text{Speed (km/h)} \times \text{Swath width* (m)} \times 100}$$

* At 50 cm nozzle height above ground