

**THREE PHASE AC
INDUCTION MOTORS**

Y2 SERIES
CE

YAMANASHI-DENKI

IEC Squirrel-Cage Motors
IE1 (EFF2)



Yamanashi Electric Power Group (M) Sdn. Bhd.
A Member of Yamanashi Power Group (UK).



Standards Compliance (IEC & CENELEC)

STANDARDS	IEC	CENELEC
IEC 60034		
General requirement for rotation electrical machines	60034-1	EN60034-1
Methods of determining losses & efficiency	60034-2	HD 53 2
Degree of protection	60034-5	EN60034-5
Methods of cooling	60034-6	EN60034-6
Mounting arrangements	60034-7	EN60034-7
Terminal marking and direction of rotation	60034-8	HD53854
Noise limit	60034-9	EN60034-9
Starting performance	60034-12	EN60034-12
Mechanical vibration	60034-14	EN60034-14
Standard voltages	60038	HD47251
Dimensions & output ratings	60072	HD231
Classification of environment conditions	600721-2-1	
Electrical Insulation	60085	

General Specification

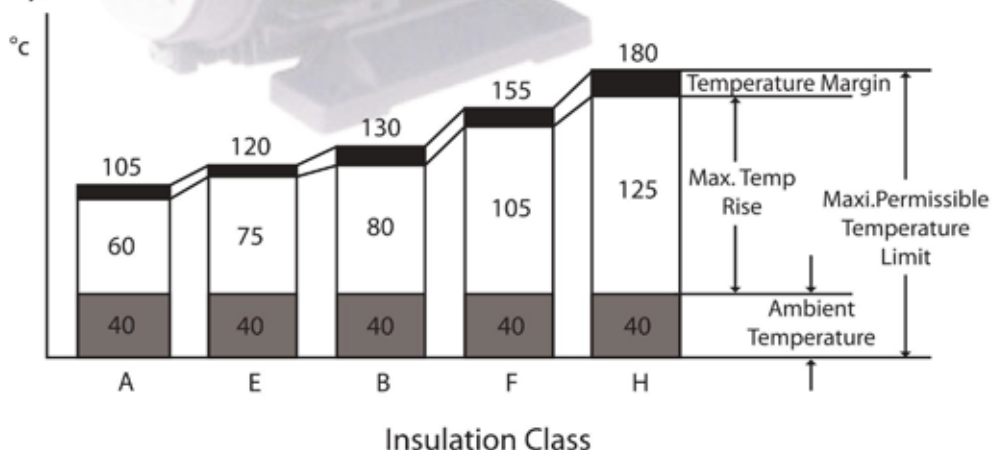
DESCRIPTION	STANDARD
Type	Squirrel cage. Totally Enclosed Fan Cooled (TEFC) induction motor
Power Rating	0.18 to 315kW; 2, 4, 6, 8 Poles
Efficiency	EFF2
Frame size	63 to 355mm
Frame materials	Cast iron body & end shields (Optional: Al)
Enclosure	IP 55
Insulation Class	Class F (Optional: Class H)
Temperature rise	Class B
Voltage	3kW and below: 230/400V, 3 Phase, 4kW and above: 400/690V, 3 Phase
Frequency	50 Hz (Optional: 60 Hz)
Direction of rotation	Bi-directional
Terminal box	Top
Bearings	Ball and roller
Key ways	Closed key ways
Ambient temperature	-15°C to +40°C
Altitude	Below 1000m sea level
Performane duty	S1, Continuous duty, standard

Insulation Class and Temperature Limits

The components of the insulation system are selected to ensure good protection. All materials used for insulating the winding and winding ends correspond to insulating class F or H according to IEC standard.

The following defines the insulation class per IEC 60034-1 with max 40°C ambient temperature.

Standard Yamanashi-Denki motors are rated Class F with Class B temperature rise for single speed continuous duty, S1 condition.



Voltage and Frequency

The operating voltage and frequency has variation of + / - 5% can be accommodated with some de-rated performance as a consequence.

