

## EXPLANATION OF "PLAYER IMPACT RATING (PIR)"

### ALGORITHM

The Player Impact Rating (PIR) is based on events or criteria by individual players taking place on the field for all regularly scheduled varsity games. Each event/criteria influences the outcome of the game in either a positive or negative way. The player, his/her position, the event and the significance of the event/criteria impacts the player's rating. Only those events which are statistically listed on a team's web page are used.

There are currently 22 events:

1. Games Played
2. Games Started
3. Goals
4. Assists
5. Total Points
6. Draw Controls (W)
7. Total Shots
8. Shots on Goal
9. Missed Shots Off Goal
10. Shot Percentage
11. Shots-on-goal Percentage
12. Ground Balls
13. Turnovers
14. Caused Turnovers
15. Free Position Goals (W)
16. Free Position Misses (W)
17. Face off wins (M)
18. Face off losses (M)
19. Goals Saved
20. Goals Allowed
21. Shots Faced
22. Save Percentage

Other statistics that may appear on a team page such as penalties, game winner, man-down goals, etc. are not used because they do not appear on all team pages within a division.

There are four statistically segregated positions for both men and women:

- \* Attack
- \* Midfield (offensive, defense, faceoff)
- \* Defense
- \* Goalie

The Player Impact Rating formula is as follows: Each of the 20 events above is multiplied by a weight factor. The weight factor is based on position and was developed so that each of the four positions has the same opportunity to reach the maximum PIR value. These values are divided by the number of games played by the player so that players with more games will not have an advantage over players with less games. This will produce the 'Raw PIR'.

Next, the PIR is adjusted for the level of completion. Attack ratings are modified with a Defensive Factor which is based on the defenses of opponents

and the strength of schedule of opponents. The defenders and goalies PIR Raw values are modified based on the Offense Factor and strength of schedule of opponents. The PIR Raw for midfielders is modified by the average of the offense and defense factors of opponents and the strength of schedule of opponents. *Defense factor* indicates goals allowed compared to opponent's goals scored per game. It measures the performance a a team in holding under their normal goal production. Range from 0.5 to 1.0. *Offense factor* indicates goals scored compared to goals allowed by an opponent per game. It measures the performance of a team in score goals in excess of an opponent's team goal allowance. Range from 0.5 to 1.0. *Opponent's Strength* based on strength of schedule of a team with a range from 0.5 to 1.0

Finally basis points(constant) is added to all players so that the lowest PIR is not negative. In past years, the PIR's were normalized so that each position has a maximum of 100. This normalization no longer exists because it caused PIR's for players to change dramatically even when they did not play.

The list of players based on the highest PIR is divided into two lists: Those that have played a minimum number of threshold games (e.g., 5) and those that have played less than this minimum threshold.

## **RESULTS**

A.[BIO]: Bio information such as high school, College, Position, Class, Player Number,Height and Weight (Men) and Impact Rating.

B.[PIR METERS]: PIQ Meters representing percentile for all division players; for the position of the player and for the team. Percentiles are measured from 0 to 100. Percentile would be at the top of that group.

C.[RANK/PERCENTILE]: Ranking and Percentile for each individual criteria or event. For example, 100% of goals would mean at the top of the division.

D.[VALUES]:The actual value of a criteria such as the number of total points.

E.[WEIGHT FACTOR]: The weight factor for each event based on position.

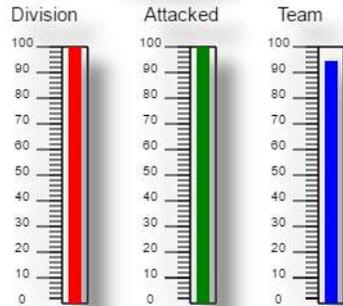
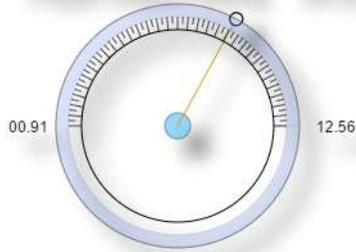
F.[NET]: The result of multiplying the value with the weight factor.

G.[STRENGTH MODIFICATION]: Multiplying the Raw PIR with the offensive, defensive and SOS factor.

# Michael, Michaela



Player Impact Rating 08.60



B. PIR METERS

BIO  
 Home Town ..... Ridgewood, N.J.  
 High School ..... Ridgewood HS  
 College ..... Southern California  
 Position ..... Attack  
 Class ..... Jr  
 Player No ..... 02  
 Height ..... 5/4  
 Impact Rating ... 08.60

A. BIO

The three scales represent the percentile (100% maximum) of the PIR for all players in a division, position or the team.

## EXPLANATION

	RANK	PERCENTILE	VALUE	* WEIGHT	=	NET
Games Played			21	* 0.20	=	4.20
Games Started			20	* 0.30	=	6.00
Goals	4	99	68	* 0.65	=	44.20
Assists	23	99	31	* 0.55	=	17.13
Total Points	2	99	99	* 0.13	=	12.87
Draw Controls	8	99	107	* 0.45	=	48.15
Total Shots	20	99	118	* 0.10	=	11.80
Shots on Goal	9	99	96	* 0.10	=	9.60
Missed Shots Off Goal	>100	96	22	* -0.05	=	-1.10
Shot Percentage	>100	91	0.58	* 1.00	=	0.58
Shots-on-goal Percentage	>100	78	0.81	* 1.00	=	0.81
Ground Balls	>100	73	15	* 0.45	=	6.75
Turnovers	41	98	40	* -0.60	=	-24.00
Caused Turnovers	>100	89	13	* 2.00	=	26.00
Free Position Goals	1	100	22	* 0.10	=	2.20
Free Position Misses	48	98	14	* -0.10	=	-1.40
Goals Saved	--	--	0	* 0.80	=	0.00
Goals Allowed	--	--	0	* -0.80	=	-0.00
Shots Faced	--	--	0	* 0.01	=	0.00
Save Percentage	--	--	0.00	* 5.00	=	0.00

F. NET

PIR RAW (NET/GamesPlayed)						7.45
Defensive Factor (DF)						0.97
Strength Schedule (SOS)						0.84
Basis Points						2.50
PIR = (PRI RAW)*DF*SOS + Basis P						8.60

G. O/D MODIFICATIONS

List of all players for [Southern California Division](#)