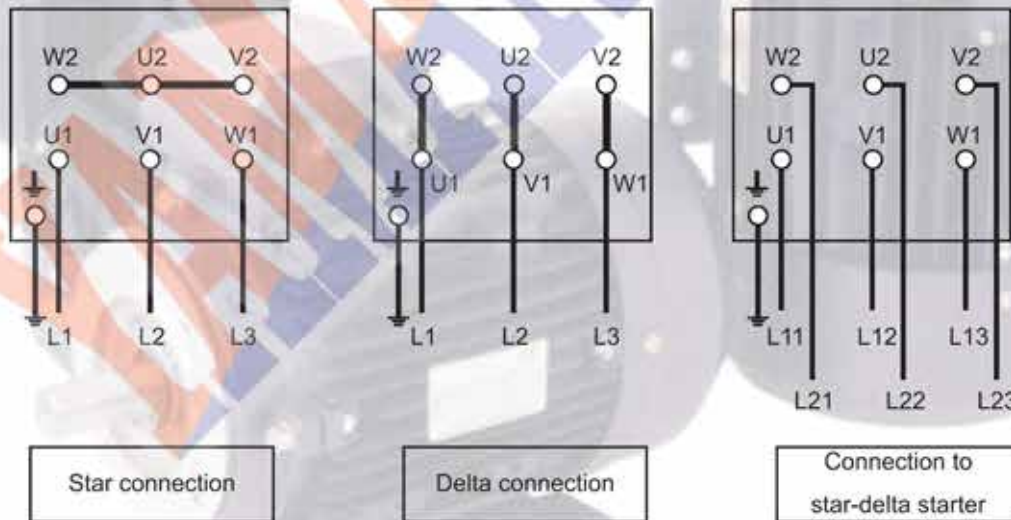
Yamanashi-Denki motors are suitable for DOL starting.

Motors up to 3kW are Star connected. Motors 4kW and above are Delta connected with 6 terminals for Star-Delta starting. In medium to large motors, the Star-Delta connection is more common for it can reduce the starting current by about 30%.

- Rated Voltage : 3kW and below: 230 / 400V, 3 phase
- : 4kW and above: 400 / 690V, 3 phase
- Rated frequency : 50 Hz (Standard), 60 Hz (Optional)

CONNECTION DIAGRAMS

Three Phase motors with cage rotor



Terminal Box and Cable Entries

Terminal box are cast iron and top mounted.

Noise Level

The noise levels and method of measurement are in accordance with IEC 60034-9.

Performance Data

Synchronous Speed : 3000 RPM
Power Range : 0.25 - 315kW (2 Pole)

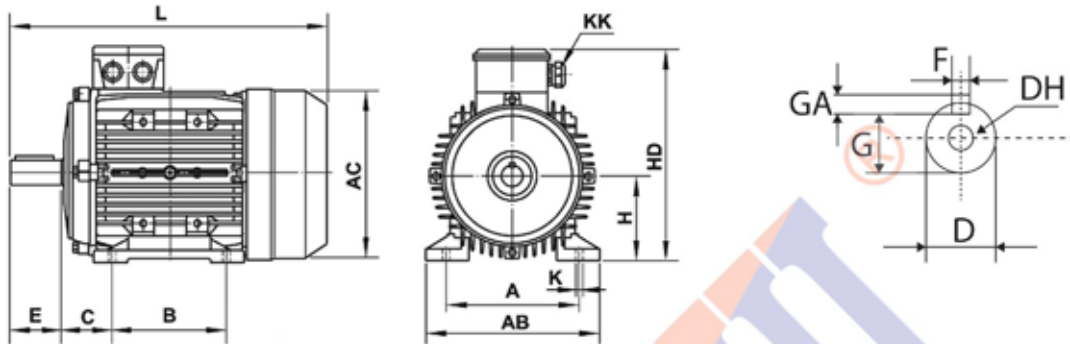
TYPE / FRAME SIZE	RATED OUTPUT		FULL LOAD					EFFICIENCY			POWER FACTOR			DIRECT ON LINE STARTING (MULTIPLES OF FULL LOAD)			MOMENT OF INERTIA	NOISE LEVEL	NET WEIGHT
			Speed RPM	CURRENT (AMPS)			Torque N-m	η (%)			cos Φ			TORQUE LRT	CURRENT LRC	TORQUE MAX. Torque			
	kW	HP		415V	400V	380V		100%	75%	50%	100%	75%	50%				kg.m ²	dB (A)	kg
Y2-632-2	0.25	0.33	2720	0.63	0.66	0.69	1.3	68.0	65.0	64.0	0.81	0.74	0.67	2.2	0.81	2.2	0.0004	61	7
Y2-711-2	0.37	0.5	2740	0.91	0.94	0.99	1.28	70.0	72.0	68.0	0.81	0.75	0.66	2.2	0.81	2.2	0.0005	64	9.8
Y2-712-2	0.55	0.75	2740	1.3	1.3	1.4	1.88	73.0	75.9	73.0	0.82	0.76	0.69	2.2	0.82	2.3	0.0006	64	10.6
Y2-801-2	0.75	1	2830	1.7	1.7	1.8	2.5	75.0	76.1	73.0	0.83	0.78	0.67	2.2	0.83	2.3	0.00088	67	15
Y2-802-2	1.1	1.5	2830	2.4	2.5	2.6	3.7	77.0	77.2	74.0	0.84	0.82	0.70	2.2	0.84	2.3	0.0011	67	15.5
Y2-905-2	1.5	2	2840	3.1	3.3	3.4	5.0	79.0	79.5	77.0	0.84	0.80	0.70	2.2	0.84	2.3	0.0016	72	21
Y2-90L-2	2.2	3	2840	4.4	4.6	4.9	7.4	81.0	82.5	81.0	0.85	0.84	0.74	2.2	0.85	2.3	0.0021	72	25
Y2-100L-2	3	4	2870	5.8	6.0	6.3	10.0	83.0	84.1	83.0	0.87	0.85	0.76	2.2	0.87	2.3	0.0033	76	30
Y2-112M-2	4	5.5	2890	7.4	7.7	8.1	13.3	84.2	84.2	83.0	0.88	0.85	0.78	2.2	0.88	2.3	0.006	77	38
Y2-132S1-2	5.5	7.5	2900	10.1	10.5	11.0	18.1	85.7	85.6	85.0	0.88	0.88	0.82	2.2	0.88	2.3	0.0124	80	64
Y2-132S2-2	7.5	10	2900	13.6	14.2	14.9	24.5	87.0	87.2	86.0	0.88	0.89	0.84	2.2	0.88	2.3	0.0144	80	68
Y2-160M1-2	11	15	2930	19.5	20.2	21.3	35.8	88.4	88.1	87.0	0.89	0.86	0.79	2.2	0.89	2.3	0.041	86	102
Y2-160M2-2	15	20	2930	26.4	27.4	28.8	48.8	89.4	88.7	88.0	0.89	0.87	0.80	2.2	0.89	2.3	0.051	86	120
Y2-160L-2	18.5	25	2930	31.8	33.0	34.7	60.4	90.0	89.7	89.0	0.90	0.87	0.80	2.2	0.90	2.3	0.061	86	140
Y2-180M-2	22	30	2940	37.6	39.0	41.0	71.5	90.5	89.7	90.0	0.90	0.87	0.83	2.2	0.90	2.3	0.089	89	170
Y2-200L1-2	30	40	2950	50.8	52.7	55.5	97.2	91.2	91.1	90.0	0.90	0.88	0.83	2.0	0.90	2.3	0.146	92	250
Y2-200L2-2	37	50	2950	62.2	64.5	67.9	119	92.0	92.1	91.0	0.90	0.88	0.83	2.0	0.90	2.3	0.173	92	260
Y2-225M-2	45	60	2970	75.4	78.2	82.3	145.8	92.3	92.1	91.0	0.90	0.87	0.84	2.0	0.90	2.3	0.254	92	330
Y2-250M-2	55	75	2970	92.5	96.0	101.0	177.4	92.5	92.4	91.0	0.90	0.86	0.81	2.0	0.90	2.3	0.344	93	400
Y2-280S-2	75	100	2970	122.7	127.3	134.0	241.6	93.6	92.4	91.5	0.90	0.88	0.84	2.0	0.90	2.3	0.567	94	525
Y2-280M-2	90	125	2970	146.6	152.0	160.0	289.6	93.8	93.8	92.5	0.91	0.89	0.87	2.0	0.91	2.3	0.659	94	565
Y2-315S-2	110	150	2980	178.6	185.3	195.0	353.4	94.0	94.0	92.5	0.91	0.89	0.85	1.8	0.91	2.2	1.527	96	985
Y2-315M-2	132	176	2980	213.4	221.4	233.0	423.7	94.5	94.1	92.5	0.91	0.90	0.88	1.8	0.91	2.2	1.644	96	1100
Y2-315L1-2	160	214	2980	255.6	265.1	279.0	513.6	94.6	94.3	92.5	0.92	0.91	0.88	1.8	0.92	2.2	1.879	99	1120
Y2-315L2-2	200	267	2980	318.8	330.6	348.0	640.5	94.8	94.5	93.5	0.92	0.91	0.88	1.8	0.92	2.2	2.173	99	1140
Y2-355M-2	250	334	2980	396.6	411.4	433.0	803.9	95.3	94.8	93.5	0.92	0.91	0.88	1.6	0.92	2.2	3.316	103	1750
Y2-355L-2	315	420	2980	498.3	516.8	544.0	1006.5	95.6	95.0	93.5	0.92	0.91	0.88	1.6	0.92	2.2	4.145	103	1775

Performance Data

Synchronous Speed : 1500 RPM
Power Range : 0.18 - 315kW (4 Pole)

TYPE / FRAME SIZE	RATED OUTPUT		FULL LOAD					EFFICIENCY			POWER FACTOR			DIRECT ON LINE STARTING (MULTIPLES OF FULL LOAD)			MOMENT OF INERTIA	NOISE LEVEL	NET WEIGHT
			Speed RPM	CURRENT (AMPS)			Torque N-m	η (%)			cos Φ			TORQUE LRT	CURRENT LRC	TORQUE MAX. Torque			
	kW	HP		415V	400V	380V		100%	75%	50%	100%	75%	50%				kg.m ²	dB (A)	kg
Y2-632-4	0.18	0.25	1310	0.57	0.59	0.62	1.3	60.0	60.9	55.5	0.73	0.65	0.57	2.1	4.4	2.2	0.0006	52	7.8
Y2-712-4	0.37	0.5	1330	1.0	1.1	1.12	2.6	67.0	66.5	62.0	0.75	0.65	0.52	2.1	5.2	2.2	0.0012	55	10.5
Y2-80M1-4	0.55	0.75	1405	1.4	1.5	1.6	3.8	71.0	71.1	67.0	0.75	0.66	0.55	2.4	5.2	2.3	0.0014	58	16
Y2-80M2-4	0.75	1	1415	1.9	1.9	2.0	5.1	73.0	72.8	68.0	0.76	0.65	0.54	2.3	6.0	2.3	0.0016	58	17
Y2-90S-4	1.1	1.5	1406	2.6	2.7	2.9	7.5	75.0	74.0	73.0	0.77	0.70	0.57	2.3	6.0	2.3	0.0024	61	23
Y2-90L-4	1.5	2	1410	3.4	3.5	3.7	10.2	78.5	77.6	75.5	0.79	0.75	0.64	2.3	6.0	2.3	0.0033	61	25
Y2-100L1-4	2.2	3	1408	4.7	4.9	5.2	14.9	80.0	78.0	77.0	0.81	0.76	0.65	2.3	7.0	2.3	0.0064	64	30
Y2-100L2-4	3	4	1416	6.2	6.4	6.8	20.2	82.6	80.5	78.7	0.82	0.78	0.66	2.3	7.0	2.3	0.0084	64	34
Y2-112M-4	4	5.5	1438	8.1	8.4	8.8	26.6	84.2	83.0	80.4	0.82	0.76	0.64	2.3	7.0	2.3	0.013	65	45.5
Y2-132S-4	5.5	7.5	1455	10.7	11.1	11.7	36.1	85.0	84.0	82.6	0.73	0.81	0.71	2.3	7.0	2.3	0.0273	71	65
Y2-132M-4	7.5	10	1448	14.3	14.8	15.6	49.5	87.0	86.0	84.0	0.84	0.83	0.74	2.3	7.0	2.3	0.036	71	76
Y2-160M-4	11	15	1460	20.4	21.2	22.3	72.0	88.4	87.5	84.2	0.84	0.81	0.75	2.2	7.0	2.3	0.082	75	123
Y2-160L-4	15	20	1462	27.6	28.6	30.1	98.0	89.4	89.5	88.0	0.85	0.82	0.75	2.2	7.5	2.3	0.109	75	135
Y2-180M-4	18.5	25	1466	33.4	34.7	36.5	120.5	90.5	90.2	89.0	0.86	0.82	0.76	2.2	7.5	2.3	0.151	76	158
Y2-180L-4	22	30	1472	39.6	41.0	43.2	142.8	91.0	90.6	89.0	0.86	0.83	0.76	2.2	7.5	2.3	0.168	76	182
Y2-200L-4	30	40	1475	52.8	54.7	57.6	194.3	92.0	91.5	90.0	0.86	0.84	0.80	2.2	7.2	2.3	0.275	79	237
Y2-225S-4	37	50	1480	64.0	66.4	69.9	238.9	92.5	91.8	90.0	0.87	0.84	0.80	2.2	7.2	2.3	0.470	81	305
Y2-225M-4	45	60	1472	77.6	80.5	84.7	292.1	92.8	92.3	91.0	0.87	0.84	0.79	2.2	7.2	2.3	0.535	81	320
Y2-250M-4	55	75	1479	94.3	97.9	103.0	481.5	93.0	92.8	91.0	0.87	0.84	0.79	2.2	7.2	2.3	0.679	83	407
Y2-280S-4	75	100	1485	128.2	133.0	140.0	182.5	93.8	93.4	91.5	0.87	0.85	0.77	2.2	7.2	2.3	1.263	86	535
Y2-280M-4	90	12	1486	153.0	158.7	16.0	578.7	94.2	93.8	91.5	0.87	0.86	0.81	2.2	7.2	2.3	1.586	86	600
Y2-315S-4	110	150	1483	184.1	191.0	201.0	700.7	94.5	93.9	92.5	0.88	0.86	0.81	2.1	6.9	2.2	3.050	93	1005
Y2-315M-4	132	176	1487	219.8	228.0	240.0	848.2	94.8	94.0	92.5	0.88	0.87	0.83	2.1	6.9	2.2	3.480	93	1010
Y2-315L1-4	160	214	1491	262.9	272.7	287.0	1025.4	94.9	94.3	92.5	0.89	0.87	0.85	2.1	6.9	2.2	4.030	97	1085
Y2-315L2-4	200	267	1488	328.8	341.1	359.0	1284.8	95.0	94.6	93.5	0.89	0.87	0.83	2.1	6.9	2.2	4.790	97	1240
Y2-355M-4	250	334	1485	405.8	420.9	443.0	1608.6	95.3	94.7	93.5	0.9	0.87	0.84	2.1	6.9	2.2	6.802	101	1680
Y2-355L-4	315	420	1489	509.3	528.2	559.0	2021.4	95.6	94.8	93.5	0.9	0.89	0.86	2.1	6.9	2.2	8.920	101	1780

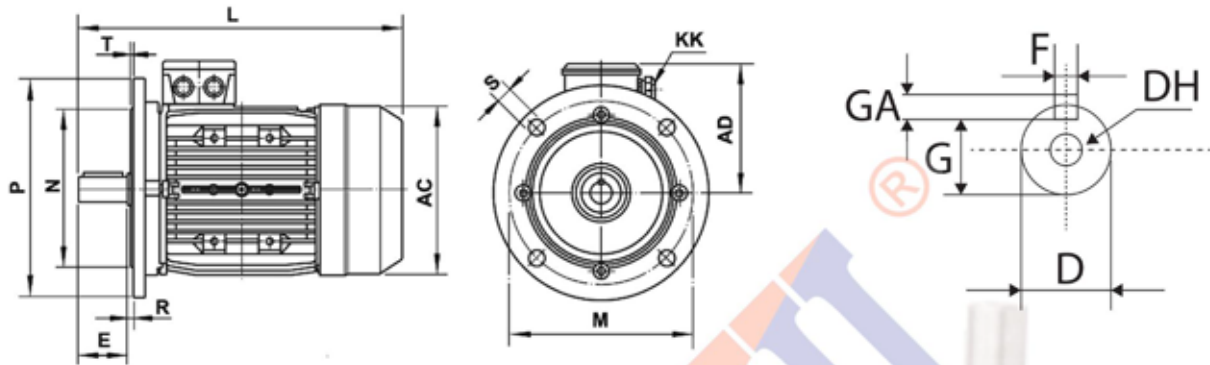
MOUNTING AND OVERALL DIMENSION



FOOT MOUNTING - 1M/B3

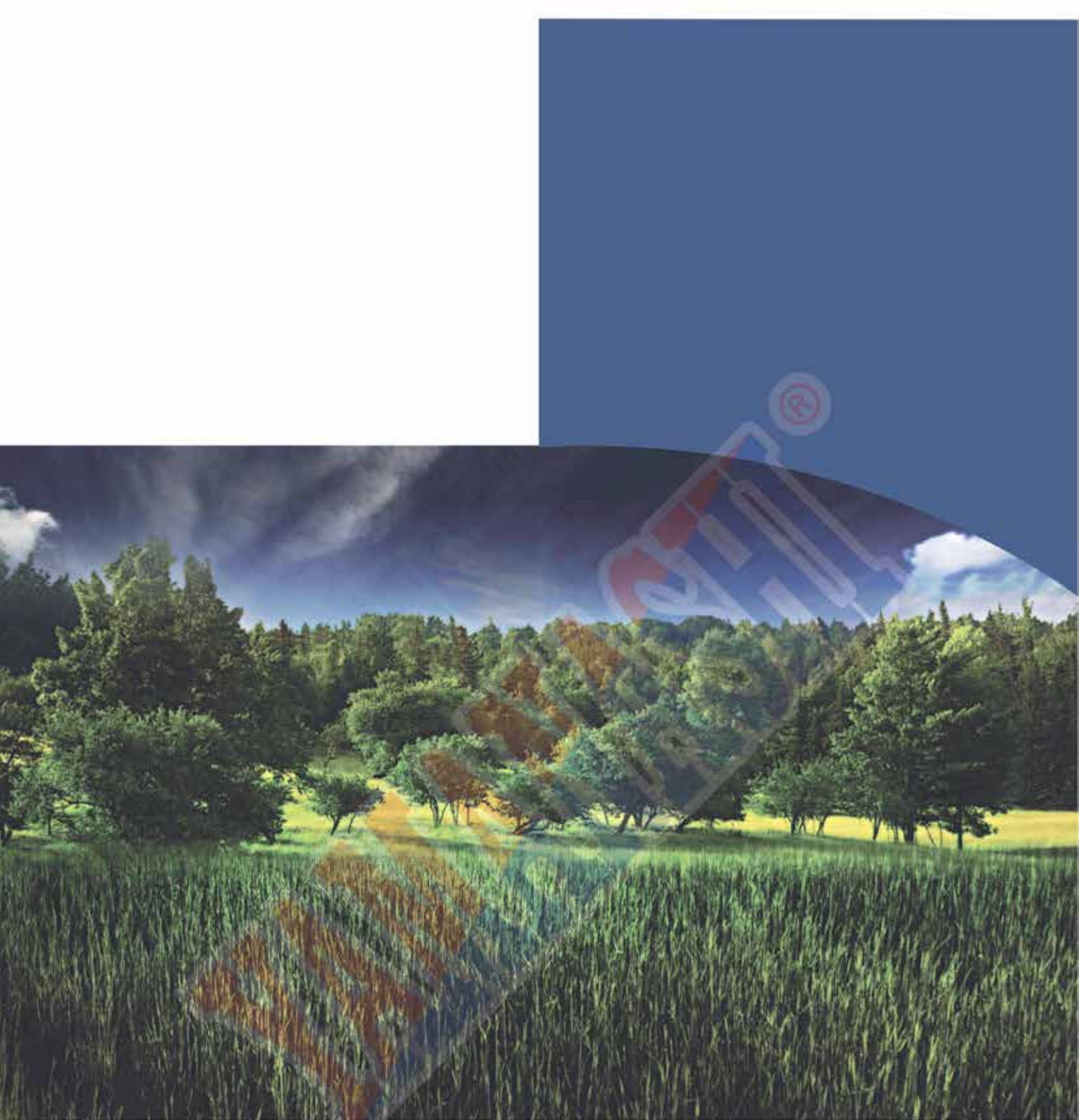
DIMENSIONS IN MM																
Y2 Type	Poles	A	AB	AC	B	C	D	E	F x GA	G	H	HD	K	L	DH	
63M	2, 4	100	135	130	80	40	11	23	4 x 4	8.5	63	180	7	230	M4 x 10	
71M	2, 4, 6	112	150	145	90	45	14	30	5 x 5	11	71	195		255	M5 x 12	
80M	2, 4, 6	125	165	175	100	50	19	40	6 x 6	15.5	80	220	10	295	M6 x 16	
90S		140	180	195		125	56	24	50	8 x 7	20	90		250	320	M8 x 19
90L		190	230	240	140	70	28	60	24		100	270	112	300	12	
100L										470						M12 x 28
112M		510	M16 x 36													
132S		216		270	275	178	89	38	80	10 x 8	33	132	345	15	615	M16 x 36
132M		254	320	330	210	108	42	110	12 x 8	37	160	420	670			
160M		279	355	380	254	241	48		14 x 9	42.5	180	455	200	505	700	M20 x 42
160L		740														
180M		318	395	420	305	133	55	16 x 10	49	250	615	280	680	19	770	M20 x 42
180L	815															
200L	820	M20 x 42														
225S	4		286	149	311	60	140	18 x 11	53	225	560	250	615	24	845	
225M	2	356	435												470	55
250M	4, 6	406	490	510	349	168	65	140	18 x 11	58	280	680	28	985		
280S	2													457	550	580
280M	4, 6	508	635	645	457	216	65	170	22 x 14	71	315	845	28	1178		
315S	2													80	140	18 x 11
315M	4, 6	508	635	645	457	216	65	140	22 x 14	71	315	845	28	1290		
315L	2													80	140	18 x 11
355M	4, 6	610	730	710	560	254	75	140	20 x 12	67.5	355	1010	28	1500	M20 x 42	
355L	2													95	170	25 x 14
	4, 6	610	730	710	630	254	75	140	20 x 12	67.5	355	1010	28	1500	M20 x 42	
	2													95	170	25 x 14

MOUNTING AND OVERALL DIMENSION



FLANGE MOUNTING - IM/B5

DIMENSIONS IN MM																		
Y2 Type	Poles	AC	D	E	F x GA	G	M	N	P	S	T	HD	L	DH				
63M	2, 4	130	11	23	4 x 4	8.5	115	95	140	10	3	130	230	M4 x 10				
71M	2, 4, 6	145	14	30	5 x 5	11	130	110	160		145	255	M5 x 12					
80M	2, 4, 6	175	19	40	6 x 6	5.5	165	130	200	12	3.5	185	295	M6 x 16				
90S		195	24	50	8 x 7	20						195	320	M8 x 19				
90L		215	28	60		24	215	180	250	245	385	M10 x 22						
100L					265	400												
112M		240	38	80	10 x 8	33	265	230	300	15	4	315	470	M12 x 28				
132S		510										510						
132M		330	42	110	12 x 8	37	300	250	350	19	5	385	615	M16 x 36				
160M		430	700															
160L		380	48	14 x 9	42.5	430	740											
180M		420	55	16 x 10	49	350	300	400	480	770	M20 x 42							
180L	470	55	16 x 10	49	400	350	450	535	815									
200L	4	470	60	140	18 x 11	53	500	450	550	19	5	845	910	M20 x 42				
225S	2	510	60	18 x 11	53	595						910						
225M	4, 6	580	65	140	20 x 12	67.5	500	450	550	19	5	650	985	M20 x 42				
250M	2														65	18 x 11	58	595
280S	4, 6	580	75	140	20 x 12	67.5	500	450	550	19	5	650	985	M20 x 42				
280M	2														65	18 x 11	58	1035
280M	4, 6														75	20 x 12	67.5	1035



Sole Agent:

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